

CIRCULATING COPY
Sea Grant Depository

LOAN COPY ONLY

**Public Participation in Great Lakes Remedial Action Planning
Final Report
New York Sea Grant Extension/College of
Agriculture and Life Sciences Applied Research Program
Project No. 88-004**

**Betsy Kiernan Landre
Barbara A. Knuth
Charles R. O'Neill**

August 1990

\$2.25

Public Participation in Great Lakes Remedial Action Planning
Final Report
New York Sea Grant Extension
College of Agriculture and Life Sciences
Applied Research Program
Project No. 88-004

Betsy Kiernan Landre and Barbara A. Knuth
Department of Natural Resources
Cornell University
Ithaca, NY 14853

Charles R. O'Neill
New York Sea Grant Extension Program
405 Administration Building
SUNY College at Brockport
Brockport, NY 14420

August, 1990

INTRODUCTION:

The 42 Areas of Concern:

Remedial Action Planning is a cooperative initiative between the United States and Canada aimed at the cleanup of the 42 most severely polluted locations across the Great Lakes Basin (Figure 1, Table 1). These sites have been identified as failing to meet certain water quality objectives under the U.S./Canada Great Lakes Water Quality Agreement (GLWQA). They are jointly listed by the two federal governments as the "Areas of Concern" (AOCs), and are recognized as priority remediation sites.

Pollution problems vary in type and severity across the 42 AOCs. In some sites (like Collingwood Harbour and Severn Sound on Georgian Bay in Lake Huron), elevated nutrient loadings and associated cultural eutrophication are primary concerns. In all but one Area, toxicants pose a problem. In most sites, harbor and/or river sediments contaminated with polychlorinated biphenyls (PCBs), pesticides, cyanides, heavy metals, and other contaminants threaten wildlife and impede beneficial resource uses such as fish consumption, recreation, and dredging for transportation. Fish consumption advisories are currently in effect in 38 of the 42 Areas (IJC 1989).

The Great Lakes communities facing these pollution problems also vary. Large metropolitan cities such as Toronto and Detroit are involved as are smaller, more isolated, single-industry communities such as Nipigon (population 2,224) on the northern shore of Lake Superior.

The Remedial Action Planning Program:

Remedial Action Planning was proposed as a new approach to address water quality problems in the Areas of Concern by the International Joint Commission's Water Quality Board in 1985. The program was later incorporated into the amended Great Lakes Water Quality Agreement of 1987.

Remedial Action Planning requires state and provincial governments to prepare a cleanup plan called a Remedial Action Plan (RAP) for each AOC within their jurisdictional boundaries. IJC's RAP protocol encourages a comprehensive planning process and document (Figure 2). According to the protocol, each plan should include descriptions of the impaired resource uses in the AOC, sources of pollutants, and appropriate remedial measures needed to restore the beneficial uses. RAPs must also estimate remediation costs and identify a time schedule for implementation of specific remedial measures as well as those parties responsible for implementing each action. RAPs, then, are intended to be action-oriented planning documents which take into account important implementation decisions during the planning process. Once completed, the quality of each RAP is evaluated by the IJC.

Two tenets underlie Remedial Action Planning. The first is that an ecosystem approach, which recognizes that the five Lakes and their interconnecting channels

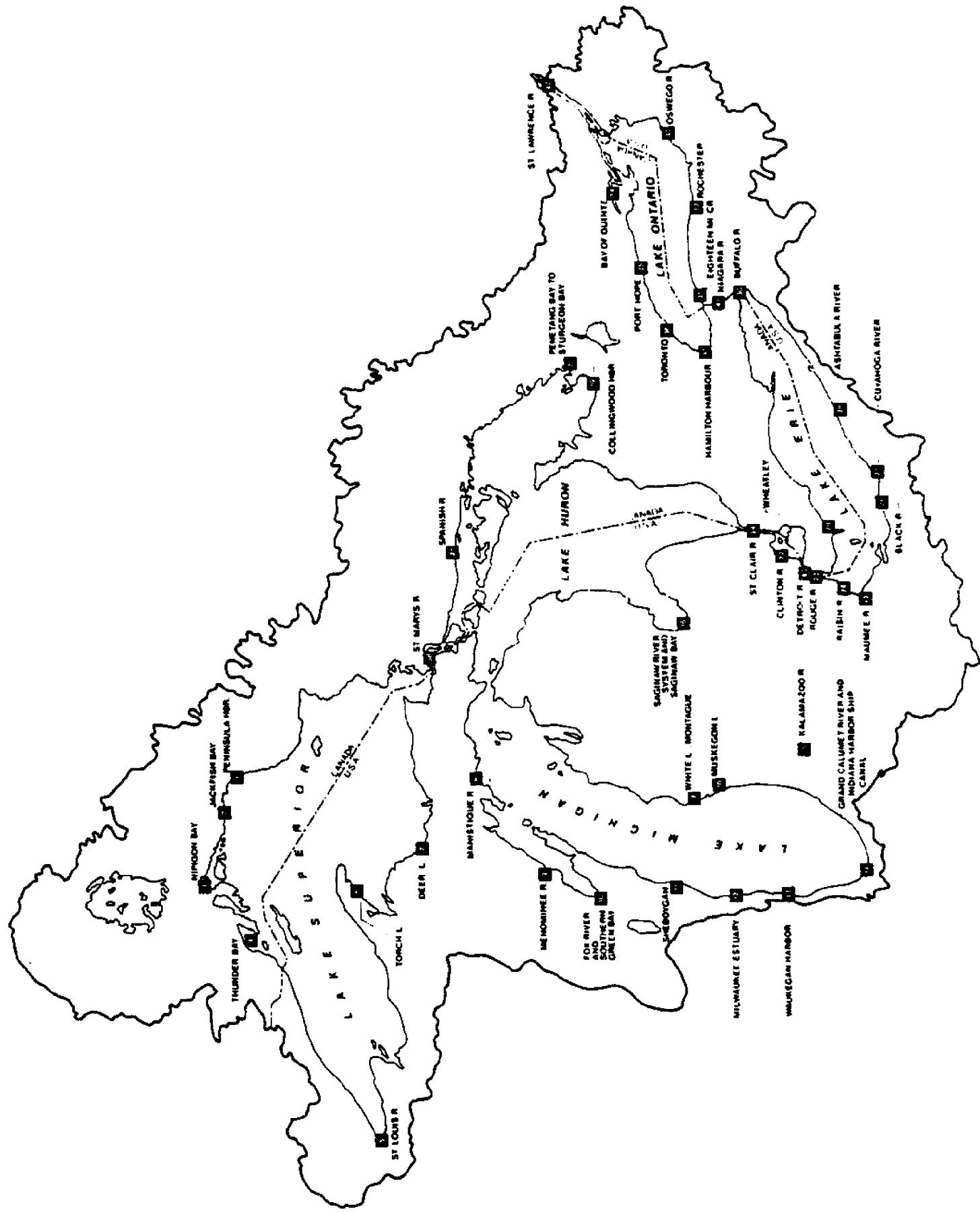


FIGURE 1. Areas of Concern in the Great Lakes Basin.
1985 Report on Great Lakes Quality, Report to the International Joint Commission.
Credit.

