

**NIAGARA RIVER
TOXICS MANAGEMENT PLAN
1990 UPDATE**

BACKGROUND

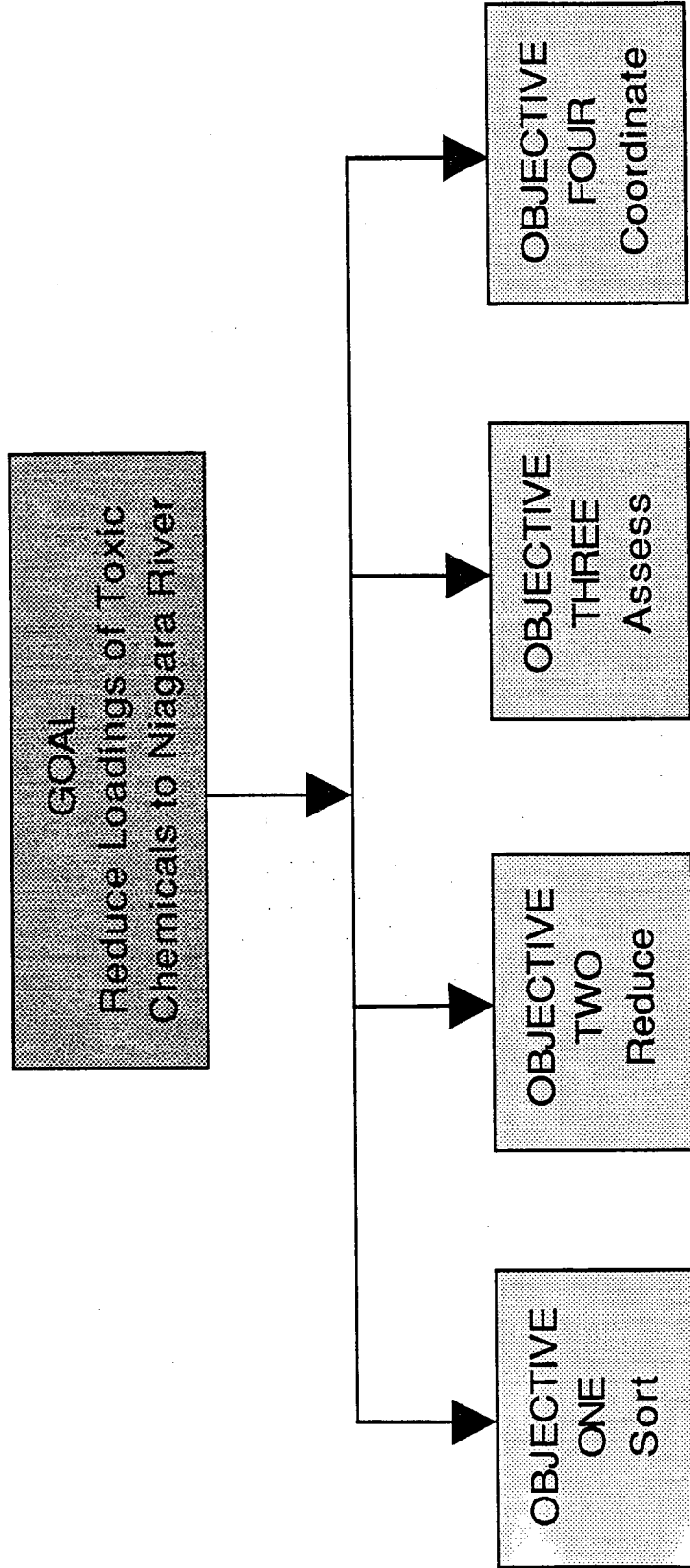
- February 1981: Establishment of Niagara River
Toxics Committee (NRTC)
- October 1984: NRTC Report
- October 1984-
September 1986: Individual Agency Action Plans
and Initiatives
- October 1986: Initial Four-Party Work Plan
- February 1987: Niagara River Toxics Management
Plan (NRTMP)
- Declaration of Intent
- Four-Party Work Plan
- July 1987: First Update of NRTMP
- October 1988: Revised NRTMP
- May 1990: Draft NRTMP Update

ACCOMPLISHMENTS

- 80% Reduction in U.S. and Canadian Point Source Loadings of Toxics Since 1981/82
- Developments of Schedules to Clean up the Most Significant U.S. Hazardous Waste Sites by 1996
- Identification of Priority Toxics
- Quantification of Point and Non-Point Source Load Reduction Targets for Toxics on the List for 50% Reduction
- Agreement on a Framework for Tracking Progress in Meeting Load Reduction Targets

NIAGARA RIVER MANAGEMENT PLAN

Goal and Objectives



Objective One:
Sort

CATEGORIES OF TOXICS

- I. Ambient Data Available
 - A. Exceeds Enforceable Standard
 - B. Exceeds 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

Objective One:
Sort

CATEGORIES OF TOXICS (Cont.)

II. Ambient Data Not Available

A. Evidence of Presence In or Input to River

B. No Evidence of Presence In or Input to River

PRELIMINARY RESULTS

Objective One:
Sort

MASTER
LIST
92 Toxics

Category I
42 Toxics

Category II
50 Toxics

- Category IA/IB--15 Toxics
- Category IC--25 Toxics
- Category ID--1 Toxic
- Category IE--1 Toxic

Objective One:
Sort

NRTMP PRIORITY TOXICS

	N.R. Water Exceedances	L.O. Fish Exceedances	Significant NR Sources
Benz(a)anthracene	X		X
Benzo(a)pyrene	X		X
Benzo(b)fluoranthene	X		X
Benzo(k)fluoranthene	X		X
Chlordane		X	
Chrysene	X		
Dieldrin		X	
Hexachlorobenzene		X	X
Mercury		X	X
Mirex		X	X
Octachlorostyrene		X	
PCBs (Total)	X	X	X
DDT and Metabolites		X	
Dioxin (2,3,7,8-TCDD)		X	X
Tetrachloroethylene	X		X

7

9

10

5090 by
1996

Objective One:
Sort

COMMITMENTS

- Prepare Comprehensive Categorization Report *all data - new or existing?* May 1990
- Use Categorization Results to Drive Other NRTMP Actions
 - Reduction Efforts
 - Assessment Efforts
 - Standards and Criteria
 - Monitoring
- Modify List of Chemicals to be Reduced by 50% by 1996 Oct 1990
- Annual Updates

OBJECTIVE TWO: REDUCE

- Point Sources
- Non-Point Sources
- Upstream Loadings
- Pollution Prevention

Objective Two:
Reduce

POINT SOURCES

Accomplishments

- 80% Reduction in U.S. and Canadian Point Source Loadings of Toxics Since 1981/2
- Development of 50% Load Reduction Targets for Point Sources
- Presentation of U.S. and Canadian Plans to Meet 50% Load Reduction Targets for Point Sources (U.S.: Interim)

Objective Two:
Reduce

POINT SOURCES (Cont.)

