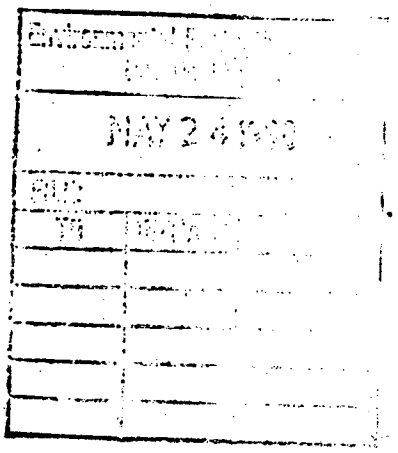

THE NIAGARA RIVER TOXICS MANAGEMENT PLAN

1990 UPDATE

Niagara River Secretariat

March 1990

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I. INTRODUCTION

On February 4, 1987, the heads of four environmental agencies in the U.S. and Canada signed a document known as the "Declaration of Intent" (Appendix I), which outlines the principles to be followed in the pursuit of a common goal to reduce loadings of toxic chemicals to the Niagara River through appropriate joint activities and separate agency activities. The agencies involved are the U.S. Environmental Protection Agency (EPA), Environment Canada (EC), the New York State Department of Environmental Conservation (DEC), and the Ontario Ministry of the Environment (MOE).

The Declaration of Intent, combined with a detailed Workplan, which is updated regularly, is entitled The Niagara River Toxics Management Plan (NRTMP). Through implementation of the NRTMP, the four agencies are committed to significant reductions in toxic chemical loadings to the Niagara River.

II. BACKGROUND

The Niagara River is a 37-mile (60-kilometer) channel that connects Lake Erie to Lake Ontario. Divided into upper and lower reaches by Niagara Falls, it provides 83% of the total tributary flow to Lake Ontario. A map of the Niagara Study Area is included as Figure I.

In February 1981, the Niagara River Toxics Committee (NRTC), made up of technical staff from the four agencies, was established to oversee and coordinate a major bi-national investigation of toxic chemicals entering the Niagara River. After completing its work, the NRTC issued a comprehensive report and recommendations in October of 1984. Soon thereafter, each of the four agencies developed specific action plans and special initiatives in response to that report and its recommendations.

Continued discussions among the four agencies brought about a consensus on the need for a long-term, bi-national commitment on joint and coordinated actions, beginning with river monitoring. By October of 1986 the first attempt at a comprehensive work plan was completed by technical staff from the four agencies. By February of 1987 an overall policy direction had been agreed to, along with specific commitments for the reduction in Niagara River loadings of persistent toxic chemicals of concern by 50% by 1996. The Niagara River Toxics Management Plan officially began with the signing of the Declaration of Intent. The NRTMP Workplan is updated regularly to report progress in meeting Plan commitments, and to present follow-up commitments.

III. ACCOMPLISHMENTS TO DATE

Since the release of the Niagara River Toxics Committee Report in the fall of 1984, the Four Parties, acting individually and together, have undertaken a variety of initiatives. Some of the major accomplishments of the Four Parties since that time are:

- We have reduced the loadings of EPA priority pollutants to the Niagara River from Canadian and U.S. point sources by more than 80 percent, as compared with the levels in 1981-'82.

- We have agreed on sampling and analytical protocols, for monitoring the ambient Niagara River water column; the ambient water quality data developed using these protocols serve as the primary basis for other analytical efforts under the NRTMP.

- We determined that fifteen toxic chemicals are problems in the Niagara River/Lake Ontario ecosystem. We are continuing to assess additional chemical data for possible expansion of this list.

- We determined that a subset of the fifteen problem chemicals has significant Niagara River sources; they are the chemicals subject to the 50 percent reduction requirement of the Declaration of Intent. Ten chemicals are already listed, and we are continuing to assess additional chemical data for possible expansion of this list.

- We quantified the base-year loadings of the ten chemicals to the river from point sources and estimated, by inference, the loadings from non-point sources. These are the basis for specific numerical load reduction targets for point and non-point sources of these ten chemicals by 1996. Consistent with the Declaration of Intent, these targets are 50 percent of the 1986-'87 base year loads. Targets will be refined as the data base is improved.

- We have agreed on a framework for tracking progress in meeting the 50 percent load reduction commitments. The first annual progress report will be issued in December 1990.

- We identified the twenty hazardous waste site clusters in the U.S. estimated to contribute 99 percent of the toxic chemical loading from all hazardous waste sites in the U.S. to the Niagara River. We also presented ambitious schedules intended to drive cleanup of these twenty site clusters. The best estimate of the potential toxic chemical loading from these sites to the river (694 pounds per day or 315 kilograms per day) is expected to be reduced to 8 pounds per day (4 kilograms per day) by 1996.

- We identified certain toxic chemicals entering the Niagara River from Lake Erie at elevated levels. We brought this issue to the

attention of the International Joint Commission, and we intend to make specific recommendations to ensure that the responsible jurisdictions address this inter-lake transport issue.

Appendices II and III list all activities completed to date under the auspices of the NRTMP. Appendix II provides the status of NRTMP activities through September 1988, and Appendix III provides the status of activities through April 1990. Each activity is either reported as completed, or brought forward in the same or in modified form in the updated Plan. The purpose of these appendices is to ensure continuity in the planning process, and to allow the reader to see the updated Plan in the context of work performed to date.

IV. THE PLAN

The fundamental goal of the Niagara River Toxics Management Plan is to reduce the loadings of toxic chemicals to the Niagara River. Reductions will be achieved by accomplishing four related objectives[1]:

- Sorting chemicals as a basis for action,
- Implementing programs to reduce the loadings of toxics entering the Niagara River,
- Assessing the success of programs to reduce the loadings of toxics, ensuring a continuing focus on critical inputs, and
- Coordinating NRTMP activities with Remedial Action Plan (RAP) activities.

The activities and schedules of the 1990 Revision of the NRTMP are presented in Appendix IV. A discussion of these commitments follows.

A. SORT

The first objective of the Plan is to sort chemicals as a basis for action.

The Four Parties developed a system for categorizing toxics, which is summarized in Table I. The system is used to determine either that a toxic chemical warrants corrective action on a priority basis, or that a toxic can be controlled more routinely through the

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[1] These objectives, which are not listed in order of priority, will be addressed concurrently.

implementation of existing and developing programs that apply to the control of all toxics.

An ad hoc committee developed a master list of 92 persistent toxic chemicals of concern in the Niagara River; these are the first priority for categorization. A preliminary sorting of these 92 chemicals has been completed, in accordance with this categorization system, using river water column data and Lake Ontario sportfish data. This preliminary categorization is presented in Table II.

Based on the preliminary categorization:

- There are 15 toxics that warrant corrective action on a priority basis.
- There are 25 toxics that are found only at levels below the most stringent existing standard or criterion; these toxics can be controlled more routinely through the implementation of existing and developing programs that apply to the control of all toxics.
- There is 1 toxic that must be analyzed using a more sensitive analytical protocol in order to allow a comparison with existing standards and criteria.
- There is 1 toxic for which we have ambient data, but for which there is no standard or criterion.
- There are 50 toxics for which we have no ambient data; for many of these we also do not have existing standards or criteria.

As shown in Table III, fifteen Niagara River toxics have been selected for priority attention because they are present in the Niagara River/Lake Ontario ecosystem at unacceptably high levels. Seven of the fifteen are found in the Niagara River water column at levels that exceed existing standards or criteria. Nine of the fifteen, including one of the seven just mentioned, are found in Lake Ontario sportfish at levels that exceed existing standards or criteria.

As shown in Table III, ten of the fifteen priority toxics have significant Niagara River sources. They are the chemicals subject to the 50 percent reduction commitment in the Declaration of Intent.

A comprehensive categorization will be completed by May 1990 and updated annually thereafter. The Four Parties will use that categorization and available source data to update the list for 50 percent reduction by October 1990, and annually thereafter. The categorization process will also be used for establishing priorities for ambient and source monitoring, developing analytical protocols, and developing criteria and standards.

B. REDUCE

The second objective of the Plan is to implement programs to reduce the loadings of toxics entering the Niagara River.

In order to achieve this objective, the Four Parties have developed commitments under the Plan to reduce the loadings of all toxic chemicals from all categories of sources, that is, to:

- Reduce the loadings from point sources to the river,
- Reduce the loadings from non-point sources to the river,
- Reduce the upstream loadings to the river from Lake Erie, and
- Foster pollution prevention in the basin.

1. Point Sources

Inputs of toxics to the Niagara River from point sources have been identified and are being addressed in accordance with U.S. and Canadian point source plans.

The 1988 Revision of the NRTMP included commitments to:

- Identify the point source loadings of the full range of toxics to the Niagara River;
- Present Canadian and U.S. plans to reduce the point source loadings of the chemicals on the list for 50 percent reduction, under the Declaration of Intent; and
- Prepare reports on the overall status of the Canadian and U.S. point source control programs.

To meet these commitments, the Four Parties issued five separate reports. The highlights of these reports are:

- Since 1981-'82, there has been more than an 80 percent reduction in the loadings of the full range of toxics to the Niagara River from point sources in Canada and the U.S.;
- We have identified the point source discharges that contribute one or more of the ten chemicals that are targeted for 50 percent reduction by 1996, as compared to the base year of the Declaration of Intent, that is, 1986-'87; and
- We have plans in place to attain the 50 percent reduction goal for point sources to the river (the U.S. plan is an interim plan).

Beginning with this 1990 Update, the Four Parties will attempt to simplify these reports into a Canadian report and a U.S. report that meet the full range of the point source commitments. Accordingly, the Plan includes commitments for:

- o A Canadian annual point source status report and plan update; and

- o A final U.S. point source plan, and an annual status report and plan update.

2. Non-Point Sources

Unlike point sources, the non-point source components of the Niagara River loadings of the ten chemicals have not yet been directly measured. There is, therefore, no current basis for a comprehensive identification of the individual sources contributing to the non-point loadings.