Table 1. Government agencies responsible for the development of Remedial Action Plans for the Areas of Concern.

AOC #	AREA OF CONCERN	AGENCY (LEAD/ASSIST) ¹
<u>Lake Superior</u>		
1	Peninsula Harbour	OMOE
2	Jackfish Bay	OMOE
3	Nipigon Bay	OMOE
4	Thunder Bay	OMOE
5	St. Louis River	MPCA/WDNR
6	Torch Lake	MDNR
7	Deer Lake-Carp Creek-Carp River	MDNR
<u>Lake Michigan</u>		
8	Manistique River	MDNR
9	Menominee River	WDNR/MDNR
10	Fox River-Green Bay	WDNR
11	Sheboygan Harbor	WDNR
12	Milwaukee Harbor	WDNR
13	Waukegan Harbor	IEPA
14	Grand Calumet River/Indiana Harbor Canal	IDEM
15	Kalamazoo River	MDNR
16	Muskegon Lake	MDNR
17	White Lake	MDNR
<u>Lake Huron</u>		
18	Saginaw River/Bay	MDNR
19	Collingwood Harbour	OMOE
20	Severn Sound	OMOE
21	Spanish River	OMOE
<u>Lake Erie</u>		
22	Clinton River	MDNR
23	Rouge River	MDNR
24	River Raisin	MDNR
25	Maumee River	OEPA
26	Black River	OEPA

Table 1 (cont.)--Page 2

AOC #	AREA OF CONCERN	AGENCY (LEAD/ASSIST) ¹
27	Cuyahoga River	OEPA
28	Ashtabula River	OEPA
29	Wheatley Harbour	OMOE
<u>Lake Ontario</u>		
30	Buffalo River	NYDEC
31	Eighteen Mile Creek	NYDEC
32	Rochester Embayment	MCDP
33	Oswego River	NYDEC
34	Bay of Quinte	OMOE
35	Port Hope	EC
36	Toronto Waterfront	OMOE
37	Hamilton Harbour	OMOE
<u>Connecting Channels</u>		
38	St. Marys River	OMOE/MDNR
39	St. Clair River	OMOE/MDNR
40	Detroit River	MDNR/OMOE
41A	Niagara River/New York	NYDEC
41B	Niagara River/Ontario	OMOE
42A	St. Lawrence River/Massena	NYDEC
42B	St. Lawrence River/Cornwall	EC