Commitments

- Final U.S. 50% Reduction Plan Aug 1990
- Annual U.S. and Canadian Status Reports and Plan Updates
 - Comprehensive Program Overviews
 - Loadings for Full Range of Toxics
 - Focus on Toxics for 50% Reduction

Objective Two:
Reduce

NON-POINT SOURCES

- Initial 50% Load Reduction Targets for Non-Point Sources Established by Subtraction
- Initial Focus on Hazardous Waste Sites
Longer-Term Focus on Non-Point Sources Other than Hazardous Sites

Objective Two:
Reduce

NIAGARA RIVER LOADINGS TOXICS FOR 50% REDUCTION

In Kilograms per Day; Assumes ND=0

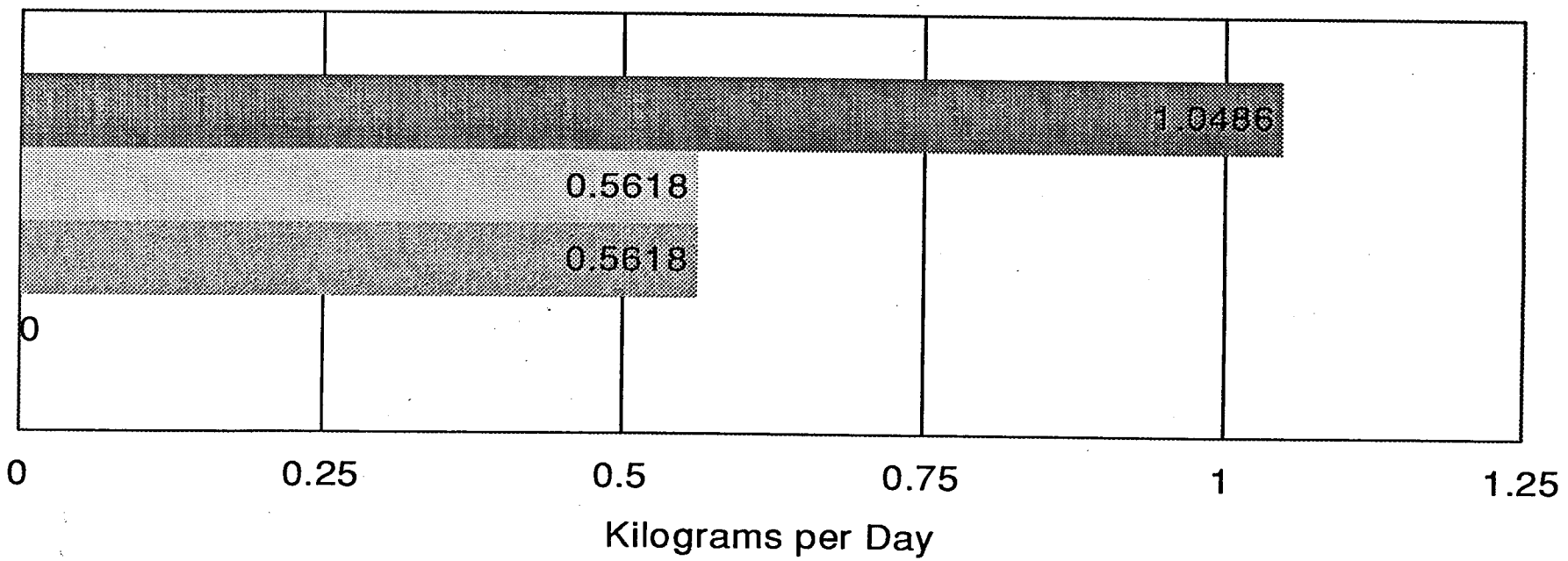
	Up- stream	Differ- ential Load	Non-Point Source Component	Point Source Component
Benz(a)anthracene	1.0486	0.5618	0.5618	0.0000
Benzo(a)pyrene	ND	0.9930	0.9930	0.0000
Benzo(b)fluoranthene	ND	1.4630	1.4130	0.0500
Benzo(k)fluoranthene	ND	1.5180	1.5180	0.0000
Tetrachloroethylene	166.44	312.46	306.686	5.6800
Mirex	ND	0.0140	0.0140	0.0000
Hexachlorobenzene	ND	0.1789	0.1590	0.0201

(7) Greater than 25% loadings Niagara-on-the-Lake Port Erie

Objective Two:
Reduce

NIAGARA RIVER LOADINGS TOXICS FOR 50% REDUCTION

Benz(a)anthracene



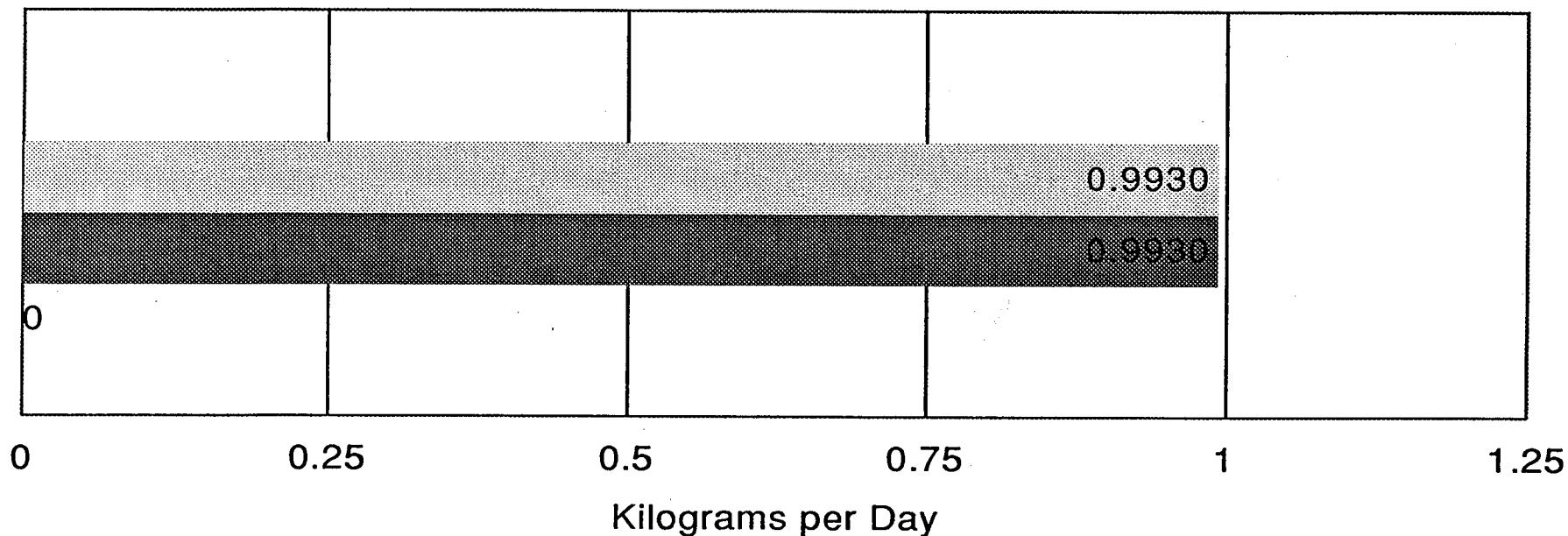
- Upstream Loading
- Non-Point Source Component
- Differential Loading
- Point Source Component (0)