To proceed as expeditiously as possible to the implementation of non-point control programs, the Four Parties have focused initially on the remediation of hazardous waste sites contributing toxic chemicals to the Niagara River. In November 1989, EPA and DEC issued a report on the hazardous waste sites in the U.S. contributing toxics to the river. The report:

- o Identified the twenty hazardous waste sites in the U.S. estimated to contribute 99 percent of the toxic chemical loading from all waste sites in the U.S. to the Niagara River; and

- o Presented ambitious schedules intended to drive cleanup of these twenty sites. The best estimate of the potential toxic chemical loading from these sites to the river (694 pounds per day or 315 kilograms per day) is anticipated to be reduced to 8 pounds per day (4 kilograms per day) by 1996.

EPA and DEC will refine the loading estimates for these sites to be chemical-specific by September 1990 and will issue a status report and plan update by November 1990, and annually thereafter.

MOE will issue a Canadian hazardous waste sites report on the five Canadian waste sites by May 1990, with status reports and updates annually thereafter.

The Four Parties recognize the need to also focus on non-point sources other than hazardous waste sites. DEC issued non-point source assessment and program status reports in 1989 and 1990, respectively. Annual updates, beginning June 1991, will describe the focused application of these programs to reduce Niagara River non-point source loadings of persistent toxic chemicals of concern.

MOE's initial report will be issued by December 1990, with status reports and updates annually thereafter.

3. Upstream Loadings

Six of the fifteen NRTMP priority toxics have significant upstream Great Lakes sources.

The Four Parties alerted the International Joint Commission, by letter dated March 21, 1989, that Lake Erie water entering the Niagara River contains elevated levels of the six toxic chemicals.

The Four Parties now intend to make specific recommendations to ensure that the responsible jurisdictions address this inter-lake transport issue.

4. Pollution Prevention

In order to make further progress towards the goal of virtual elimination of toxic discharges as embodied in the Great Lakes Water Quality Agreement, the Four Parties are committed to evaluating how pollution prevention activities (for example, source reduction) can be incorporated in the Plan.

The Four Parties will:

- Develop a pollution prevention initiative for the Niagara River/Lake Ontario basin by October 1990; and

- Incorporate specific commitments from the initiative in the 1991 update of the Plan. The pollution prevention initiative will build on, and be complementary to, the existing pollution prevention activities of the individual agencies.

C. **ASSESS**

The third objective of the Plan is to assess the success of programs to reduce the loadings of toxics, ensuring a continuing focus on critical inputs.

The starting point for measuring progress in reducing toxic chemical loadings to the Niagara River is a coordinated long-term monitoring program in the river itself. Accordingly, the Four Parties have:

- Developed and implemented a mutually acceptable sampling and analysis program using state-of-the-art high volume techniques to quantify the change in the loading of toxic chemicals in the river water column over time and distance;

- o Collected three years of data from this intensive monitoring of toxic chemical loadings at the source (Ft. Erie) and mouth (Niagara-on-the-Lake) of the river;

- o Issued annual summaries of these Upstream/Downstream monitoring data for two years (when the third annual summary is issued, it will provide the first basis for identifying a trend in the differential loading of toxic chemicals in the river); and

- o Continued to improve the river monitoring program by:

  - Expanding the number of chemicals monitored;

  - Confirming the representativeness of the data from the Niagara-on-the-Lake station, and initiating a sampling program to verify the representativeness of the Ft. Erie station; and

  - Incorporating improvements identified from field and laboratory audits.

The Four Parties have developed and issued a Framework for 50% Reduction Progress Report for the NRTMP. This report:

- o Detailed how to prepare an annual report, using Niagara River ambient and source data, and documenting progress toward attainment of the goal of 50 percent reduction of problem toxics;

- o Identified how best to present statistically valid year-to-year comparisons of river loadings data; and

- o Revised the protocol for adding chemicals to the list of priority toxics for 50 percent reduction.

The first progress report will be issued by December 1990 and will incorporate the results of:

- o The Upstream/Downstream Report for April 1988 - March 1989, and a re-analysis of data from prior years in accordance with the Framework for 50% Reduction Progress Report;

- o Point source loadings reports for 1986/'87, 1987/'88, and 1988/'89;

- o A report presenting initial estimates of comprehensive non-point source loadings, based on readily available information; and
  Have they done more than process of elimination testing of the 20 sites.

- o A report on gains and losses of toxic chemicals in the river system.

The 1990 NRTMP Update also includes a number of other assessment-related commitments:

- o A workplan to improve the independent estimates of non-point source loadings;
- o A report on the representativeness of the Ft. Erie sampling station;
- o Recommendations to guide the development of a consistent set of adequately protective, enforceable standards for the Niagara River;
- o Expansion of the chemicals monitored in the Niagara River, as necessary;
- o Recommendations on the need for a biomonitoring program;
- o Development of a Niagara Falls, New York groundwater model; and
- o A comparison of the existing Niagara River downstream load to estimates of the load that would allow attainment of standards and criteria in Lake Ontario.

D. **COORDINATE**

The fourth objective of the Plan is to coordinate activities with Remedial Action Plan (RAP) activities.

A RAP has been completed for the Buffalo River Area of Concern and has been submitted to the International Joint Commission. U.S. and Canadian RAPs have also been initiated for the Niagara River Area of Concern.

The Four Parties will prepare annual progress reports on these three RAPs, beginning May 1990. The progress reports will provide the basis for Four Party recommendations to the RAPs, and will provide the opportunity for the review of NRTMP activities proposed by the RAPs.

V. ORGANIZATION

The Four Parties have established the integrated management structure shown in Figure II to implement the Niagara River and Lake Ontario Toxics Management Plans, and to keep them current. The elements of the structure that are relevant to the NRTMP are described below.

A. Niagara River Coordination Committee

The Coordination Committee consists of senior managers from each of the four jurisdictions. They are publicly responsible for meeting the individual agency and Four Party commitments in the NRTMP.

B. Niagara River Secretariat

The Secretariat is the working staff of the Coordination Committee. All NRTMP reporting to the Coordination Committee is done through the Secretariat. It is responsible for drafting NRTMP updates and status reports for review and issuance by the Coordination Committee. The Secretariat will schedule meetings, record and distribute minutes of the meetings, and ensure that the Coordination Committee is kept well informed on all activities in the NRTMP.

C. Standing Technical Committees

Three committees perform technical activities in support of the NRTMP.

1. River Monitoring (RMC) - The RMC is responsible for all technical and scientific aspects of the Four Party ambient river monitoring program.

2. Point Source (PSC) - The PSC is responsible for assisting the Secretariat in coordinating Four Party activities related to point source loading to the Niagara River.

3. Non-Point Source (NPSC) - The NPSC is responsible for assisting the Secretariat in coordinating Four Party activities related to non-point source loadings to the Niagara River.

Three committees perform technical activities in support of both the Niagara River and Lake Ontario Toxics Management Plans.

4. Categorization (CC) - The CC categorizes toxics for action based on existing data and existing standards and criteria, and recommends the collection of additional data and the development of new standards and criteria, as appropriate.

5. Standards and Criteria (SCC) - The SCC reviews existing standards and criteria for consistency and adequacy relative to the purposes of the Niagara River and Lake Ontario Plans, and recommends individual agency actions to develop new or revised standards and criteria.

6. Fate of Toxics (FTC) - The FTC develops mathematical models of pollutant fate to relate pollutant inputs to levels of toxics in the ambient water column, sediment and biota.

One committee performs technical activities in support of the Lake Ontario Toxics Management Plan:

7. Ecosystem Objectives Work Group (EOWG) - The EOWG, which was established by EPA and Environment Canada under the terms of the Great Lakes Water Quality Agreement, develops ecosystem objectives and indicators for Lake Ontario.

Detailed revised charges to these committees will be prepared by the Niagara River and/or Lake Ontario Secretariats once the 1990 updates of the NRTMP and LOTMP have been adopted by the Coordination Committee.

VI. PUBLIC INVOLVEMENT

The goal of the public involvement process is to facilitate the attainment of our environmental goal for the Niagara River by providing a forum for public consultation and involvement in the continued development and implementation of the NRTMP.

Since the inception of the Niagara River Toxics Management Planning effort, the Four Parties have been committed to public involvement in the development and implementation of the Plan. As the Four Party effort matured, however, it became apparent that improvements could be made in the public involvement process. The Four Parties, therefore, established an ad hoc committee of agency communication representatives to propose improvements.

In November 1989, after consultation with a number of involved citizens, the ad hoc work group issued the report Public Involvement Workplan Proposal: Niagara River/Lake Ontario Toxics Management Plan (Bibliography #20). The proposal was accepted by the Coordination Committee, and the ad hoc work group was asked to develop a work plan implementing the proposal. In April 1990, the ad hoc work group completed its charge and issued the report Public Involvement Workplan (Bibliography #21).

Consistent with the recommendations of the group, the salient features of the NRTMP public involvement process are described below:

A. Citizen Involvement on Standing Technical Committees

In order to facilitate effective public involvement on the six standing technical committees that report to the Coordination Committee:

- Two citizens, one Canadian and one U.S., have been added as full members of each of the committees; their travel expenses are reimbursed consistent with standard government practices.

- Additional interested citizens have been added as correspondents; they receive minutes of meetings and of conference calls, and technical products for review and comment.

Committee Membership will be reviewed annually.

B. Public Involvement in the Formulation of Secretariat Recommendations to the Coordination Committee

In order to ensure effective public involvement in the formulation of Secretariat recommendations to the Coordination Committee, the Secretariat will conduct public consultation workshops on the plan updates. In addition, the Secretariat will conduct issue-oriented public consultation workshops, as needed.

In each case the Secretariat will prepare an Issues for Discussion Document to facilitate a dialogue with the public at the workshop, and a Public Responsiveness Document to summarize the comments received and the actions recommended to address the comments. The Public Responsiveness Document will be used to ensure that the Coordination Committee is aware of the public's views at the time it is called on to make policy choices.

C. Coordination Committee Open Meetings

Consistent with longstanding practice, the Coordination Committee conducts all of its meetings in public, in the Niagara area:

- Providing advance notification of meetings;

- Making documents available in advance of the meetings;

- Presenting issues in understandable terms at the meetings; and

- Encouraging questions and comments from the public at the meetings.

These open meetings play a critical role in ensuring public involvement and are a key mechanism for ensuring public accountability.