¹EC = Environment Canada

IDE = Indiana Department of Environmental Management

IEPA = Illinois Environmental Protection Agency

MCDP = Monroe County Department of Planning

MDNR = Michigan Department of Natural Resources

MPCA = Minnesota Pollution Control Agency

NYDEC = New York Department of Environmental Conservation

OEPA = Ohio Environmental Protection Agency

OMOE = Ontario Ministry of the Environment

WDNR = Wisconsin Department of Natural Resources

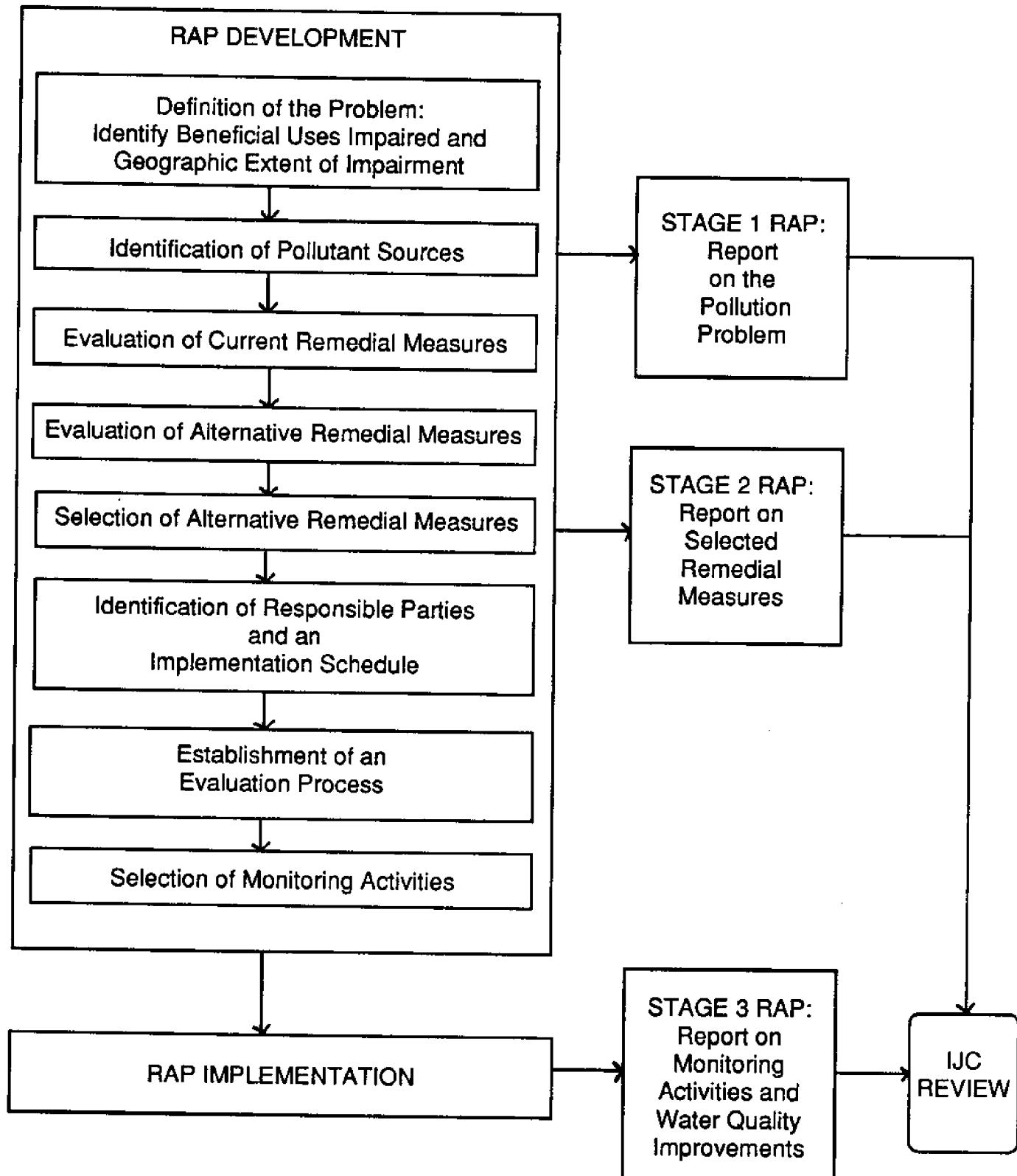


Figure 2. The RAP Process according to IJC protocol.

comprise a vast and dynamic system, must be used. Pollutants travel through the system via multiple media and cross political boundaries. Remediation in one Area can result in contamination elsewhere in the system. The ecosystem approach attempts to avoid this by focussing on interrelationships -- physical, biological, chemical, and political -- within the vast Great Lakes ecosystem.

The second tenet is that public involvement is necessary throughout the development of RAPs. The IJC contends that political will in Areas of Concern is prerequisite to the successful implementation of RAPs, particularly in AOCs where industry or local government are implicated in cleanup. According to the IJC, public participation in the planning process can lead to support for the plan.

Purpose of the Study:

Remedial Action Planning has been called a bold departure from traditional pollution control efforts (Hartig and Thomas 1988). Its emphasis on public involvement and consensus building at the local level is unprecedented among federal programs. As a break from tradition, the program merits examination. Preliminary successes in the RAP process are already heralded as models for future water resources planning programs, yet RAPs are being prepared in a diversity of places and under varying circumstances. Sea Grant Extension Specialists are involved as resource people and facilitators in a variety of coastal management public involvement processes including RAPs. Their efforts may be enhanced by learning from pitfalls and successes in the ongoing RAP process across the Great Lakes Basin.

The purpose of this study was to describe and characterize public involvement processes in Remedial Action Planning across the Great Lakes Basin, and to provide New York's Sea Grant Extension Specialists with an inventory of the types of citizen participation programs used in various AOCs. In addition to an inventory of the public involvement mechanisms used by agencies for the development of RAPs, this report includes a summary of the agencies' goals for public involvement and the roles that citizens play in the planning process. Special emphasis is placed on citizen advisory committees, the hallmark of public involvement in the RAP process.

METHODOLOGY:

Public involvement programs used in each AOC were described via mail and telephone surveys of the state, provincial, and, where appropriate, local lead and assisting agency personnel working closely on RAP development. The staff person identified as working most directly with the public involvement component of the RAP process in each Area was identified through a list of "RAP coordinators" for the AOCs available from the IJC. Telephone calls were made to each RAP coordinator to confirm his or her current status in the RAP process, and changes in the study population were made where

appropriate.

Because the RAP process has been tabled in three AOCs, these Areas were dropped from the study. New York's 18-Mile Creek RAP will not be developed until further resources are allocated within the Department of Environmental Conservation, the responsible agency. Ohio Environmental Protection Agency has postponed the Black River RAP due to lack of resources as well. In Illinois, remediation of contaminated sediments in Waukegan Harbor was ordered in a recent Consent Decree between the U.S. Environmental Protection Agency and Outboard Marine Corporation. Illinois Environmental Protection Agency has decided to delay RAP development until this remediation process is completed.

Some AOCs cross state, provincial, or international boundaries. The St. Clair, St. Marys, and Detroit Rivers border Ontario and Michigan. The St. Louis River AOC borders Minnesota and Wisconsin while the Menominee River AOC borders Wisconsin and Michigan. In these cases, a lead agency from one jurisdiction is designated as being ultimately responsible for the RAP development, though an assisting agency from the second jurisdiction tends to play an integral role. The study included individuals in both lead and assisting agencies for these sites.

In trans-boundary AOCs between New York and Ontario, the Niagara and St. Lawrence Rivers, separate RAPs are being prepared by each jurisdiction, although some participants hold memberships on binational citizens committees. As separate RAPs, questionnaires were sent to both lead agencies in these Areas of Concern.

Forty-eight self-administered questionnaires were ultimately sent to individuals, primarily RAP coordinators, in lead and assisting planning agencies. In a few cases, questionnaires were sent to another individual in the agency working more closely on public involvement for RAPs. A few respondents are responsible for more than one RAP. These individuals were sent separate surveys for each RAP that they oversee.

After three mailings, surveys were received from all but five respondents (answering for six sites), resulting in a response rate of 89.6%. A telephone interview schedule was developed and used as a follow-up to the mail survey, to obtain different information through open-ended questions and a more personal approach, while also probing some mail survey questions in more depth. Telephone interviews which combined certain, but not all, questions from the two survey instruments were conducted with the five non-respondents. Hence, information on public involvement programs was obtained for all AOCs active in the RAP program, though in less depth in five cases.

Data were entered into the statistical package SYSTAT, and descriptive statistics were used to summarize the data and build a composite picture of public involvement across the Areas of Concern.

The fact that the project focussed on the views of agency personnel must be emphasized. As sponsors of Remedial Action Planning in the Areas of Concern, it is likely that the views of agency personnel do not reflect completely the views of others involved in the process. Nonetheless, these individuals were judged to be most knowledgeable about the process. To gain an overview of public involvement in Remedial Action Planning, RAP coordinators were considered the single most reliable source of information available, given constraints of the study. To reduce the chance of biases contaminating the data, the survey instruments were designed to be non-evaluative in tone. It is recognized, though, that a true and complete understanding of public involvement in the RAP process in each AOC would require local verification of the views expressed by coordinators in this study.