Objective Two:
Reduce

NIAGARA RIVER LOADINGS TOXICS FOR 50% REDUCTION

Benzo(a)pyrene

(ND = Not Detected)



■ Upstream Loading (ND)

■ Differential Loading

■ Non-Point Source Component

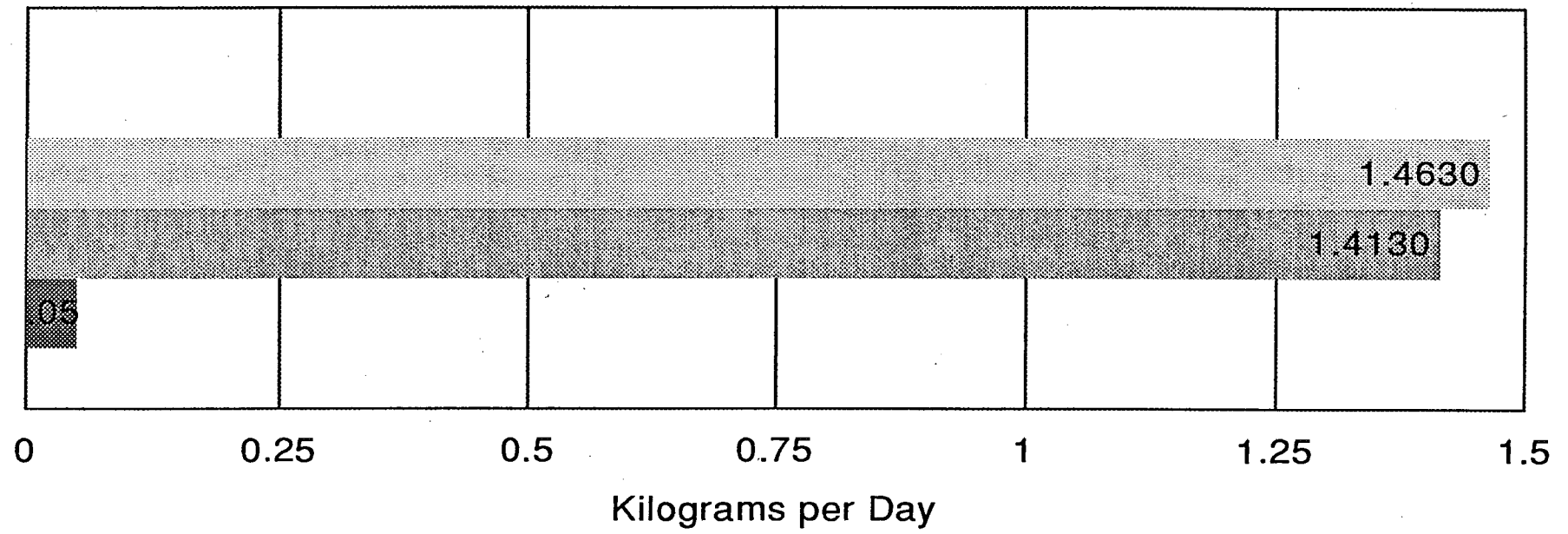
■ Point Source Component (0)

Objective Two:
Reduce

NIAGARA RIVER LOADINGS TOXICS FOR 50% REDUCTION

Benzo(b)fluoranthene

(ND = Not Detected)



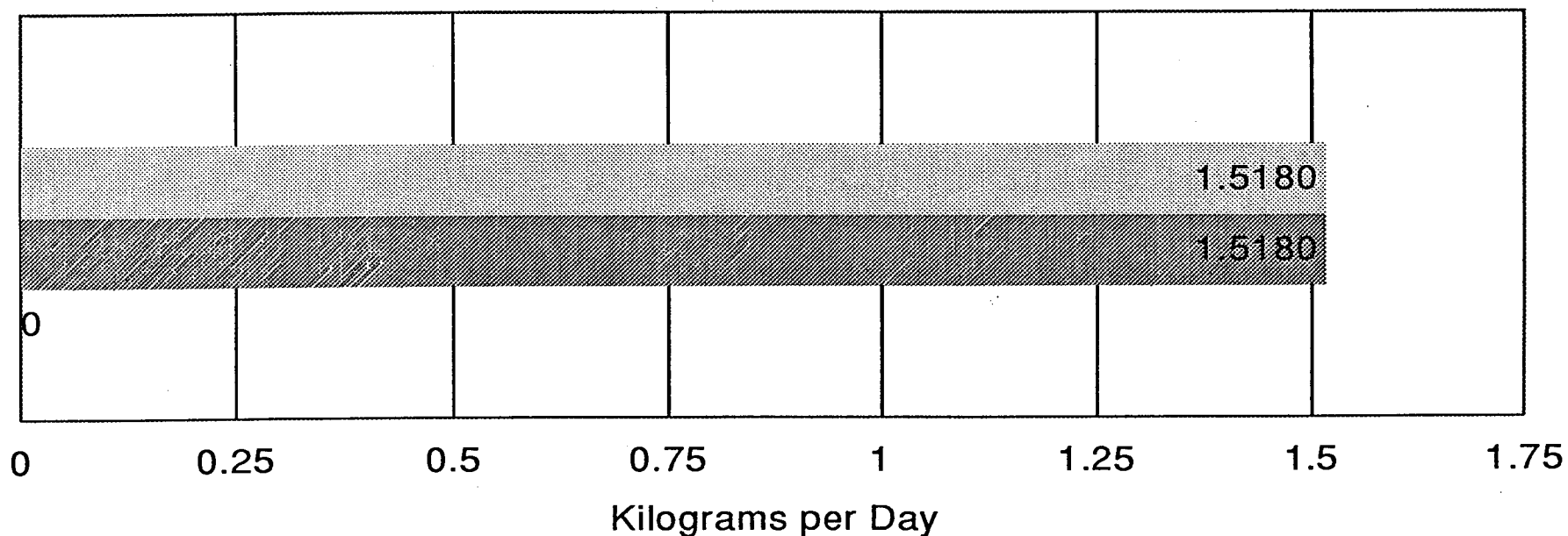
- Upstream Loading (ND)
- Non-Point Source Component
- Differential Loading
- Point Source Component