D. Other Outreach Activities

The Four Parties will also undertake a number of other outreach activities related to the NRTMP:

- The Secretariat will maintain a bibliography of all NRTMP documents; copies of the bibliography and all documents will be available at the Repositories listed in Table IV.
- The Secretariat will prepare articles about the NRTMP for inclusion in RAP newsletters.
- The Secretariat will visit RAP sites to discuss the NRTMP.
- The Four Parties will improve the existing NRTMP mailing list.
- The Secretariat will prepare a number of documents to enhance communication with the public:
  - A project overview;
  - A timetable of activities; and
  - A flyer for the potentially involved public.
- The Four Parties will seek to enhance media relations with respect to NRTMP activities:
  - Developing press releases prior to meetings and workshops; and
  - Ensuring the availability of a media coordinator at these meetings and workshops.

TABLE I

CATEGORIES OF TOXICS

I. Ambient Data Available

A. Exceeds enforceable standard

B. Exceeds a more stringent, but unenforceable criterion

C. Equal to or less than most stringent criterion

D. Detection limit too high to allow complete categorization

E. No criterion available

II. Ambient Data Not Available NOT SUFFICIENT TO CATEGORIZE IN TABLE I

A. Evidence of presence in or input to the River

B. No evidence of presence in or input to the River

TABLE II

PRELIMINARY CATEGORIZATION
NIAGARA RIVER TOXICS

Categories IA and IB (15 Toxics) needs Niagara standards eliminated ✗ for 50% reduction

- benz(a)anthracene
- benzo(a)pyrene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- chlordane
- chrysene
- dieldrin
- hexachlorobenzene
- mercury
- mirex
- octachlorostyrene
- PCBs (total)
- DDT & metabolites
- dioxin(2,3,7,8-TCDD) ???
- tetrachloroethylene

Category IC (25 Toxics) = to or less than most stringent criteria

- aldrin
- alpha-BHC
- chloroform
- di-n-octyl phthalate
- endosulfan
- endrin
- fluoranthene
- gamma-BHC
- heptachlor
- heptachlor epoxide
- hexachlorobutadiene
- lead
- methoxychlor
- pentachlorobenzene
- pentachlorophenol
- pyrene
- tetrachlorobenzene-1,2,3,4
- trichlorobenzene-1,2,3
- trichlorobenzene-1,2,4
- trichlorobenzene-1,3,5
- trichlorophenol-2,4,6
- cadmium
- carbon tetrachloride
- chromium
- bis(2-ethylhexyl) phthalate

Category ID (1 Toxic) DETECTION LEVEL TOO HIGH

- toxaphene

Category IE (1 Toxic) NO CRITERIA

- photomirex

Categories 2A and 2B (50 Toxics) data not available

- acenaphthene
- acenaphthylene
- acrolein
- anthracene
- asbestos
- benzidine
- benzo(g,h,i)perylene
- bis(2-chloroethyl)ether
- (bromophenyl) phenyl ether-4
- butylbenzyl phthalate
- chloroethylene
- (chlorophenyl) phenyl ether-4
- dibenz(a,h)anthracene
- dichlorobenzidine-3,3
- dichloroethane-1,2
- dichlorophenol-2,4
- dinitrophenol-2,4
- diphenylamine
- diphenylhydrazine-1,2
- di-n-butyl phthalate
- 2,4 dichlorophenoxy acetic acid
- endrin aldehyde
- fluorene
- heptachlorodibenzofuran
- heptachlorodibenzo-p-dioxin
- hexachloroethane
- indenopyrene
- methylnaphthalene-1
- methylnaphthalene-2
- monochloronaphthalene
- naphthalene
- n-nitrosodimethylamine
- n-nitrosodiphenylamine
- n-nitrosodipropylamine
- octachlorodibenzofuran
- octachlorodibenzo-p-dioxin
- pentachlorodibenzofuran
- pentachlorodibenzo-p-dioxin
- phenanthrene
- tetrachlorobenzene-1,2,3,5

- tetrachlorobenzene-1,2,4,5
- tetrachlorodibenzofuran
- tetrachlorodibenzo-p-dioxin
- tetrachlorophenol-2,3,4,5
- tetraethyllead
- trichloroethylene
- trichlorotoluene-2,4,5
- hexachlorocyclopentadiene
- hexachlorodibenzofuran
- hexachlorodibenzo-p-dioxin

TABLE III

NRTMP PRIORITY TOXICS

	N.R. WATER EXCEEDANCES[1]	L.O. FISH EXCEEDANCES[2]	SIGNIFICANT NR SOURCES[3]
o benz(a)anthracene	X		X
o benzo(a)pyrene	X		X
o benzo(b)fluoranthene	X		X
o benzo(k)fluoranthene	X		X
o chlordane		X	
o chrysene	X		
o dieldrin		X	
o hexachlorobenzene		X	X
o mercury		X	X
o mirex		X	X
o octachlorostyrene		X	
o PCBs (total)	X	X	X
o DDT & metabolites		X	
o dioxin (2,3,7,8-TCDD)		X	X
o tetrachloroethylene	X		X

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1 These seven chemicals were identified from a master list of persistent toxic chemicals as exceeding water quality standards, criteria or guidelines at Niagara-on-the-Lake.

2 These nine chemicals were identified from a master list of persistent toxic chemicals as exceeding fish tissue standards, criteria or guidelines in Lake Ontario.

3 These ten chemicals were identified as having significant Niagara River sources, based on a significant positive differential load (i.e., a positive differential load $\geq$ 25% of the total load as measured at Niagara-on-the-Lake), or based on the existence of known current Niagara River sources.

TABLE IV.
NRTMP REPOSITORIES

United States

U.S.EPA
Public Information Office
Carborundum Center
345 Third Street, Suite 530
Niagara Falls, New York 14303
(716) 285-8842

NYS Department of
Environmental Conservation
600 Delaware Avenue
Buffalo, New York 14202
(716) 847-4590

Atlantic States
Legal Foundation, Inc.
658 West Onondaga St.
Syracuse, New York 13204
(315) 475-1170

Canada

City of Niagara Falls
Planning & Development Dept
Attn: Gretchen de Boer
4310 Queen Street
Niagara Falls, Ontario
L2E 6X5
(416) 356-7521

Niagara River Coordinator
Environment Canada
25 St. Clair Avenue East
Toronto, Ontario
M4T 1M2
(416) 973-1107

Niagara River Improvement
Project
Ontario Ministry of the
Environment
119 King Street East
12th Floor
Hamilton, Ontario L8N 3Z9
(416) 521-7720

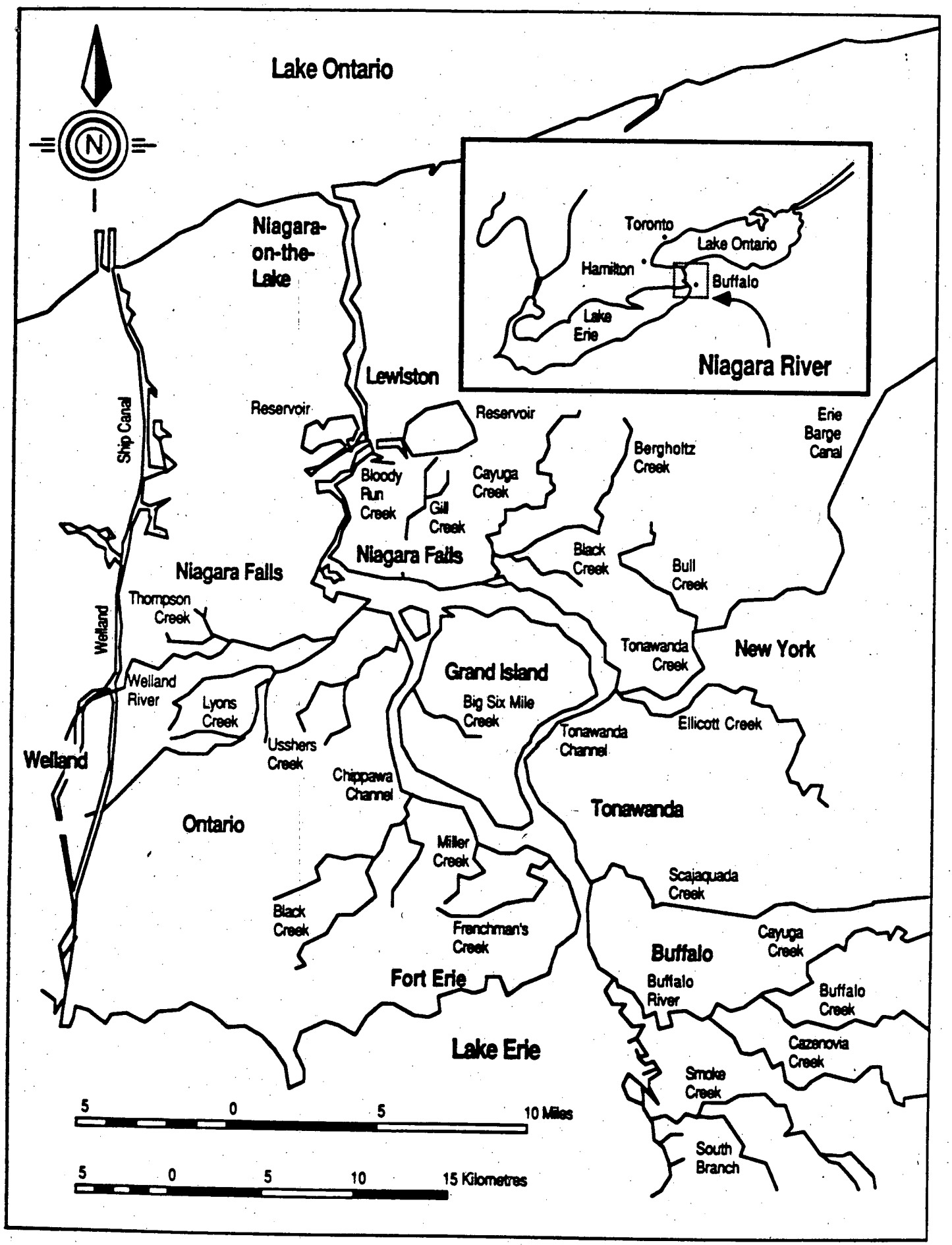
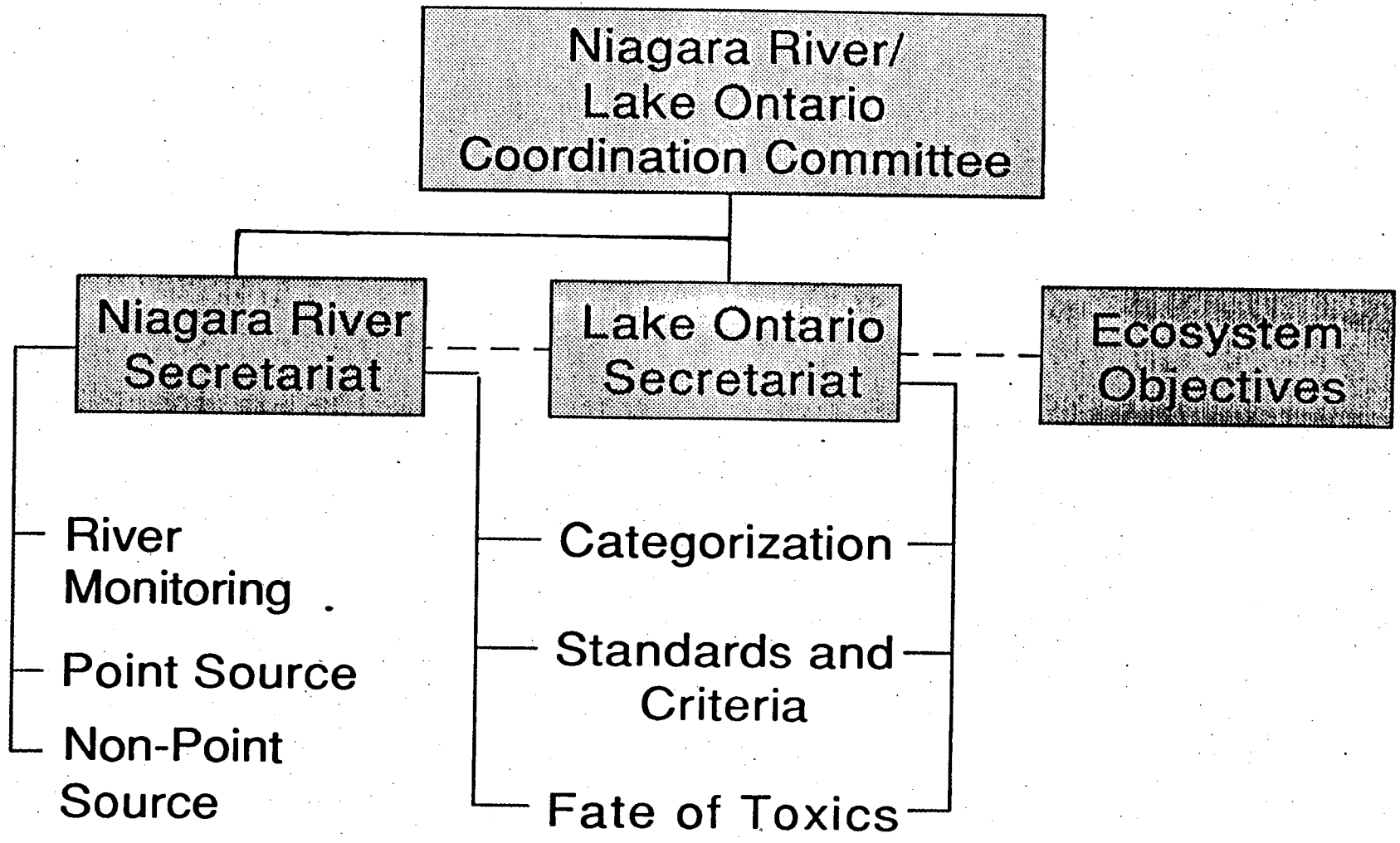