RESULTS:

Status of the Remedial Action Planning Process:

While the Great Lakes States and Province of Ontario have been committed to Remedial Action Planning since 1985, progress in the development of RAPs has been uneven (Table 2). Draft RAPs have been written for several Michigan sites while, in one Area in each of New York and Indiana, the process has just begun. RAP coordinators in these two sites explained their pace. In New York, minimal agency resources have been a constraint. In Indiana, a preliminary RAP prepared by consultants was deemed inadequate by the lead agency and therefore the process is actually in its second iteration.

While a sequence of planning stages is recommended through the IJC protocol, in actuality the RAP process is not linear (Table 2). In some sites, agencies have moved ahead in the process, leaving other steps incomplete. Coordinators claim that scientific uncertainty is a factor. For example, in many sites data are not complete for all sources of the pollution problem. Rather than waiting until all desired data are available to write the plan, agencies have recommended studies (as in the Buffalo River RAP) as opposed to remedial actions for less understood aspects of the problem while also recommending actions for those aspects which are understood.

Some Areas have prepared preliminary RAP reports. These reports are prepared after certain steps in the RAP process are completed, and are reviewed by the IJC and often by the public (through a comment period). Stage 1 reports are usually written after the environmental problem and its sources have been described. In some cases, water use goals for the AOC are also defined in this report. A Stage 2 report is written once alternative remedial measures are identified, evaluated, and selected. After remedial measures have been implemented, and water quality monitoring indicates that the resource is no longer impaired, a Stage 3 report is prepared and used as evidence to delist the Area of Concern. At this time, 15 Areas have written at least the first draft of the Stage 1 reports (represented by "P" in Table 2). An additional 12 Areas have

Table 2. Progress in Remedial Action Planning as reported by lead agencies during January-March, 1990 (N=41; C=step completed; S=step started; P=preliminary report completed).

AREAS OF CONCERN	RAP PROCESS								
	1 Identify Impaired Water Uses	2 Describe Pollution Problem	3 Identify Polluters or Sources	4 Identify Water Use Goals	5 Identify Alternative Remedial Actions	6 Select Preferred Remedial Actions	7 Write Draft RAP	8 IJC Review of Draft	9 Revise Draft RAP
Peninsula Harbour	C	C							
Jackfish Bay	C	C							
Nipigon Bay	C	C							
Thunder Bay	C	C							
St. Louis River/Bay	C	C	C	C			P		
Torch Lake	C	C	C	C	C	C	C	C	C
Deer Lake-Carp River/Creek	C	C	C	C	C	C	C	C	C
Manistique River	C	C	C	C					
Menominee River	C	C	C	C					
Fox River/Green Bay	C	C	C	C	S	C	C	C	C
Sheboygan Harbor	C	C	C	C	S	C	C	C	C
Milwaukee Harbor	S								
Grand Calumet/Indiana Harbor	S	S	S	S					
Kalamazoo River	C	C	C	C			P		
Muskegon Lake	C	C	C	C	C	C	C	C	C
White Lake	C	C	C	C	C	C	C	C	C
Saginaw River/Bay	C	C	C	C	C	C	C	C	C
Collingwood Harbour	C	C	C	C	S	P	P	C	C
Severn Sound	C	C	C	C	S	P	S	P	S
Spanish River	C	C	C	C			P		

Table 2. (Continued)

AREAS OF CONCERN	1 Identify Impaired Water Uses	2 Describe Pollution Problem	3 Identify Polluters or Sources	4 Identify Water Use Goals	5 Identify Alternative Remedial Actions	6 Select Preferred Remedial Actions	7 Write Draft RAP	8 IJC Review of Draft	9 Revise Draft RAP
Clinton River	C	C	C	C	C	C	C	C	C
Rouge River	C	C	S	C	S	S	C	C	C
River Raisin	C	C	C	C	C	C	C	C	C
Maumee River	C	C	C	C	C	C	P		
Cuyahoga River	C	C	S	S					
Ashabula River	C	C	C	C	C	C	P		
Wheatley Harbour	C	C	C	S					
Buffalo River	C	C	C	C	C	C			
Rochester Embayment	S	S	S	S					
Oswego River	C	C	C	C			P	S	
Bay of Quinte	C	C	C	C	C	C	P	S	
Port Hope	C	C	C	C			P	S	
Toronto Waterfront	C	C	C	C	C	S	P	S	
Hamilton Harbour	C	C	C	C	C	S	P	C	
St. Marys River	C	C	C	C			P		
St. Clair River	C	C	C	C			P		
Detroit River	C	C	C	C			P		
Niagara River/NY	S	C	S	S			P		
St. Lawrence R./ONT	C	C	C						
# AREAS COMPLETE	33	37	30	24	15	8	12	9	2
% AREAS COMPLETE	80	90	73	59	37	20	29	22	4

completed a single draft RAP encompassing Stages 1 and 2 (represented by "C" in Table 2). For a few sites, such as Green Bay, Wisconsin and the Rouge River, Michigan, those plans are now being implemented.

Agency Goals for Public Involvement in the RAP Process:

RAP coordinators were asked to rate eleven possible goals for public involvement in the Remedial Action Planning process. The goals were characterized as practical from an agency point of view (such as building support for RAP implementation and fostering positive relationships between the agency and community groups); legal (such as following agency mandates for public involvement); technical (such as expanding the base of information included in the RAP); and social (such as increasing the capacity of community groups to tackle future environmental problems).

Goal ratings by lead agencies were summarized in two ways (Table 3). First, the percent of RAP coordinators rating each goal a "priority" goal was calculated. Priority goals are defined as those rated as essential or very important (rated as '1' or '2' on a five point scale). Priority goals in 74% or more of the Areas include: 1) building support for RAP implementation; 2) increasing awareness of the pollution problems; 3) defining water use goals in keeping with public sentiment; and 4) fostering positive relationships between the agency and community groups. These data reflect an emphasis on practical goals centered around public acceptance of the plan and support for its implementation.

Other goals rated as priorities in the majority of Areas include informing target audiences about the RAP process and stimulating watchdog activities. These too, may be seen as practical, relating ultimately to plan acceptance and successful implementation. Goals of priority in about half of the Areas include expanding the historical and social base of information in the RAP and increasing the capacity of community groups in the AOC to work toward more desirable environmental management in the future. Goals which are lower priority in most Areas include following IJC recommendations or agency mandates for public involvement. Expanding the technical base of information in the RAP ranked lowest based on this priority score.