Objective Two:
Reduce

NIAGARA RIVER LOADINGS TOXICS FOR 50% REDUCTION

Benzo(k)fluoranthene

(ND = Not Detected)



■ Upstream Loading (ND)

■ Differential Loading

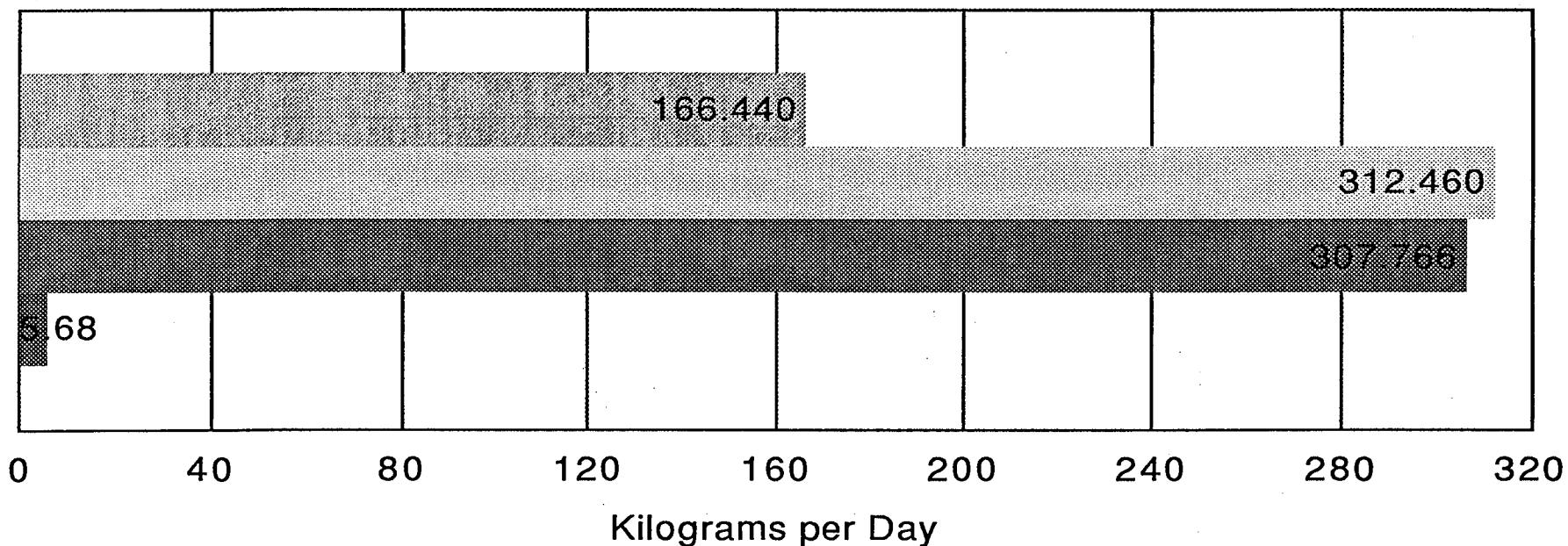
■ Non-Point Source Component

■ Point Source Component (0)

Objective Two:
Reduce

NIAGARA RIVER LOADINGS TOXICS FOR 50% REDUCTION

Tetrachloroethylene



Upstream Loading
Non-Point Source Component

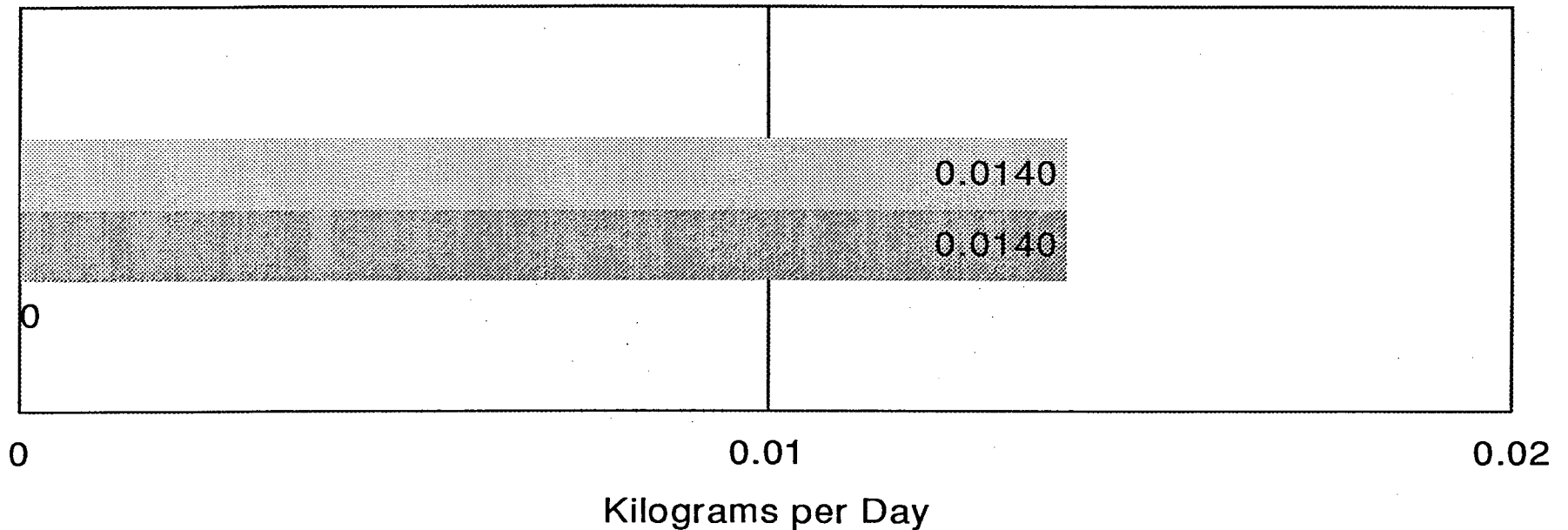
Differential Loading
Point Source Component

Objective Two:
Reduce

NIAGARA RIVER LOADINGS TOXICS FOR 50% REDUCTION

Mirex

(ND = Not Detected)



■ Upstream Loading (ND)