Figure I. Map of Niagara River Area

Figure II.

MANAGEMENT STRUCTURE



DECLARATION OF INTENT

SIGNED FEBRUARY 4, 1987

INTRODUCTION

The problems of toxic chemical pollution in the Niagara River have been well documented. Major investigations have identified existing and potential sources of toxic pollution along the River, as has work undertaken by the Parties to this Declaration, the International Joint Commission and, more recently, through the Niagara River Toxics Committee (NRTC) report of October 1984.

Numerous studies and investigations undertaken over the years have contributed significantly to the understanding of the complex problems in the river. They have also led to the implementation by the jurisdictions of a wide range of control programs and other measures to reduce the burden of toxic chemicals in the River.

The United States Environmental Protection Agency (EPA), Environment Canada (DOE), the New York State Department of Environmental Conservation (NYSDEC) and the Ontario Ministry of the Environment (MOE) - herein referred to as the Parties - have each identified their respective various programs and activities underway or planned on the Niagara in their responses to the recommendations of the Niagara River Toxics Committee. The Parties continue to undertake activities leading to the reductions of toxic chemical pollutants in both countries in accordance with existing laws and regulations which continue to evolve and which may not be similar in approach.

Under Article II of the Great Lakes Water Quality Agreement of 1978, the governments of Canada and the United States agreed to make a maximum effort to develop programs, practices and technology necessary to eliminate or reduce, to the maximum extent practicable, the discharge of pollutants into the Great Lakes System. This Article also states the policy of the Parties that the discharge of toxic substances in toxic amounts be prohibited and that the discharge of any or all persistent toxic substances be virtually eliminated.

While there are other sources of contamination, the Niagara River is a major contributor of toxic chemical pollutants to Lake Ontario. Public concern over toxics problems in the international waters of the Niagara River and Lake Ontario calls for the unified and collective efforts and will of the four Parties to protect and improve the quality of this valuable resource. Complementary actions carried out in both countries to address these problems include:

- Remedial Action Plans for Areas of Concern identified by the International Joint Commission (IJC);
- United States and Canadian Great Lakes Five Year Strategies;
- Canada-Ontario Agreement on Great Lakes Water Quality;
- Ongoing environmental programs in each jurisdiction.

PURPOSE

The purpose of this Declaration is to ensure that a management strategy is adopted which enables the Parties to move in a directed and coordinated manner toward the objective of achieving significant reductions of toxic chemical pollutants in the Niagara River in accordance with timetables and specific activities. The Parties commit themselves to using the authority provided by their domestic laws and regulations to this end. This is consistent with the goal of virtual elimination of toxic discharges, as agreed upon in 1978 by the Governments of the United States and Canada under the Great Lakes Water Quality Agreement.

In October 1986, the Parties released the first edition of a four-party Work Plan which establishes timetables and a set of specific activities to be undertaken. This Declaration in conjunction with that document, together form The U.S. - Canada Niagara River Toxics Management Plan, hereinafter referred to as the The Plan. (See Appendix 1).

THE PARTIES DECLARE THEIR INTENT TO:

Adopt and implement The Plan as a dynamic and evolving framework within which the United States and Canadian agencies will cooperatively take appropriate steps leading to a significant reduction in toxic chemical pollutants from point and non-point sources to the Niagara River, in a manner consistent with federal, state and provincial laws.

In so doing, and in order to achieve the goals of The Plan as stated in this Declaration of Intent, the Parties will:

1. Jointly establish a common basis for identifying, assessing and quantifying toxic chemical loadings into the Niagara River;

   Individually identify and establish priorities for control measures to reduce loadings;

   Individually implement chemical pollutant control activities in the Niagara River;

   Individually and jointly monitor and evaluate the success of control activities.

2. Take into account applicable water quality and drinking water standards and set as a target a reduction level of 50% for

persistent toxic chemicals of concern* from point sources in Ontario and New York by the year 1996. This achievement will depend on the progressive evolution of technologies, permits, standards, laws, and regulations in both countries.

3. Report by July 1987 and each year thereafter on progress made in identifying and quantifying loadings of toxic chemical pollutants originating from non-point sources in Ontario and New York. To this end, the Parties will work towards achieving a reduction of at least 50% of persistent toxic chemicals of concern* by the year 1996 taking into account siting issues, technology available, laws and regulations.

4. Establish an improved system of monitoring to ensure the effectiveness of all monitoring programs and schedules.

5. Enforce laws and regulations to ensure the maximum reductions in loadings. In general, point source control measures will be based upon the application of existing best available technology and the results of scientific evidence of environmental degradation. The Plan will be updated to reflect developments in these areas.

6. Use The Plan as a means of alerting the jurisdictions to those chemicals for which reductions are not occurring, so that appropriate corrective actions can be taken.

7. Review and update The Plan on an annual basis. As part of the review a progress report will be published and public input sought. The report will include an implementation schedule proposed for the coming year, the results of monitoring, a list of actions undertaken with respect to point and non-point sources, updated information on chemicals of concern, and scientific evaluations of new and developing technologies relevant to the program.

8. In 1988 and annually thereafter, review and report in depth (based to the maximum extent possible on existing Parties' reporting requirements) on the state of new and emerging technologies applicable to hazardous waste landfill site remediation with particular emphasis on such techniques as the excavation, removal, and on-site destruction of contaminated material.

Bradley's clause

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* A mutually agreed upon list of persistent toxic chemicals of concern will be developed from:

i) NRTC Group I and II lists of chemicals of concern;

ii) IJC Water Quality Board's 1985 list of "Critical Pollutants";

iii) Results of point and non-point source monitoring activities underway.

9. Submit The Plan and progress reports to the International Joint Commission as part of the Commission's Remedial Action Plan program for the Great Lakes.

10. Adopt the following goals for each component of The Plan:

a) River Monitoring

- determine the toxic chemical loadings to the Niagara River from Lake Erie (input);

- determine toxic chemical loadings from the Niagara River to Lake Ontario (output);

- determine toxic chemical loadings from sources along the Niagara River by comparing the difference between the output from the river and input from the river from upstream sources (input-output differential river monitoring identified by the NRTC);

Attempts will be made to determine the loadings with sufficient confidence to measure the effectiveness of the control programs.

b) Point Sources

- determine toxic chemical loadings from industrial and municipal facilities;

- estimate allowable toxic chemical loadings from industrial and municipal sources as provided in regulatory specifications;

- estimate reduction of toxic chemical loadings as a result of implemented control measures and scheduled reductions based on planned control measures;

- implement remedial and control programs so as to achieve the maximum possible reduction of toxic chemical loadings to the Niagara River;

c) Non-Point Sources

- estimate toxic chemcial loadings from tributaries and leaking hazardous waste disposal sites;

- estimate reductions in toxic chemical loadings as a result of implemented control measures, and scheduled reductions based on planned control measures;

- implement remedial and control programs so as to achieve the maximum possible reduction of toxic chemical loadings to the Niagara River. In addition, on all sites, excavation, removal and destruction of contaminated material will be considered as a means of eliminating contaminants to the river.

d) Chemicals of Concern

- identify and maintain a list of chemicals of concern (as determined by the NRTC, with further monitoring, research and priorities established by the IJC Water Quality Board) within the Niagara River ecosystem and promote the establishment of uniform environmental and human health criteria for those chemicals.

e) Technical and Scientific Cooperation

- carry out research, technical and scientific programs to assist the four jurisdictions in addressing the problems of the Niagara Frontier.

f) Communication Plan

- present information and scientific reports to the public, and seek their input to The Plan.

g) Organization and Implementation

- establish and maintain a management structure to ensure that the implementation of The Plan is effectively monitored.

h) Reporting

- update The Plan annually and issue status reports at the beginning of each calendar year.