Examined on a regional level, it appears practical goals related to the success of the RAP underlie lead agency public involvement programs. Agencies are less concerned about following mandates for public involvement. More view public involvement as a worthwhile means of obtaining social and historical information about the AOC as opposed to technical information.

Mean scores were also calculated for each goal. The lower the mean score, the more important the goal. Mean scores take into account the range of responses given for a goal rather than focussing on those at the end of a scale. These scores revealed that, while 54 percent of the respondents rated the expansion of the base of historical and social information in the RAP as essential or important, on average, this is considered the

lowest priority goal. While roughly half the RAP coordinators perceive that public involvement serves an important social information function, other coordinators clearly disagree. Therefore, when mean scores are considered, the goal of expanding the scope of information to be included in the RAP -- be it technical, social or historical -- rates relatively low on average among RAP coordinators (Table 3).

Mechanisms for Public Involvement:

The goals for public involvement in a particular governmental program reflect the sponsoring agency's intentions for and philosophy about public involvement. The mechanisms used to involve the public are equally important. Different mechanisms are appropriate for different goals. Some are interactive while others involve one-way communication and are chiefly informative. Some are targeted at leaders or key decision makers in the community while others involve the general citizenry. RAP coordinators were asked about a variety of potential mechanisms used to involve the public in Remedial Action Planning. Mechanisms used in the majority of Areas include: 1) the mass media, with an emphasis on newspaper articles (91%); 2) large public hearings to solicit information from the public with further discussion (74%); 3) and presentations to community groups (74%) (Table 4). About one-half of the Areas have also used private meetings with key interest groups, questionnaires about local water quality problems, public comment on draft reports, tours or waterfront festivals and celebrations, and public information booths and displays.

About a third or less of the Areas have used large public hearings where information exchange is unidirectional with the public either informing or being informed by the agency. Also less emphasized in Remedial Action Planning is the use of small group workshops with RAP staff and community groups, meetings with a set of representatives from key interest groups, questionnaires about local water quality goals, drop-in centers and telephone hot lines (Table 4).

Variety in the type, number, and frequency of public involvement mechanisms used in the RAP process exists among the AOCs to date. For instance, in Michigan Areas such as Manistique River and Torch Lake, public comment on the draft RAP was the only formal public involvement mechanism used. In Green Bay, Wisconsin, the Wisconsin Department of Natural Resources used public hearings with discussion, private meetings with stakeholders, community workshops, small group presentations, questionnaires, waterfront celebrations, media coverage, public displays, and public comment on draft reports, in addition to a RAP citizens committee. Other Areas where a variety of mechanisms are used include the Rouge River and Saginaw Bay in Michigan, Bay of Quinte and Collingwood Harbour in Ontario, and St. Lawrence River/Massena in New York. One factor affecting the numbers and variety of mechanisms used to involve the public in RAP development is the development stage of the RAP itself. Some of those in the early stages, such as New York's Niagara River RAP and Indiana's Grand Calumet RAP, have used fewer mechanisms. Therefore, when considering one Area's public

Table 3. Lead agency goals for public involvement in Remedial Action Planning (N = 35).¹

PUBLIC INVOLVEMENT GOALS	% AREAS OF CONCERN RESPONDING ESSENTIAL OR VERY IMPORTANT	MEAN SCORE ² (\pm SD)
Build Support for Implementation	80 ³	1.56(\pm 1.11)
Increase Awareness of Pollution Problems in the AOC	77	1.50(\pm .83)
Define Water Use Goals in Keeping with Public Sentiment	74 ⁴	1.88(\pm 1.23)
Foster Positive Relationships Between Community Groups and the Agency	74 ⁵	1.79(\pm .78)
Inform Target Audiences About the RAP Process	63	1.97(\pm .98)
Stimulate Watchdog Activities (means for evaluating plan implementation)	60	2.15(\pm 1.11)
Expand the Base of Historical and Social Information in the RAP	54 ⁶	3.37(\pm .96)
Increase the Capacity of Community Groups in the AOC to Work Toward More Desirable Environmental Management in the Future	46	2.63(\pm 1.13)
Follow Lead Agency Public Involvement Mandates	37	2.68(\pm .98)
Follow IJC Recommendations for Public Involvement	31	2.88(\pm 1.17)
Expand the Scope of Technical Information in the RAP	29 ⁷	3.10(\pm 1.27)

¹ Sample includes mail survey respondents from lead agencies who were asked to rank the importance of 11 public involvement goals. Non-respondents for six sites were asked via telephone interviews to state the most important goals of their agency's public involvement program for RAPs. Goals mentioned were interpreted as essential or very important. These data are reported separately in footnotes.

² Mean calculated on a scale of 1 to 5 where 1=essential and 5=not important.

³ Three out of six telephone interviewees mentioned this goal.

⁴ Five out of six telephone interviewees mentioned this goal.

⁵ One out of six telephone interviewees mentioned this goal.

⁶ One out of six telephone interviewees mentioned this goal.

⁷ Two out of six telephone interviewees mentioned this goal.

Table 4. Public involvement mechanisms used by lead agencies in Remedial Action Planning (N=41; # = number of meetings per year; U = mechanism used; P = mechanism planned).

AREAS OF CONCERN										
PUBLIC INVOLVEMENT MECHANISMS	Peninsula Harbour	Jackfish Bay	Nipigon Bay	Thunder Bay	St. Louis River/Bay	Torch Lake	Deer Lake	Manistique River	Menominee River	Fox River/Green Bay
LARGE PUBLIC MEETINGS										
a. to disseminate info						2				1
b. to solicit info										1
c. to solicit info with discussion	1	1	1					U	1	1.5
SMALLER MEETINGS										
a. informational presentations to groups	1	1	1	4						10
b. workshops with community groups										1
c. private meetings with individual stakeholders										15
d. meetings with key interest groups					9					30
1. number of groups met										30
QUESTIONNAIRES										
a. about water quality problems						U		U	U	
b. about water quality goals						U		U	U	
MASS MEDIA										
a. newspaper articles	U	U	U	U	U	U		U	U	
b. radio broadcasts	U	U	U	U	U	U		U	U	
PUBLIC COMMENT ON DRAFT REPORTS							U	U		U
PUBLIC OUTREACH										
a. info. booths/displays	U	U	U	U					U	
b. drop-in centers									U	
c. telephone no. or hot line						U				
d. tours/festivals	U	U	U						U	U