■ Differential Loading

■ Non-Point Source Component

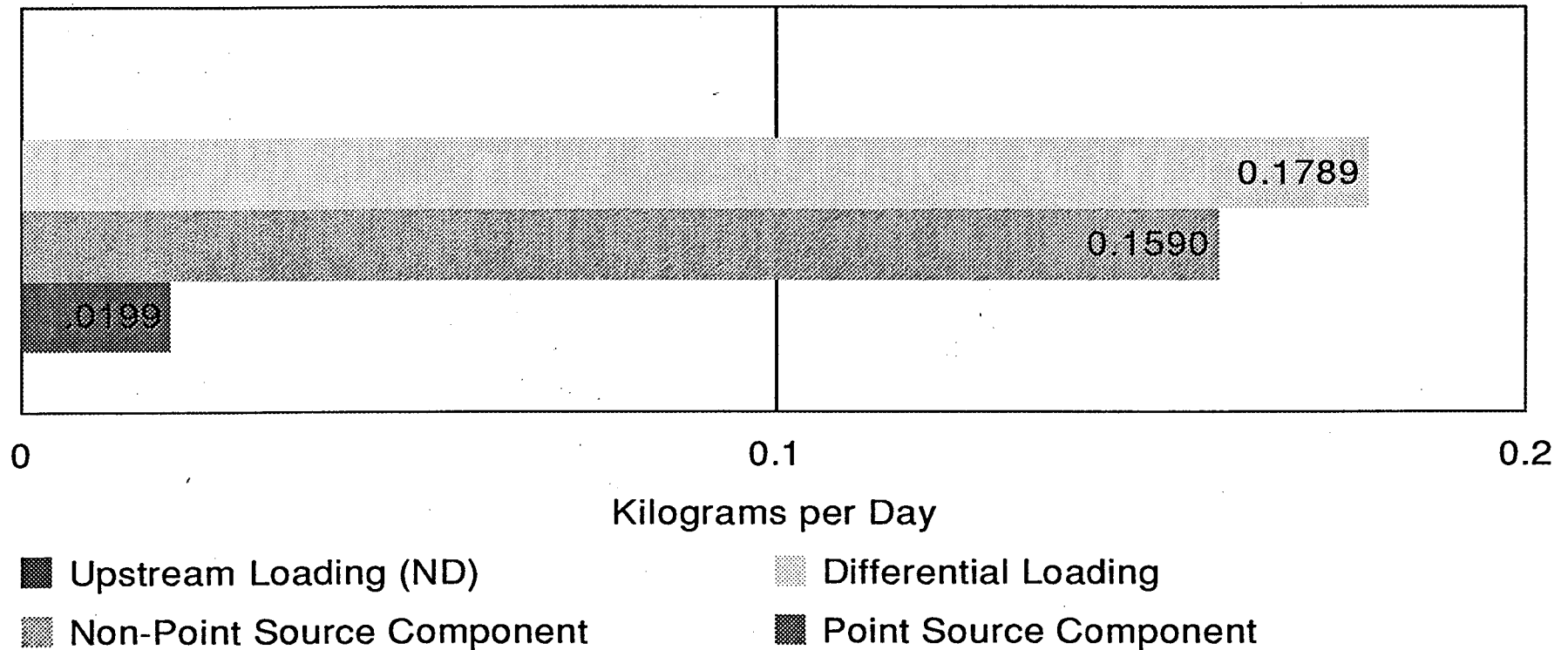
■ Point Source Component (0)

Objective Two:
Reduce

NIAGARA RIVER LOADINGS TOXICS FOR 50% REDUCTION

Hexachlorobenzene

(ND = Not Detected)



Objective Two:
Reduce

HAZARDOUS WASTE SITES/U.S.

Accomplishments

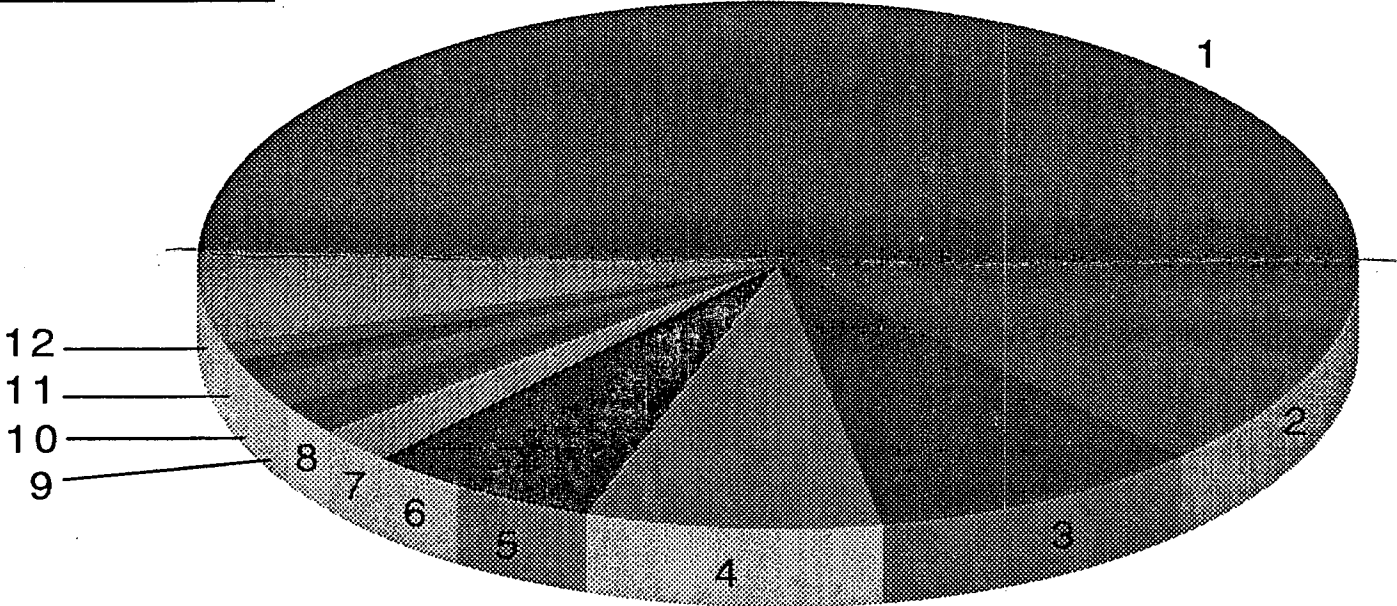
- Identified 20 Sites Contributing 99% of this Load
- Presented Schedules to Clean up the 20 Sites by 1996
 - Load to be Reduced from 694#/Day to 8#/Day

Commitments

- Refine Loadings Estimates Sept 1990
- Status Report and Plan Update Nov 1990 and Annually thereafter