11. Initiate activity on a Lake Ontario Toxic Management Plan which will be similar in content and scope to the Niagara River Toxics Management Plan and compatible with IJC activities. The Lake Ontario document will be completed by January 1, 1988.

Executed this 4th day of February, 1987

For the United States
Environmental Protection Agency

Mr. Lee Thomas
Administrator

For Environment Canada

The Honourable Tom McMillan
Minister

For the New York State Department
of Environmental Conservation

Mr. Henry G. Williams
Commissioner

For the Ontario Ministry of the
Environment

The Honourable Jim Bradley
Minister

Appendix II.

Accomplishments to Date

February 1987 - September 1988

TABLE 1

RIVER MONITORING

FEB 1987 - SEPT 1988

GOAL		ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I. Determine toxic chemical loadings from sources along the Niagara River by comparing the difference between the output from the river and the input to the river from upstream sources (input-output differential river monitoring identified by the NRTC).	1.	Prepare the list of analytical parameters which will be investigated.	All Jurisdictions (RMC)	November 1986 COMPLETED	Completed. November 1986 "Niagara River Sampling Protocol."
	2.	Validate the monitoring methodology to be used.	All Jurisdictions (RMC)	Within 6 months of implementation of new methodologies	Brought forward as Activity R-207.
	3.	Establish procedures for revising and updating methodologies.	All Jurisdictions (RMC)	January 1987 COMPLETED	Sampling protocols document completed Feb.1987. Procedures for analytical protocols included in Analytic Protocol Document (Completed Dec.'87)
	4.	Develop sampling program design (frequency of sampling and number of samples required).	All Jurisdictions (RMC)	November 1986 COMPLETED	Completed November 1986. "Sample Size Requirements."
	5.	Develop written sampling, analytical and quality control procedures for Ft. Erie and Niagara-on-the-Lake stations (Operations Manual).	All Jurisdictions (RMC)	October 1987 COMPLETED	Sampling protocol document completed in Oct. 1986. Updated in June 1988. Analytic Protocol document completed in December 1987.

TABLE 1

RIVER MONITORING

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I. Continued	6. Agree on interpretation of the existing data (12/84-3/86) at Ft. Erie and Niagara-on-the-Lake stations.	All Jurisdictions (RMC)	November 1986	Completed November 1986. "Upstream/Downstream Niagara River Monitoring Data. 1984-1986." COMPLETED
	7. Provide scientific advice to the Coordination Committee on the development of criteria by which the results of the long-term monitoring program will be evaluated so that the effectiveness of ongoing corrective actions can be determined. Propose modifications to the list of analytical parameters as needed.	All Jurisdictions (RMC)	Continuous	Advice provided as appropriate based on results of project review/evaluation and results of data interpretation. Incorporated into Activities R-101 and R-200.
	8. Determine what additional monitoring activities (ongoing or future) should become part of the four jurisdiction data base.	All Jurisdictions (RMC)	Continuous	Initial efforts focused on the development, implementation, and optimization of the basic Ambient Water Quality Monitoring Program. Incorporated in Activity R-205.

TABLE 1

RIVER MONITORING

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I. Continued	9. Develop a procedure for data management and exchange.	All Jurisdictions (RMC)	May 1988 COMPLETED	Completed April 1988.
	10. Exchange data according to developed procedures.	All Jurisdictions	Continuous	Brought forward as Activity R-208.
	11. Report on interpretation of river monitoring data (3/86-3/87).	All Jurisdictions (RMC)	January 1988 COMPLETED	Completed in Jan. 1988. "Upstream/Downstream Niagara River Monitoring Data 1986-1987."

TABLE 2

POINT SOURCES

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I. Determine toxic chemical loadings from industrial and municipal facilities.	1. Continue collection of self monitoring data.	NYSDEC MOE	Continuous	DEC data is collected under SPDES program. MOE data in Industrial Monitoring Information System(IMIS) annual report. Incorporated in Activity P-300.
	2. Continue expanded compliance monitoring program in accordance with NRTC recommendations. (Includes initial direct monitoring of 10 major point sources compatible with river monitoring.)	MOE NYSDEC USEPA	COMPLETED	DEC has completed the '85-'86 expanded compliance monitoring program. MOE's program is Niagara Monitoring Information System(NIAMIS); outlined in the PSMC's report for Activity #3.
	3. Review current and proposed point source monitoring program, compare them to NRTC recommendations and identify other areas that should be addressed for the purpose of defining an appropriate point source monitoring program.	All Jurisdictions (PSMC)	September '87 COMPLETED	Final completed Oct. '87. "Comparison of Present & Future Four Party Point Source Programs and comparison to the Niagara River Toxics Recommendations."

POINT SOURCES

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I. Continued.	4. Determine toxic chemical loadings.	MOE NYSDEC	August 1987 COMPLETED	Reports on toxic chemical loadings were released by MOE and NYSDEC in September 1987. See Activities #7 and #8.
	5. Develop a procedure for data management and exchange.	All Jurisdictions (PSMC)	September 1987 COMPLETED	Final October '87: "Point Source Monitoring Committee, Four Party Agreement for Information Exchange."
	6. Exchange data according to developed procedures.	All Jurisdictions (Secretariat)	Continuous	Brought forward as Activity P-200.

TABLE 2

POINT SOURCES

FEB 1987 - SEPT 1988

GOAL		ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I. Continued.	7.	Report on Point Source Monitoring Data 4/85-3/86 and determine toxic chemical loadings.	MOE NYSDEC	August 1987 COMPLETED	MOE Point Source report and NYSDEC Point Source report were released September 1987.
	8.	Report on Point Source Monitoring Data 4/86-3/87 and determine toxic chemical loadings.	MOE NYSDEC	March 1988 COMPLETED	MOE Activity completed Sept.'87 and included in report for Activity #7. NYSDEC report to be available October 1988.
	9.	Continue agencies compliance monitoring programs.	MOE NYSDEC USEPA	Continuous	Incorporated in Activity P-300.
II. Estimate allowable toxic chemical loadings from industrial and municipal sources as provided in regulatory specifications.	1.	Calculate the toxic chemical loading from 10 major point sources based upon regulatory specifications and compare with measured loadings.	USEPA NYSDEC	October 1987 COMPLETED	Comparison of NYSDEC regulatory specifications completed. Comparison to permit loadings contained in Appendix C of NYSDEC's Report on Point Source Monitoring Data. Activity final October 1987.
			MOE	November 1986 COMPLETED	Report completed 11/86. "Update, Toxic Chemical Loadings From Atlas Specialty Steels."

TABLE 2

POINT SOURCES

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
III. Estimate reduction in toxic chemical loadings as a result of implemented control measures and scheduled reductions based on planned control measures.	1. Develop schedules for implementation of control programs.	NYSDEC USEPA	March 1987	Control programs in U.S are in NYSDEC permits.
		MOE	COMPLETED	All MOE control Orders have been met. Detailed surveys have been initiated at all industries and municipal wastewater treatment plants to determine whether or not further control programs are required. Incorporated in Activity P-300.
	2. Identify reductions in toxic chemical loadings to the Niagara River based on controls introduced since the NRTC report.	USEPA NYSDEC	October 1987	Comparison of Pt. Source data with NRTC report in Tables IV & 3.8 and Appendix D of the NYSDEC Point Source Report issued in September 1987
			COMPLETED	
		MOE	August 1987	Reductions in toxics covered in MOE's Point Source Report issued Sept. 1987. MISA program introduced scheduled controls on point source discharges (MISA document June 1986).
			COMPLETED	

TABLE 2

POINT SOURCES

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
	3. Forecast reductions in toxic chemical loadings in Niagara River.	All Jurisdictions (Secretariat)	July 1987 COMPLETED	The Accord signed Feb.4 1987 established the goal of 50% reduction of persistent toxic chemicals of concern in the Niagara River by 1996. More specific forecasts will be developed through future Plan Activity P-101.
IV. Implement remedial and control programs so as to achieve the maximum possible reduction of toxic chemical loadings to the Niagara River.	1. Take enforcement actions when required.	MOE NYSDEC USEPA	Continuous	Incorporated in Activity P-300.
	2. Monitor court-ordered remedial schedule for Niagara Falls WWTP.	USEPA NYSDEC	Continuous	Incorporated in Activity P-300.
	3. Develop methods for mirex and heptachlor analysis in wastewater (lower detection limits)	NYSDEC USEPA	November 1986 COMPLETED	The permittee has agreed to use a detection limit sufficiently low to meet required permit limits for these chemicals. Therefore, new methods are not needed. Completed November 1986.
	4. Evaluate and reissue draft second round of permits.	NYSDEC USEPA	December 1986 COMPLETED	All 2nd round permits issued except NFNY WWTP. Permits available for inspection at NYSDEC Region 9 office.
	5. Implement and enforce pre-treatment programs at POTW's.	NYSDEC USEPA	Continuous	Incorporated in Activity P-300

TABLE 2

POINT SOURCES

FEB 1987 - SEPT 1988

GOAL		ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
IV. Continued	6.	Provide technical assistance to municipalities for enforcement in the Pretreatment Program.	USEPA NYSDEC	Continuous	Incorporated in Activity P-300.
	7.	Promote waste reduction, pretreatment and good housekeeping.	MOE	Continuous	Ministry has provided financial support to a "Household Special Waste Day" in Niagara Falls, Ontario. Brought forward as Activity P-301.
	8.	Institute pre-regulation phases of Municipal- Industrial Strategy for Abatement (MISA).	MOE	November 1986 COMPLETED	Work initiated by November 1986.
	9.	Establish first Industrial Regulation under MISA.	MOE	January 1988	Interim Status reported in "MISA Update"(Vol I, #2 Feb'88). Activity modified in revised Plan to reflect Niagara interest Organic chemical sector monitoring regulations to be promulgated December 1988. Incorporated in Activity P-300.