Table 4. (cont.) - Page 2

PUBLIC INVOLVEMENT MECHANISMS		AREAS OF CONCERN											
		Sheboygan Harbour	Milwaukee Harbor	Grand Calumet River ¹	Kalamazoo River	Muskegon Lake ¹	White Lake ¹	Saginaw River/ Bay	Ceiling- Wood Harbour	Severn Sound	Spanish River	Clinton River	
LARGE PUBLIC MEETINGS													
a. to disseminate info		1			U							1	
b. to solicit info									4				1
c. to solicit info with discussion		5	P		6	1	1	1	2	U		1	
SMALLER MEETINGS													
a. informational presentations to groups		10	P		4			6	U	U	U		
b. workshops with community groups								1	1	U			
c. private meetings with individual stakeholders		2.5	U					6	4	U			
d. meetings with key interest groups		12						5		U			
1. number of groups met		6						5					
QUESTIONNAIRES													
a. about water quality problems	U	P						U		U			
b. about water quality goals	U	P						U		U			
MASS MEDIA													
a. newspaper articles	U	U	U					U	U	U			
b. radio broadcasts	U	U	U	U				U	U	U			
PUBLIC COMMENT ON DRAFT REPORTS		U	U	U	U	U	U	U	U	U	U		
PUBLIC OUTREACH													
a. info. booths/displays		U	P					U	U	U	U		
b. drop-in centers		U	P					U	U	U	U		
c. telephone no. or hot line								U	U	U	U		
d. tours/festivals		U						U	U	U	U		

Table 4. (cont.) - Page 3

PUBLIC INVOLVEMENT MECHANISMS		Rouge River	River Raisin	Maumee River	Cuyahoga River	Ashtrabula River	Wheatley Harbour	Buffalo River	Rochester Embayment	Oswego River	Bay of Quinte	Port Hope
LARGE PUBLIC MEETINGS												
a. to disseminate info	U			U			1					2
b. to solicit info		1			1		1	2			1.3	
c. to solicit info with discussion	U	1	U		U		1	2.5		4	1	1
SMALLER MEETINGS												
a. informational presentations to groups	30	U			4	3	U	25	10	2	8	1
b. workshops with community groups					P	2		3		1	1	1
c. private meetings with individual stakeholders	U				U	12			50	12		10
d. meetings with key interest groups	U				10					4		
1. number of groups met					35					14		
QUESTIONNAIRES												
a. about water quality problems	U				P	U	U		U	U	U	
b. about water quality goals	U				U	P	U	U	U	U	U	
MASS MEDIA												
a. newspaper articles	U	U	U	U	U	U	U	U	U	U	U	
b. radio broadcasts	U				U	U		U	U	U	U	
PUBLIC COMMENT ON DRAFT REPORTS		U	U	U				U	U	U	U	U
PUBLIC OUTREACH												
a. info. booths/displays	U				U			U	U	U	U	
b. drop-in centers					U				U		U	
c. telephone no. or hot line									U		U	
d. tours/festivals	U		U	U	U			U			U	

Table 4. (cont.) - Page 4

PUBLIC INVOLVEMENT MECHANISMS	Toronto Waterfront	Hamilton Harbour	St. Marys River	St. Clair River	Detroit River	Niagara River/NY	Niagara River/ONT.	St. Lawrence River/NY	St. Lawrence River/ONT.	Percent AGCS (N=35) ²
LARGE PUBLIC MEETINGS										
a. to disseminate info		1					1			26
b. to solicit info		1				1.5				26
c. to solicit info with discussion	0.5	1	0.75	0.75				P	1	1
SMALLER MEETINGS										
a. informational presentations to groups	0.25	6			0.25			12	9	3
b. workshops with community groups								1	U	29
c. private meetings with individual stakeholders	2.5	4	U	U				U	12	69
d. meetings with key interest groups					3	U		16	12	29
1. number of groups met					3			5	12	
QUESTIONNAIRES										
a. about water quality problems	P	U	U			U		U		46
b. about water quality goals						U				34
MASS MEDIA										
a. newspaper articles	U	U	U	U	U	U	U	U	U	91
b. radio broadcasts	U	U	U		U	U	U	U	U	60
PUBLIC COMMENT ON DRAFT REPORTS										
PUBLIC OUTREACH										
a. info. booths/displays	U	U	U	U	U		U	P	U	57
b. drop-in centers		U	U	U			U	U	U	34
c. telephone no. or hot line			U	U			U	U	U	26
d. tours/festivals	U			U			U			49

¹Lead agencies for six sites did not respond to the mail survey which contained a checklist of public involvement mechanisms. Telephone interviews were used to collect data for these sites. Because these respondents did not have the benefit of the checklist when describing the mechanisms used in their areas, their public involvement programs may be underrepresented in the table.

²Calculated as a percent of mail survey respondents only and considers mechanisms used, but not planned.

involvement program in table 4, it is essential to also consider the Areas' progress in the RAP process in table 2.

Citizen Advisory Committees:

One important public involvement mechanism used in 75 percent of the Areas is a citizens advisory committee (CAC). Ideally, CACs are broadly representative of those who have an interest in the RAP. They commonly include local government officials, industry, environmentalists, and resource users. Known in various jurisdictions as public advisory committees (PACs), basin committees, or stakeholders groups, the IJC contends that such a mechanism is the key to implementing the ecosystem approach in Remedial Action Planning. CACs have the power to "change the traditional way of doing business" and "the level of interaction" in the RAP process (Hartig, et al.1990). The wide-scale use of citizens committees has given public involvement in Remedial Action Planning a certain character on a regional level. This character is reflected in the roles that these committees play in the development of RAPs.

Citizens committees commonly play a variety of roles which may be seen as technically, process, or normatively-oriented (Table 5). Common technical committee roles include reviewing the draft RAP (a function of virtually all committees), assisting the lead agency in the identification of alternative remedial measures, reviewing reports from technical committees, and assessing public opinion. Less than one-quarter of the committees assist the lead agency in writing the RAP while less than one-half assist in developing an environmental data base.