Objective Two:
Reduce

HAZARDOUS WASTE SITE LOADING ESTIMATES

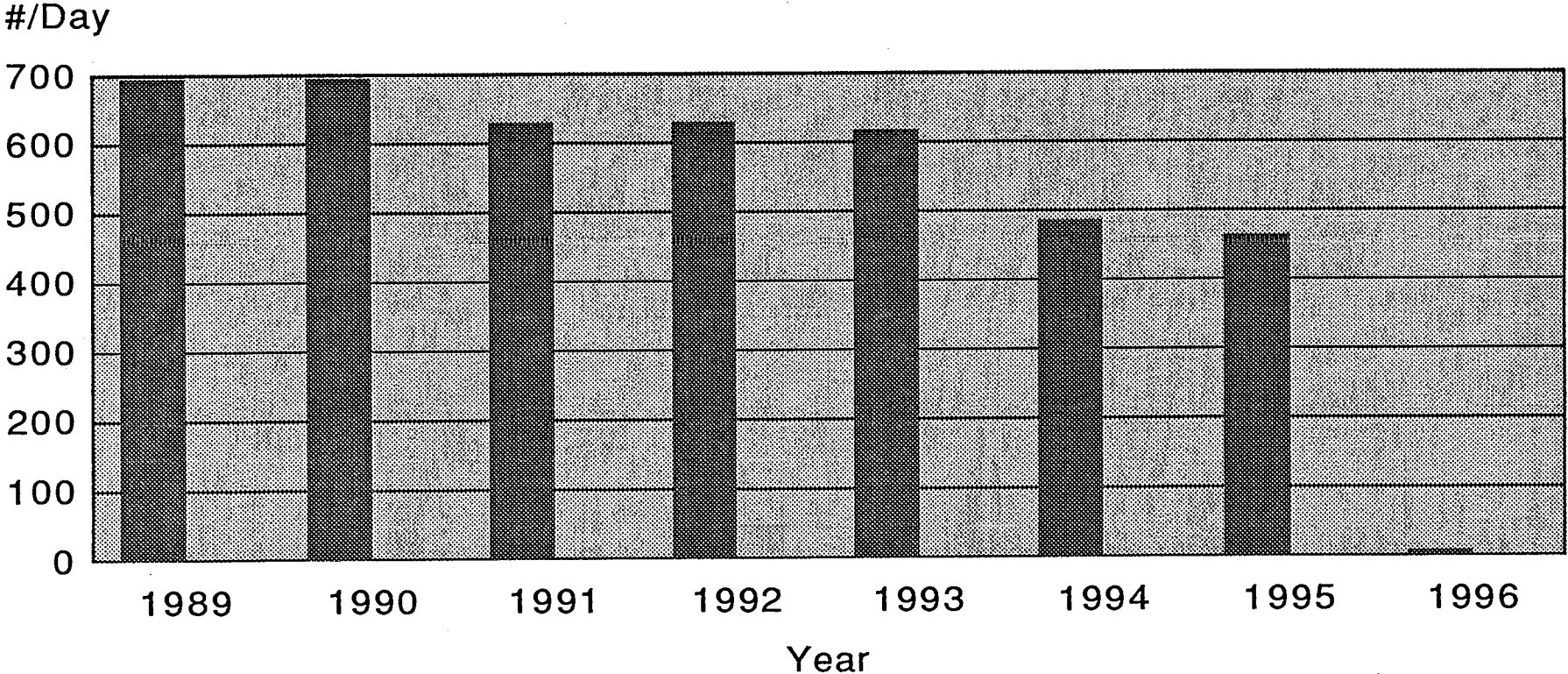


- 1. OCC Buf. Ave. (49.1%)
- 2. Niagara County Refuse (12.7%)
- 3. Necco Park/CECOS (9.4%)
- 4. OCC Hyde Park (8.2%)
- 5. 102nd Street (3.8%)
- 6. Bell Aero. Textron (2.7%)

- 7. BTL Spec. Resins (2.2%)
- 8. S-Area (2.0%)
- 9. Stauffer, PASNY (1.7%)
- 10. Solvent Chemical (1.3%)
- 11. SKW Alloys (1.2%)
- 12. Other (5.6%)

Objective Two:
Reduce

ESTIMATED LOADINGS THE NIAGARA RIVER From Hazardous Waste Sites



↑
BASED ON
EXISTING
SCHEDULES
RECRA - SUPERFUND

Objective Two:
Reduce

EXAMPLE SCHEDULE NIAGARA COUNTY REFUSE DISPOSAL

Output	Responsible Party	Target Date
RI/FS	13 PRPs	Dec 1991 ¹
Record of Decision	EPA	Mar 1992 ²
Remedial Design	13 PRPs	Sept 1992 ³
Remedial Action Start	13 PRPs	Jan 1993 ³
Remedial Action Completion	13 PRPs	Aug 1994 ³

¹ Firm Target Date.

² Preliminary target date, dependent on completion of RI/FS by PRPs.

³ Preliminary target date, subject to change upon issuance of Record of Decision.

Objective Two:
Reduce

HAZARDOUS WASTE SITES/CANADA

Commitments

- Report on 5 Canadian Waste Sites by May 1990
- Status Reports and Plan Updates Annually thereafter

Objective Two:
Reduce

OTHER NON-POINT SOURCES

Accomplishments

- **U.S. Non-Point Source Assessment and Status Reports Completed**

Commitments

- **Initial Canadian NPS Report Dec 1990**
- **U.S. Report on Focussed Application of Non-Point Source Program to Reduce NR Loadings for 50% Reduction June 1991**
- **Annual Updates**