TABLE 3

NON-POINT SOURCES

FEB 1987 - SEPT 1988

	GOAL		ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I.	Estimate toxic chemical loadings from non-point sources.	1.	Attempt to use river monitoring data in conjuction with point source data to estimate the magnitude of the non-point source loading to the Niagara River.	All Jurisdictions (Secretariat)	November 1987 COMPLETED	See Table 9.
		2.	Develop areawide groundwater hydrogeology model for Niagara Falls, N.Y.	USEPA	1st Report July 1987 COMPLETED	Phase I complete. Status Reports prepared March 1987 and July 1987. Phase II underway. Continuing work brought forward as Activity N-103.
		3.	Conduct areawide Water Resources evaluation of eastern part of Niagara Peninsula.	MOE	October 1987 COMPLETED	Project completed. "Water Resources of the Niagara Frontier and the Welland River Drainage Basin." Will be available for distribution after printing.
		4.	Develop a procedure for data management and exchange.	All Jurisdictions (NPSMC)	September 1987 COMPLETED	Completed October, 1988

TABLE 3

NON-POINT SOURCES

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I. Continued.	5. Exchange data according to developed procedures.	All Jurisdictions (NPSMC)	Continuous	Brought forward as Activity N-201.
II. Estimate reduction in toxic chemical loadings as a result of implemented control measures and scheduled reductions based on planned control measures.	1. Identify reductions, (for hazardous waste sites) if possible, in toxic chemical loadings to the Niagara River based on control programs introduced since the NRTC report.	USEPA MOE	Continuous	EPA Niagara River Action Report-Aug 1987 update; "Potential Contaminant Loadings to the Niagara River from U.S. Hazardous Waste Sites" March 1988. MOE: Clam and sediment monitoring was carried out in summer of 1987. Tributary monitoring is underway. Tributary loading report projected for completion December 1988 Brought forward as Activities N-301 and N-302

TABLE 3

NON-POINT SOURCES

FEB 1987 - SEPT 1988

GOAL		ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
II.-Continued. -	2.	Develop schedules for implementation of control measures.	USEPA NYSDEC MOE	August 1987 COMPLETED	EPA/DEC: Schedules have been included in the1987 Niagara River Action Plan updated by EPA in conjunction with NYSDEC This report was released & available August 1987. MOE: Additional nonpoint source data collected in the summer of 1987 to address this activity. Report due December 1989 Brought forward as Activities N-100 and N-102.
	3.	Identify baseline nonpoint source loadings to the Niagara River in accordance with the Declaration of Intent.	All Jurisdictions (Secretariat)	COMPLETED	Initial estimate prepared based on river monitoring and point source data. See Table 9.
III. Implement remedial and control programs so as to achieve the maximum possible reduction of toxic chemical loadings to the Niagara River.	1.	Continue investigations and evaluate proposed remedial activities at landfill sites and monitor follow up actions as required for the five Ontario sites identified by the NRTC.	MOE	Continuous	Reports of all 5 sites have been prepared. Further required study at Cyanamid Niagara Falls, with company doing investigation at present time. Brought forward as Activity N-100.

TABLE 3

NON-POINT SOURCES

FEB 1987 - SEPT 1988

GOAL		ACTIVITY	RESPONSIBLE PARTY	COMPLETION PROJECTED DATE	OUTPUT/STATUS
III. Continued.	2.	Investigate, study and remediate the 61 sites identified by the NRTC in New York.	USEPA NYSDEC	Continuous	Current status of sites included in Niagara River Action Plan. Brought forward as Activity N-100.
	3.	Complete initial investigation on 46 sites outside 3 mile band along river.	NYSDEC	December 1987 COMPLETED	Findings included in "Final Report: NYSDEC Niagara River Implementation Plan." Completed January 1988.
	4.	Complete NYS Hazard Ranking Scheme.	NYSDEC	December 1987	Report expected in January 1989. Brought forward as Activity N-300.
	5.	Evaluate sediment contamination transport in the Buffalo River.	NYSDEC	October 1986	A modeling study has been partially completed to assess contaminant transfer by sediments. The project is postponed until appropriate methodology becomes available. Will be incorporated in Activity N-102.
	6.	Report on sediment survey of the Adam Beck Hydro Reservoir and provide data on upper Niagara tributary monitoring.	MOE	November 1986 COMPLETED	Completed."Contaminant concentrations in bottom sediments of the Adam Beck Reservoir and Niagara River Bar Dredgeate" (April 1987)."1983 Niagara River Tributary Survey by C.J. Hart." (June 25, 1986)

TABLE 3

NON-POINT SOURCES

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
III. Continued.	7. Bring active hazardous waste facilities under RCRA permit requirements.	USEPA NYSDEC	Draft Permit schedules: Incineration- October 1987 Storage and Treatment- December 1992	Draft permit schedule for Land Disposal - December 1987. Brought forward as Activity N-300.
	8. Continue enforcement activities.	USEPA NYSDEC MOE	Continuous	Brought forward as Activity N-300.
	9. Investigate stormwater runoff at selected industrial sites.	USEPA	December 1987 COMPLETED	Completed. "Buffalo River Stormwater Sampling Program Report" February 1988.

TABLE 4

CHEMICALS OF CONCERN

FEB 1987 - SEPT 1988

GOAL	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT / STATUS
I. Identify and maintain a list of chemicals of concern (as determined by the NRTC with further monitoring, research and priorities established by Board) within the Niagara River ecosystem and promote the establishment of uniform environmental and human health criteria for these chemicals.	1. Develop New York State criteria for aquatic biota to protect fish-eating birds and animals.	NYSDEC	October 1986 COMPLETED	Report released 10/87. Title: "Niagara River Biota Contamination Project: Flesh Criteria for Protection of Piscivorous Wildlife."
	2. Prepare a status report on criteria development and use by the four agencies.	All Jurisdictions (Secretariat)	1st Report July 1987 2nd Report January 1988 COMPLETED	Compilation of MOE and NYSDEC water quality criteria regulatory guidelines final October 1987. Status report issued January 1988.
	3. Develop a mutually agreed upon list of persistent chemicals.	All Jurisdictions (RMC & PSMC)	August 1987 COMPLETED	Master list of persistent toxic chemicals in the Niagara River was accepted by the Coord. Committee November 4, 1987. This list will be used for selecting chemicals subject to 50% reduction.
	4. Identify persistent toxic chemicals of concern subject to the 50% reduction required in the Declaration of Intent.	All Jurisdictions (Secretariat)	March 1988 COMPLETED	Completed. Initial list selected.

TABLE 5

TECHNICAL AND SCIENTIFIC COOPERATION

FEB 1987 - SEPT 1988

GOAL		ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	OUTPUT/STATUS
I. Carry out research, technical and scientific programs to assist the four jurisdictions in addressing problems of the Niagara Frontier.	1.	Review all research activity among the jurisdictions that may apply to the Niagara Frontier.	All Jurisdictions (Secretariat)	October 1987	Compilation of jurisdictional research activities in Niagara Frontier complete. Summary available 1/88. COMPLETED
	2.	Develop bioaccumulation factors for Niagara River toxics in biota.	USEPA NYSDEC	November 1988	Press release on preliminary data issued June 1987. Brought forward as Activity C-104.
	3.	International Symposium on Toxics in the Niagara: A Shared Challenge.	All Jurisdictions (Secretariat)	August 1987	Symposium held Feb. 3-6, 1987. Summary Report circulated to interested parties in August 1987. COMPLETED
	4.	Point Source Monitoring Technical Workshop	All Jurisdictions (Secretariat)	January 1988	Workshop incorporated into Sept 12-14, 1988 Point Source Workshop at the Canada Centre for Inland Waters at Burlington, Ontario. COMPLETED
	5.	Hydrogeology Technical Workshop	All Jurisdictions (Secretariat)	May 1988	Held in Niagara Falls, N.Y. - May 26,1988. COMPLETED
	6.	Zero Discharge Seminar	All Jurisdictions (Secretariat)	September 1987	Held in Buffalo, N.Y. September 15-17, 1987. COMPLETED

Appendix III.

Accomplishments to Date

Period Ending April 1990

RIVER MONITORING

OCTOBER 1988 - SEPTEMBER 1989

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
Objective 1: Reduce the inputs of identified priority toxics.				
R-101	Prepare report on adding octachlorostyrene to the Upstream/Downstream river monitoring program.	All Agencies (RMC)	March 1989 COMPLETED	Sampling of octachlorostyrene began April 1989. Data will be reported in 1991.
R-102	Prepare an annual report documenting progress toward attainment of the goal of 50% reduction of problem toxics using ambient and source data.	All Agencies (NRS)	June 1989	"Framework for 50% Reduction Progress Report" (Bibliography #15) details how to prepare annual report; first report will be prepared by December 1990. Brought forward as Activity III-140.

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
Objective 2: Determine if there are additional toxics which warrant priority attention.				
R-200	Report on the feasibility of modifying the chemicals sampled and analyzed in the river monitoring program (In response to the recommendations of the Toxics Categorization Committee).	All Agencies (RMC)	September 1989 COMPLETED	Thirty-one additional chemicals are now being sampled & analyzed. Further additions/deletions will be considered based on recommendations of the Toxics Categorization Committee, and on the results of the EPA-funded screening analysis of selected chemicals in the Niagara River. Follow-up included in Activity III-500.
R-201	Review DOE report on the representativeness of the Niagara-on-the-Lake station; prepare a workplan to examine the representativeness of the Ft.Erie monitoring station.	All Agencies (RMC)	September 1989 COMPLETED	Report on the Niagara-on-the-Lake station reviewed and accepted. (Bibliography #11) Ft. Erie station representativeness study workplan was received and endorsed by RMC. Sampling at the Buffalo water intake at Lake Erie will begin in April 1990. Follow-up included in Activity III-200.
R-202	Conduct initial field and laboratory audits, using established protocols, and prepare reports on recommended changes or improvements.	All Agencies (RMC)	March 1989 COMPLETED	Audits completed and reports accepted by RMC with recommendation that changes suggested by the audit teams be incorporated in revised protocols (Bibliography #5).