RAP citizens committees are active in the RAP process by assisting with information exchange and building a community constituency that will help to encourage implementation of the RAP. A majority of the citizens committees define the scope of their own activities.

In the normative realm of Remedial Action Planning, citizens committees advise on water use goals and assist in the selection of remedial actions quite frequently. Few of the RAP citizens committees actually select the remedial measures.

The character of public involvement suggested by the function of citizens committees is perhaps best described as collaboration. The committees are active throughout the process, mainly in an advisory capacity. In most cases, they are limited in their power or ability to choose remedial measures for inclusion in the RAP or write the RAP. However, variability in committee roles does exist across the AOCs.

Representation of the Public on RAP Citizens Committees:

Being a major component of public involvement in Remedial Action Planning, citizens committees ought to be examined for their representativeness of stakeholders in

Table 5. Roles of formal RAP citizens committees according to lead agencies for Areas of Concern where such committees have been established (N = 31).

ROLES	% CITIZENS COMMITTEES
<u>Technical</u>	
Review Draft RAP	100
Assist in Identifying Alternative Remedial Measures	87
Review Reports from Technical Committees	77
Assess Public Opinion	74
Assist in Describing Causes of the Pollution Problem	68
Assist in Developing an Environmental Data Base	39
Assist in Writing the RAP	23
<u>Process</u>	
Assist in Information Exchange	87
Build a Community Constituency to Encourage Implementation of the RAP	84
Define the Scope of the Committee's Activities	61
Distribute Committee Agenda to the Public	26
<u>Normative</u>	
Advise on Water Use Goals	97
Assist in the Selection of Preferred Remedial Measures	90
Select Preferred Remedial Measures	23

AOC communities. Various interests are represented on these committees (Table 6).

Local government is represented on all citizens committees. Industry and environmentalists are represented on all but one each. Other interests commonly represented include local business and sport fishing interests. Regional or county planning authorities, local academics and recreational boaters each hold membership in a majority of Areas. Interests which are represented less often include commercial fishing interests, Native North Americans, Cooperative Extension and Sea Grant (in U.S. AOCs), neighborhood groups, and transportation authorities.

It is important to note that some of these interests, such as commercial fishing and Native North Americans, may not exist in certain Areas. Still, some Areas emerge as having notably diverse representation of local interests. Examples include Green Bay and Milwaukee Harbor in Wisconsin; Hamilton Harbour and St. Lawrence River/Cornwall in Ontario; and Maumee River in Ohio. Areas with committees representing the fewest formal interests include two on the northern shore of Lake Superior in Ontario (Jackfish Bay and Peninsula Harbour), Rouge River in Michigan, and Cuyahoga River in Ohio.

RAP citizens committees meet an average of 9.5 times annually. Seventy percent make their decisions through consensus; an additional 20 percent use a majority vote system. Ninety percent of the committees were formed specifically for the RAP process (Table 6).

Training of RAP Citizen Committee Members:

Remedial Action Planning is in many ways a technical process. Citizens committees can improve their effectiveness by possessing a reasonable level of technical competence. The planning process also requires skills and knowledge in non-technical matters such as interpersonal and small group dynamics and the stages of the RAP planning process. RAP coordinators were asked about the types of training opportunities available to RAP citizen committee members. Of the 31 formal committees across the Basin, the majority were given training information about the RAP development process and technical aspects of the pollution problem. Two-thirds of the committees have been offered training information that included the activities of other citizens committees in the Basin. Over half have actually met with committee members from other AOCs. Only three percent have had training in interpersonal and small group skills (Table 7). This void suggests a potential need for a facilitator of these skills in the AOCs.

Written Information Distributed to Public Audiences:

Government agencies develop and distribute written information about many of their programs in order to keep public audiences informed of their activities. When public involvement is considered an essential element of a government program, a certain amount of written information about the program is expected. Coordinators were asked about the types of written information regarding RAPs that have been distributed to the

Table 6. Representation on RAP citizens committees, frequency of meetings, and reason for formation (N = 32).

AREAS OF CONCERN WITH CITIZENS COMMITTEES

Potential Stakeholders	Peninsula Harbour	Jackfish Bay	Nipigon Bay	Thunder Bay	St. Louis River/Bay	Menominee River	Fox River/Green Bay	Sheboygan Harbor	Milwaukee Harbor	Grand Calumet
Local Government	X	X	X	X	X	X	X	X	X	X
Industry		X	X	X	X	X	X	X	X	X
Environmental Groups	X				X	X	X	X	X	X
Local Business	X			X	X	X	X	X	X	X
Sport Fishing	X	X	X	X	X	X	X	X	X	X
Regional or County Planning Authorities			X		X	X	X	X	X	X
Recreational Boaters			X		X	X	X	X	X	X
Local Academia					X	X	X	X	X	X
Fisheries Management Agencies					X	X	X	X	X	X
Unaffiliated Individuals					X	X	X	X	X	X
Civic Groups	X				X	X	X	X	X	X
Labor Organizations						X	X	X	X	X
Agriculture						X	X	X	X	X
Other Recreational Users	X	X	X			X	X	X	X	X
Commercial Fishing		X		X		X	X	X	X	X
Native North Americans		X		X		X	X	X	X	X
Cooperative Extension					X		X	X	X	X
Sea Grant Extension						X		X		
Neighborhood Groups								X	X	X
Transportation Authorities								X		
MEETINGS/YEAR ¹	11	11	11	9	12	10	10	13.5	12	12
Group Established for the RAP	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES

Table 6. (Cont.) - Page 2.