Objective Two:
Reduce

UPSTREAM LOADINGS

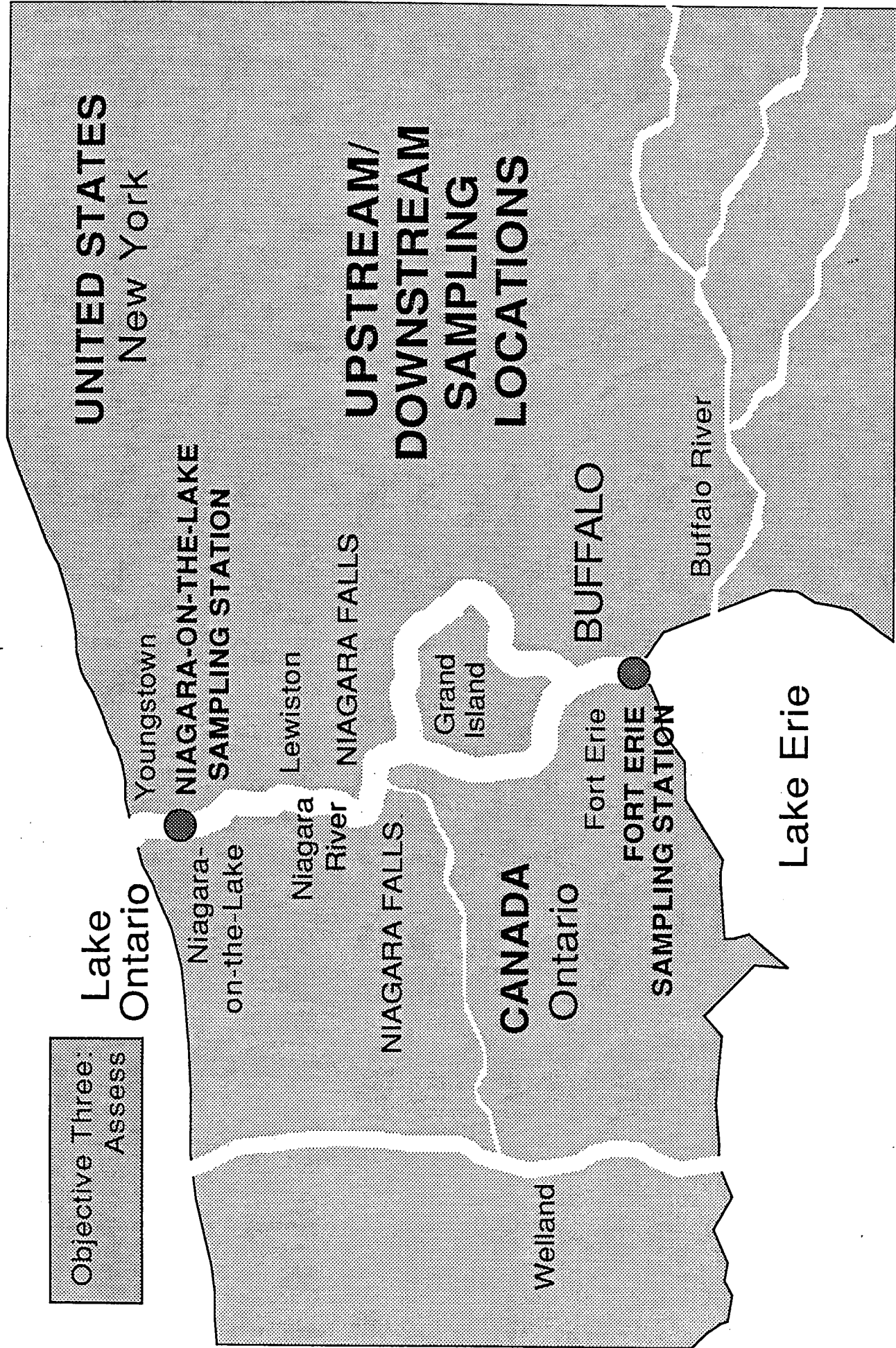
Accomplishments

- Determination that 6 of the 15 NRTMP Priority Toxics have Significant Upstream Great Lakes Sources
- Communication of this Finding to the IJC

Commitment

- Formulate Specific Recommendations to Responsible Jurisdictions by September 1990

Objective Three:
Assess



OBJECTIVE THREE: ASSESS

Accomplishments

- **Four-Party Ambient Monitoring Network Operated by Environment Canada Using Agreed-Upon Sampling and Analysis Protocols**
- **Three Years of Ambient Data Using these Agreed-Upon Protocols**
- **Three Years of U.S. and Canadian Point Source Loadings Data**
- **Assessment of Available Non-Point Source Loadings Data**
- **Agreed-Upon Framework for the 50% Reduction Progress Report**

Objective Three:
Assess

REVISED MASS BALANCE FRAMEWORK

Annual Loading by Chemical

Upstream Load	Differential Load			Downstream Load
	Point	Non-Point	Gains/Losses	
RMC	PSC	NPSC	FOTC	RMC

River
Monitoring
Committee

Point
Source
Committee

Non-point
Source
Committee

Force of
Yorps
Committee

Objective Three:
Assess

REVISED MASS BALANCE FRAMEWORK (Cont.)

Loading Trends by Chemical

Loadings	86/87	87/88	88/89	-----	96/97	Trend
Upstream						
Point Source						
NPS						
Gains/Losses						
Downstream						

OBJECTIVE THREE: ASSESS

Commitments

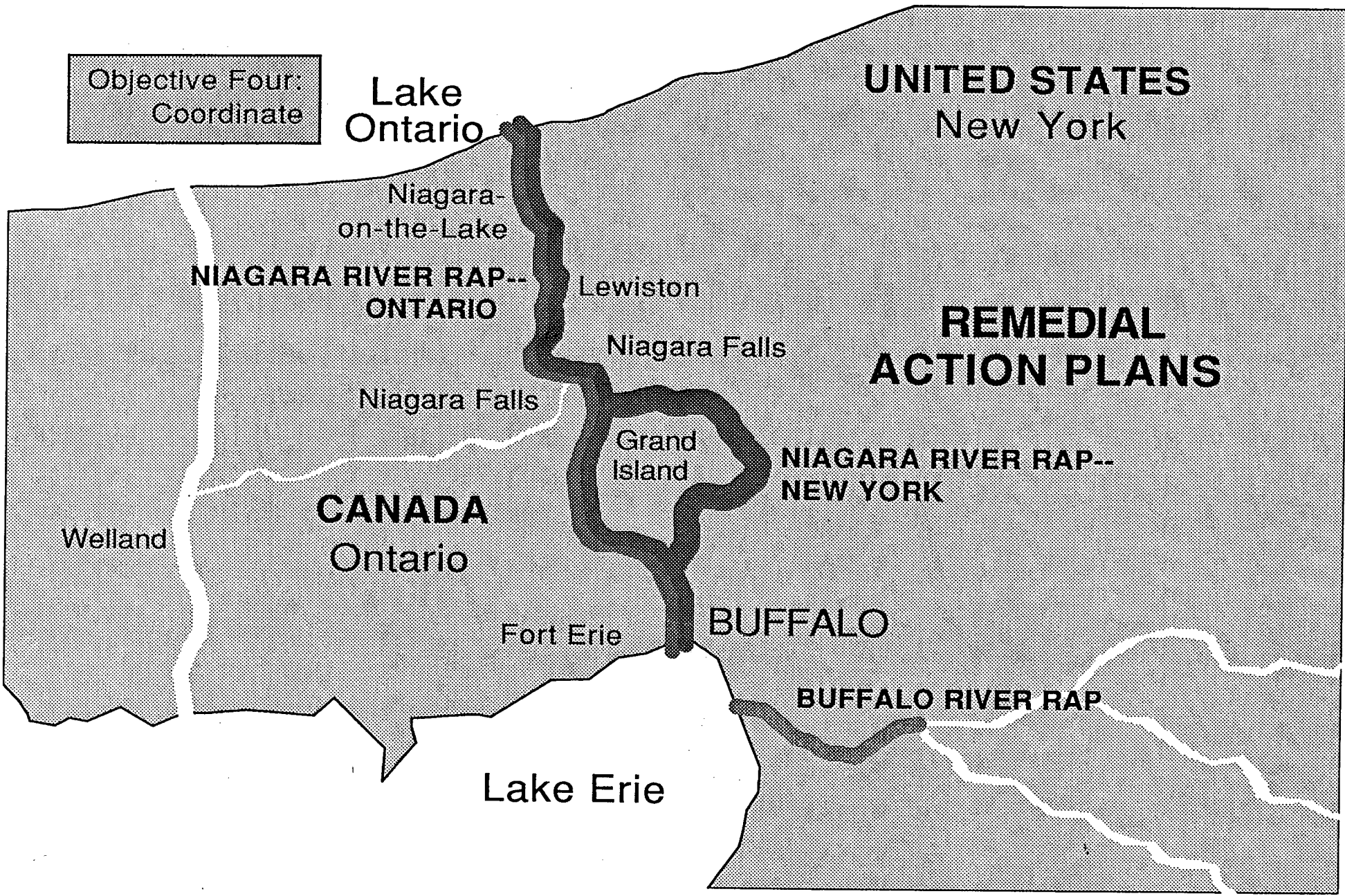
- **50% Reduction Progress Report**
 - Initial Report Dec 1990
 - Annual Updates
- **Improvements in Loadings Estimates**
 - Workplan to Develop Improved Independent Estimates of Non-Point Loadings Oct 1990
 - Ft. Erie Station Representativeness Study March 1992