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
R-203	Report on feasibility of lowering detection limits of category 1D chemicals (Detection limit too high to allow complete categorization).	All Agencies	September 1989	Draft Categorization report (per Activity C-200) identifies one such chemical: chloroform. Pending final review of the report, the feasibility of a lower detection limit for chloroform will be evaluated. Follow-up included in Activity III-300.
R-204	Assess the feasibility of estimating "recombined whole water" concentrations and loadings with confidence limits; if feasible, prepare using 1987-88 data, and incorporate the analyses in next Upstream/Downstream report.	All Agencies (RMC)	March 1989 COMPLETED	Reported in '87-'88 Upstream/Downstream report. (Bibliography #6)
R-205	Report on the need for, and feasibility of, including a biomonitoring component in the river monitoring program.	All Agencies (RMC)	September 1989 COMPLETED	RMC recommendation provided in June, 1989 letter (Bibliography #8); recommendation is for agencies to continue existing biomonitoring programs and to report periodically to the Coordination Committee on their findings. RMC recommendation to be reviewed by NRS. Follow-up included in Activity III-600.

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
R-206	Recommend how best to present statistically valid year to year comparisons of Niagara River loadings data using ambient and source data.	All Agencies (RMC)	June 1989 COMPLETED	See "Framework for 50% Reduction Progress Report" (Bibliography #15).
R-207	Validate new monitoring methodologies.	All Agencies (RMC)	Within 6 months of implement-ation.	Ongoing. Follow-up included in Activity III-500.
R-208	Exchange data according to developed procedures.	All Agencies (RMC)	Continuous	Ongoing. Follow-up included in Activity III-100.
R-209	Prepare 1987-88 Upstream/Downstream report.	All Agencies (RMC)	March 1989 COMPLETED	"Joint Evaluation of Upstream/Downstream Niagara River Monitoring Data for the period April 1987 to March 1988" prepared by the Niagara River Data Interpretation Group, Niagara River Monitoring Committee (Bibliography #6). Follow-up included in Activity III-100.

POINT SOURCES

COTOBER 1988- SEPTEMBER 1989

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
Objective 1: Reduce the inputs of identified priority toxics.				
P-100	Prepare U.S. and Canadian reports which identify significant sources of priority toxics and provide specific abatement schedules, or identify technical, legal or regulatory impediments.	USEPA NYSDEC MOE	March 1989 COMPLETED	A final MOE Point Source Report (Bibliography #10) and an interim DEC/EPA point source report (Bibliography #9) have been completed. These reports were referred to the Point Source Committee for a consistency review. A final DEC/EPA report will be completed by August 1990. Follow-up included in Activities II-100 and II-110.
P-101	Prepare U.S. and Canadian reports recommending how to refine point-source estimates of priority toxics.	USEPA NYSDEC MOE	March 1989	Preliminary recommendations are provided in EPA/DEC, MOE, and DEC reports. (Bibliography #9,10,12) These recommendations have been referred to the Point Source Committee for a consistency review. Follow-up included in Activity III-110.

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
Objective 2: Determine if there are additional toxics which warrant priority attention.				
P-200	Exchange point source data according to developed procedures.	All Agencies (PSC)	Ongoing	Follow-up included in Activity III-110
Objective 3: Implement existing and developing programs for the control of all toxics.				
P-300	Prepare U.S. and Canadian Point Source Program Status Reports.	USEPA NYSDEC MOE	June 1989	Canadian report completed (Bibliography #17); U.S. report to be completed as part of Activity II-100. Follow-up included in Activities II-100 and II-110.
P-301	Prepare report on how best to incorporate source reduction in the NRTMP. (This report will cover both point and non-point sources. See Activity N-303)	All Agencies (NRS)	September 1989	Proposal currently being developed by NRS. Follow-up included in Activity II-500.
P-302	Prepare U.S. and Canadian reports summarizing progress in reducing the point source loadings of the full range of toxics monitored in municipal and industrial treatment plant effluents.	USEPA NYSDEC MOE	COMPLETED September 1989	Canadian report completed (Bibliography #17). U.S. report completed. (Bibliography #12) Follow-up included in Activities II-100 and II-110.

NON-POINT SOURCES

OCTOBER 1988 - SEPTEMBER 1989

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
Objective 1: Reduce the inputs of identified priority toxics.				
N-100	Prepare U.S. and Canadian reports which identify the waste sites with the greatest potential for contributing priority toxics to the River, and provide specific remediation schedules.	USEPA/ NYSDE MOE/DOE	COMPLETED June 1989 December 1989	U.S. report completed, November 1989 (Bibliography #16). Canadian report expected May 1990. Follow-up included in Activities II-200 and II-210.
N-102	Develop schedules for the implementation of other non-point source control programs for priority toxics.	USEPA NYSDEC MOE DOE		As independent source-by-source estimates of non-point loadings become available. (See Activity N-301.) Follow-up included in Activities II-300 and II-310.
N-103	Develop areawide groundwater hydrogeology model for Niagara Falls, NY.	USEPA	September 1991	On schedule. Brought forward as Activity III-700.
Objective 2: Determine if there are additional toxics which warrant priority attention.				
N-201	Exchange non-point source data according to developed procedures.	All Agencies (NPSC)	Ongoing	Follow-up included in Activity III-120.

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
Objective 3: Implement existing and developing programs for the control of all toxics.				
N-300	Prepare U.S. and Canadian Non-point Source Program Status Reports.	USEPA/ NYSDEC DOE/MOE	COMPLETED February 1990 February 1990	U.S. commitment met through two NYSDEC reports: Non-point Source Assessment Report, February 1989, and Non-point Management Program, November 1989. (Bibliography #3,18) Canadian report will be completed by December 1990. Follow-up included in Activities II-300 and II-310.
N-301	Assess available non-point source data and evaluate the potential for deriving non-point source loading estimates directly.	All Agencies (NPSC)	COMPLETED March 1989	NPSC report completed, October 1989 (Bibliography #13). Follow-up included as Activity III-120.
N-302	Prepare annual reports, based on direct estimates, summarizing progress in reducing non-point source loadings.	USEPA/ NYSDEC DOE/MOE		The "Framework for 50% Reduction Progress Report" explains how the annual reports will be developed. An initial report will be developed by October 1990. Follow-up included in Activity III-120.
N-303	Prepare report on how best to incorporate source reduction in the NRTMP. (This report will cover both point and non-point sources. See Activity P-301)	All Agencies (NRS)	September 1989	Proposal currently being developed by the NRS. Follow-up included in Activity II-500.

CHEMICALS OF CONCERN

OCTOBER 1988- SEPTEMBER 1989

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPELETION DATE	COMMENTION/STATUS
Objective 1: Reduce the inputs of identified priority toxics.				
C-100	Determine the feasibility of preparing Level I mathematical models for the Category IA and IB toxics in the Niagara River.	All Agencies (FTC)	COMPLETED September 1989	Level I modelling has begun; initial results will be available in November 1990. Follow-up included in Activity III-130.
C-101	Review protocol to add chemicals to list of priority toxics for 50% reduction. This includes a reassessment of the appropriateness of using 25% as the percentage of the load required to establish the Niagara River as a primary source of a toxic chemical of concern.	All Agencies (NRS)	COMPLETED June 1989	The "Framework for 50% Reduction Progress Report" (Bibliography #15) addresses this issue.
C-102	Recommend additional chemicals to be added to list of those subject to 50% reduction.	All Agencies (NRS)	Continuous	Follow-up included in Activity I-110.

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
C-103	Develop improved matrices showing the Niagara River differential loadings of priority toxics, and the point and non-point components of those differential loadings.	All Agencies (FTC, RMC,PSC, NPSC)	September 1989	The "Framework for 50% Reduction Progress Report" has been completed; work can now begin on the development of improved matrices. The first set of improved matrices will be available by December 1990. Follow-up included in Activity III-140.
C-104	Develop bioaccumulation factors for Niagara River toxics in biota.	USEPA NYSDEC	November 1988	Data analysis complete. The report: Lake Ontario TCDD Bioaccumulation Study has been peer reviewed. The final report will be issued by June 1990. Follow-up included in Activity III-800.
	Objective 2: Determine if there are additional toxics which warrant priority attention.			
C-200	Categorize all chemicals on the list of 92 persistent toxic chemicals of concern.	All Agencies (CC)	March 1989	Draft report completed. Brought forward as Activity I-100.
C-201	Categorize additional chemicals to the extent that data are available.	All Agencies (CC)	March 1989	Draft report completed. Brought forward as Activity I-100.
C-202	Prepare report recommending additions or modifications to standards and criteria (in response to the recommendations of the Categorization Committee).	All Agencies (SCC)	September 1989	Final report completed. (Bibliography #19) Follow-up included in Activity III-400.

COMPLETED

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
C-203	Prepare a letter alerting the International Joint Commission to the problem of upstream Great Lake sources of priority chemicals and requesting the responsible jurisdictions to take corrective actions.	All Agencies (CC)	December 1988 COMPLETED	Letter dated March 21, 1989 from Coordination Committee to IJC (Bibliography #4). Follow-up included in Activity II-400.
C-204	Review categorization periodically to reflect changes in standards and criteria.	All Agencies (CC)	Continuous	Draft report completed. Follow-up included in Activity I-100.

TECHNICAL AND SCIENTIFIC COOPERATION

OCTOBER 1988- SEPTEMBER 1989

	ACTIVITY	RESPONSIBLE PARTY	RPOJECTED COMPLETEION DATE	COMMENT/STATUS
Objective 3: Implement existing and developing programs for the control of all toxics.				
T-300	Prepare an annual report on new and emerging technologies applicable to hazardous waste landfill site remediation.	All Agencies	November 1988 COMPLETED	EPA/DEC - Superfund Innovative Technology Evaluation Program, February 1988 (Bibliography #1). MOE - Inventory of Innovative Hazardous Waste Treatment Site Remediation and Monitoring Technology Projects in Ontario, January 1989. (Bibliography #2) EC - Hazardous Waste Site Remediation: Innovative Technology Development- Great Lakes Environment Office, April 1989. (Bibliography #7)

REMEDIAL ACTION PLANS

OCTOBER 1988- SEPTEMBER 1989

RAP = Remedial Action Plan

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
Objective 3: Implement existing and developing programs for the control of all toxics.				
A-300	Develop Niagara River (Ontario) Remedial Action Plan (RAP).	MOE DOE		Follow-up included in Activity IV-100.
	- Initiate RAP		December 1988 COMPLETED	
A-301	Develop Niagara River (New York) RAP	NYSDEC		
	- Initiate RAP		November 1989 COMPLETED	Follow-up included in Activity IV-100.
A-302	Establish an international advisory committee	NYSDEC MOE	To be determined COMPLETED	Format for the committee has been established. The two committees will hold their first bi-national committee meeting in March 1990. Follow-up included in Activity IV-100.
A-303	Develop a common statement of environmental problems and goals for the River.	NYSDEC MOE	To be determined	Draft common statement was written in April 1990. Final statement expected by June 1990. Follow-up included in Activity IV-100.

	ACTIVITY	RESPONSIBLE PARTY	PROJECTED COMPLETION DATE	COMMENT/STATUS
A-304	Develop Buffalo River RAP	NYSDEC		
	- Complete draft		COMPLETED March 1989	
	- Final		COMPLETED January 1990	See Bibliography #14. Follow-up included in Activity IV-100.

Appendix IV.

Niagara River Toxics Management Plan

1990 UPDATE

Table of Commitments

NRS=Niagara River Secretariat
LOS=Lake Ontario Secretariat
RMC=River Monitoring Committee
PSC=Point Source Committee
NPSC=Nonpoint Source Committee
CC=Categorization Committee
FTC=Fate of Toxics Committee
SCC=Standards and Criteria Committee

ACTIVITY NUMBER	ACTIVITY/OUTPUT	RESPONSIBLE PARTY	COMPLETION DATE*	COMMENT
	I. Sort Chemicals as a Basis for Action			
I-100	Prepare Categorization of Chemicals Report			
	- Initial comprehensive report	CC	May 1990	
	- Annual update	CC	May 1991	
I-110	Report on adding to 50% reduction list for priority toxics			
	- 1990 report	NRS	Oct 1990	
	- Annual update	NRS	Oct 1991	
	II. Implement Programs to Reduce the Loadings of Toxics Entering the Niagara River			
II-100	Prepare U.S. point source plan			The U.S. point source report will present U.S. point source loadings and the plan to reduce those loadings.
	- Final plan	EPA/DEC	Aug 1990	
	- Status report and plan update	EPA/DEC	Aug 1991	

* All completion dates in the NRTMP 1990 Update are projected dates (last day of the month) for transmittal of final committee or agency reports to the Niagara River Secretariat. These reports will be made available at repositories within two weeks and will be tabled for discussion, as appropriate, at the next scheduled Coordination Committee meeting.

ACTIVITY NUMBER	ACTIVITY/OUTPUT	RESPONSIBLE PARTY	COMPLETION DATE	COMMENT
II-110	Prepare Canadian point source plan			The Canadian point source plan will present Canadian point source loadings, and the plan to reduce those loadings.
	- Status report and plan update	MOE	Dec 1990	
II-200	Prepare U.S. waste sites report			The existing U.S. waste sites report presents hazardous waste site loadings estimates and the plan to reduce those loadings.
	- Refine loadings estimates to be chemical-specific	EPA	Sep 1990	
	- Annual status report and plan update	EPA/DEC	Nov 1990	
II-210	Prepare Canadian waste sites report			The Canadian waste sites report will present waste site loadings estimates and recommended activities to reduce those loadings.
	- Initial report	MOE	May 1990	
	- Annual status report and plan update	MOE	May 1991	
II-300	Prepare U.S. report on other nonpoint source control programs			Focus is on nonpoint sources other than hazardous waste sites. Existing reports describe U.S. nonpoint source programs and their status. Annual updates will describe the focussed application of these programs to reduce identified Niagara River nonpoint source loadings. (See Activity III-120).
	- Annual status report and plan update	EPA/DEC	Jun 1991	

ACTIVITY NUMBER	ACTIVITY/OUTPUT	RESPONSIBLE PARTY	COMPLETION DATE	COMMENT
II-310	Prepare Canadian report on other nonpoint source control programs			Focus is on nonpoint sources other than hazardous waste sites. Initial report will describe existing Canadian nonpoint source programs and their status. Annual updates will describe the focussed application of these programs to reduce identified Niagara River nonpoint source loadings (See Activity III-120).
	- Initial report	MOE/DOE	Dec 1990	
	- Annual status report and plan update	MOE/DOE	Dec 1991	
II-400	Formulate specific recommendations to ensure that the responsible jurisdictions address the inter-lake transport issue	NRS	Sep 1990	
II-500	Undertake Niagara River/Lake Ontario Pollution Prevention Initiative			The Pollution Prevention Initiative will build on, and be complementary to, existing pollution prevention activities of the individual agencies.
	- Develop proposal	NRS/LOS	Oct 1990	
	- Implement proposal	NRS/LOS	to be determined	

ACTIVITY NUMBER	ACTIVITY/OUTPUT	RESPONSIBLE PARTY	COMPLETION DATE	COMMENT
	III. Assess the Success of Programs to Reduce the Loadings of Toxics, Ensuring a Continuing Focus on Critical Inputs			
III-100	Prepare Upstream/Downstream Report			
	- Report for Apr 1988 - Mar 1989	RMC	Jun 1990	
	- Re-analysis of data from prior years in accordance with 50% Reduction Framework	RMC	Jun 1990	
III-110	Prepare point source loadings report	PSC	Sep 1990	The report will present loadings for 1986/1987, 1987/1988, and 1988/1989; the report will also present recommendations for improvements in point source monitoring programs to meet the requirements of the "Framework for 50% Reduction."

ACTIVITY NUMBER	ACTIVITY/OUTPUT	RESPONSIBLE PARTY	COMPLETION DATE	COMMENT
III-120	Develop a comprehensive report on nonpoint source loadings			
	- Develop initial estimates based on readily available information	NPSC	Oct 1990	
	- Develop a workplan for improving these estimates	NPSC	Oct 1990	
	- Develop improved U.S. nonpoint source loadings estimates according to the workplan	EPA/DEC	To be determined	
	- Develop improved Canadian nonpoint source loadings estimates according to the workplan	MOE/DOE	To be determined	
	- Develop improved estimates of total U.S. and Canadian loadings that build on detailed U.S. and Canadian efforts.	NPSC	To be determined	
III-130	Report on Gains/Losses	FTC	Nov 1990	
III-140	50% Reduction Progress Report	NRS	Dec 1990	Report will be prepared for the NRS by the Ad Hoc 50% Reduction Progress Report Work Group.

ACTIVITY NUMBER	ACTIVITY/OUTPUT	RESPONSIBLE PARTY	COMPLETION DATE	COMMENT
III-200	Conduct Ft. Erie Station Representativeness Study			This study is being carried out by the NYSDEC on behalf of the RMC.
	- Complete Data Collection	RMC	Mar 1991	
	- Draft Report	RMC	Jan 1992	
	- Final Report	RMC	Mar 1992	
III-300	Resolve Ambient Data Detection Level Issues	RMC	To be established	Categorization report will identify chemicals for which detection levels are an issue (See Activity I-100).
III-400	Recommend development of standards and criteria			
	- Screen category IE chemicals to identify those warranting criteria development	SCC	Mar 1991	The report of the Standards and Criteria Committee presents screening criteria.
	- Resolve inadequacies and inconsistencies in standards and criteria for category IA and IB chemicals			The report of the Standards and Criteria Committee identifies a number of inconsistencies and inadequecies.
	- Identify priority activities and responsible parties	NRS	Sep 1990	Based on recommendations contained in the report of the Standards and Criteria Committee.
	- Implement NRS recommendations	All Agencies	To be determined	

ACTIVITY NUMBER	ACTIVITY/OUTPUT	RESPONSIBLE PARTY	COMPLETION DATE	COMMENT
III-500	Monitor for additional chemicals			
	- Screen chemicals in the Niagara River for potential addition to the Upstream/ Downstream Network	RMC	Mar 1991	EPA is conducting this study on behalf of the River Monitoring Committee.
	- Expand chemicals sampled in the Upstream/ Downstream network, as necessary, based on the recommendations of the Data Interpretation Group, the recommendations included in the Categorization report (Activity I-100), and the results of the screening analyses cited above.	RMC	To be determined	EC operates the Upstream/Downstream network using protocol agreed upon by the Four Parties. The RMC should recommend which parameters to monitor. If monitoring costs escalate, EC may seek cost-sharing arrangements.
III-600	Evaluate need for a biomonitoring program	NRS	Jul 1990	
III-700	Develop Niagara Falls, New York Groundwater Model	EPA	Sep 1991	Improved groundwater flow estimates from each site will be available by August 1990.
III-800	Compare existing Niagara River downstream load to estimates of the load that would allow attainment of standards and criteria in Lake Ontario			
	- Comparison based on Level I estimates.	NRS	Jul 1990	

ACTIVITY NUMBER	ACTIVITY/OUTPUT	RESPONSIBLE PARTY	COMPLETION DATE	COMMENT
	- Comparison based on Level II estimates.	NRS	to be determined	

IV. Coordinate NRTMP Activities with RAP Activities

IV-100	Annual Progress Reports on RAPs			
	- Niagara River			
	- Ontario	MOE	Jul 1990	
	- New York	DEC	Jul 1990	
	- Buffalo River	DEC	Jul 1990	
IV-110	Actions based on Coordination Committee review of the RAP Progress reports			
	- Recommendations to RAPs	NRS	Ongoing	
	- Actions on recommendations from RAPs	NRS	Ongoing	

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12) NYSDEC. August 1989. 1987-1988 Toxic Substance Discharges from Point Sources to the Niagara River.

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II. Additional Commitments

20) Public Involvement Workgroup. November 1989. Public Involvement Workplan Proposal Niagara River/ Lake Ontario Toxics Management Plans.

21) Public Involvement Ad Hoc Working Group. April 1990. Public Involvement Workplan.