OBJECTIVE THREE: ASSESS

Commitments (Cont.)

- **Recommendations to Guide the Development of a Consistent Set of Adequately Protective Enforceable Standards Sept 1990**
- **Comparison of Niagara River Downstream Loads to Level I Estimates of the Loads that would Allow Attainment of Standards and Criteria in Lake Ontario July 1990**

Objective Four:
Coordinate



Lake Ontario

UNITED STATES
New York

NIAGARA RIVER RAP--
ONTARIO

Lewiston

REMEDIAL
ACTION PLANS

Niagara Falls

Niagara Falls

Grand
Island

NIAGARA RIVER RAP--
NEW YORK

CANADA
Ontario

Welland

Fort Erie

BUFFALO

BUFFALO RIVER RAP

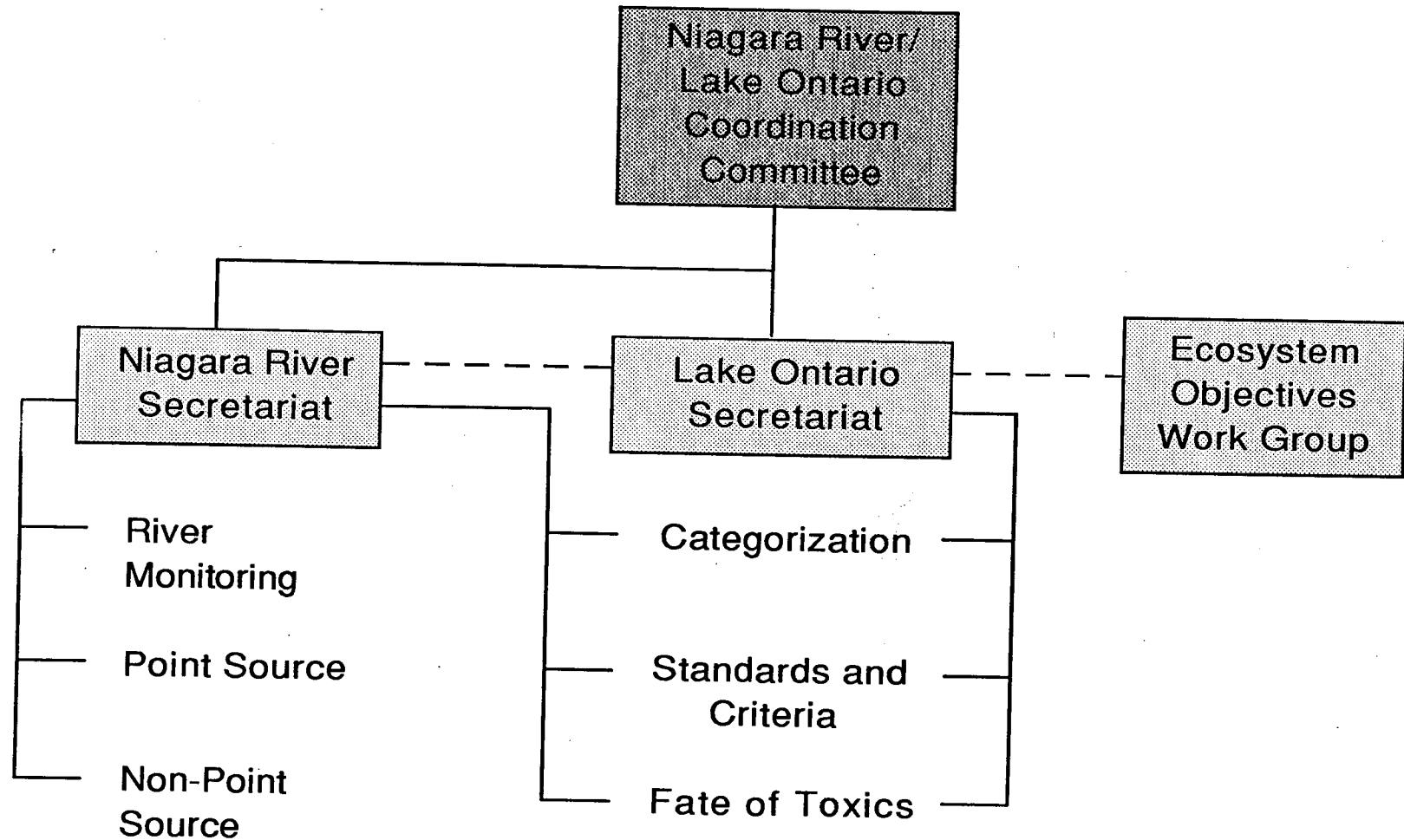
Lake Erie

Objective Four:
Coordinate

COMMITMENTS

- Annual Progress Reports Beginning in May 1990
- Four Party Recommendations to RAPs
- NRTMP Recommendations from RAPs

MANAGEMENT STRUCTURE



PUBLIC INVOLVEMENT PROCESS: SALIENT FEATURES

- Citizen Involvement on Standing Technical Committee
 - Members
 - Correspondents
- Public Involvement in the Formulation of Secretariat Recommendations to the Coordination Committee
 - Workshops on Plan Updates
 - Issue-Oriented Workshops
- Coordination Committee Open Meetings
 - Public Involvement
 - Accountability
- Other Outreach Activities