Potential Stakeholders	Saginaw River/Bay	Collingwood Harbour	Severn Sound	Spanish River	Rouge River	Maumee River	Cuyahoga River	Ashtabula River	Buffalo River	Rochester Embayment	Oswego River	Bay of Quinte
Local Government	X	X	X	X	X	X	X	X	X	X	X	X
Industry		X	X	X	X	X	X	X	X	X	X	X
Environmental Groups	X	X	X	X	X	X	X	X	X	X	X	X
Local Business	X	X	X	X	X	X	X	X	X	X	X	X
Sport Fishing	X	X	X	X	X	X	X	X	X	X	X	X
Regional or County Planning Authorities	X	X	X	X	X	X	X	X	X	X	X	X
Recreational Boaters	X	X	X	X	X	X	X	X	X	X	X	X
Local Academia	X	X	X	X	X	X	X	X	X	X	X	X
Fisheries Management Agencies		X	X	X	X	X	X	X	X	X	X	X
Unaffiliated Individuals	X	X	X	X	X	X	X	X	X	X	X	X
Civic Groups			X	X	X	X	X	X	X	X	X	X
Labor Organizations		X	X	X	X	X	X	X	X	X	X	X
Agriculture	X	X	X	X	X	X	X	X	X	X	X	X
Other Recreational Users			X	X	X	X	X	X	X	X	X	X
Commercial Fishing	X			X	X	X	X	X	X	X	X	X
Native North Americans				X								X
Cooperative Extension	X				X							
Sea Grant Extension					X		X					
Neighborhood Groups						X		X				
Transportation Authorities							X		X			
MEETINGS/YEAR ¹	4	3.5	12	12	3	5	10	6	12	2	12	10
Group Established for the RAP	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES	YES

Potential Stakeholders	Port Hope ²	Toronto Waterfront	Hamilton Harbour	St. Marys River	St. Clair River	Detroit River	Niagara R./NY	Niagara R./ONT	St. Lawrence R./NY	St. Lawrence R./ONT	% AOC'S
Local Government	X	X	X	X	X	X	X	X	X	X	100
Industry	X		X	X	X	X	X	X	X	X	94
Environmental Groups	X	X	X	X	X	X	X	X	X	X	94
Local Business			X	X	X	X	X	X	X	X	91
Sport Fishing	X		X	X	X	X	X	X	X	X	88
Regional or County Planning Authorities			X	X	X	X	X	X	X	X	75
Recreational Boaters	X	X	X	X	X	X	X	X	X	X	66
Local Academia	X	X	X	X	X	X	X	X	X	X	66
Fisheries Management Agencies			X	X	X	X	X	X	X	X	63
Unaffiliated Individuals	X	X	X	X	X	X	X	X	X	X	59
Civic Groups			X	X	X	X	X	X	X	X	53
Labor Organizations			X	X	X	X	X	X	X	X	47
Agriculture			X	X	X	X	X	X	X	X	44
Other Recreational Users	X	X				X			X	X	44
Commercial Fishing			X	X							38
Native North Americans			X	X	X			X	X	X	34
Cooperative Extension								X			32 ³
Sea Grant Extension								X			32 ³
Neighborhood Groups		X	X								25
Transportation Authorities				X					X		22
MEETINGS/YEAR ¹		12	2.5	12	12	8	9	12	12	12	X = 9.5
Group Established for the RAP		YES	YES	YES	YES	YES	YES	YES	YES	YES	90% = Yes

¹If a range was reported, a mean was calculated.²Port Hope Harbour has an informal citizens committee.³Includes U.S. and International sites with citizens committees only; Canadian sites were omitted (N=19).

Table 7. Training provided to members of formal RAP citizens committees (N = 31).

TRAINING INFORMATION	% RAP CITIZENS COMMITTEES
RAP Development Process	91
Technical Aspects of Pollution Problems in the AOC	81
Activities of Other Citizens Committees in Other Areas of Concern	66
Small Group and Interpersonal Skills	3
TRAINING ACTIVITIES	% RAP CITIZENS COMMITTEES
Meetings with Technical Lead Agency Staff	75
Meetings with Citizens Committee Members From Other AOCs	59
Meetings with RAP Writing Team	38

public in the AOCs to date (Table 8). These are classified as either technical or process information.

A description of the local environmental conditions is the most commonly distributed piece of technical information in the AOCs. Descriptions of the pollutant sources, draft RAP reports, and possible water use goals are distributed less often. Descriptions of possible remedial measures are distributed least frequently.

Various types of process information are distributed in the majority of AOCs. A description of the stages of the RAP process is distributed in most of the AOCs. Lists of contacts in the lead agency, descriptions of specific public involvement activities, status reports, and, in those Areas with RAP citizens committees, the content of committee meetings are distributed in about three-quarters of the Areas. Distributed in fewer Areas are lists of contacts in the community who have expressed an interest in the RAP.

Public Notification of Participation Opportunities:

Even the most sincere attempts to include the public in environmental planning and management can founder if the public fails to recognize an opportunity to participate. In addition, government agencies can plan an extensive participation program while actually minimizing involvement by failing to adequately inform the public about the program. RAP coordinators were asked about a variety of public notification methods for public involvement opportunities. Lead agencies have relied most heavily on mass media announcements (newspaper, radio, or television) to advertise public involvement activities (Table 9). Other broad-based exposure approaches such as bulk mailings, notices posted in public places, and announcements at public forums were used in fewer Areas.

Several agencies targeted audiences for participation. Letters of notification sent to stakeholders and notices sent to those on an agency mailing list were common to many Areas. More personalized approaches such as telephone calls to stakeholders were used in about one-half of the Areas.

These data indicate that almost every lead agency has attempted to reach the general public via the mass media, and that other efforts have been aimed at specific groups and individuals. There is some evidence that personalized approaches (like telephone calls) have been used in fewer Areas than less personalized approaches (like mailings). Whether or not all important stakeholders in the AOCs have been reached depends in part on the efficacy of these methods as well as the comprehensiveness of the agency (mailing or stakeholder contact) lists.

Remedial Action Planning Writing Teams:

The group of individuals helping to write the RAP may be referred to as the RAP

Table 8. Types of written information distributed to public audiences to date according to lead agencies¹ (N = 41).

TECHNICAL INFORMATION ABOUT:	% AREAS OF CONCERN
Environmental Conditions in the AOC	93
Pollution Sources	68
Possible Water Use Goals	54
Possible Remediation Measures	39
Draft RAP Reports	66
PROCESS INFORMATION ABOUT:	% AREAS OF CONCERN
Stages of the RAP Development Process	90
Contacts or Resource People in the Lead Agency	78
Specific Public Involvement Opportunities	76
Content of Citizen Committee Meetings	74 ²
Status Reports on the RAP Development Process	71
Contacts in the Community who have Expressed Interest in the RAP	37

¹ RAPs are in various development stages across the Great Lakes Basin (see Table 2). Therefore, the percentages reported here are likely to change, especially as those RAPs now in the early development stages advance through the process.

² Calculated as the percent of those AOCs with formal citizens committees (N = 31).

Table 9. Means of public notification of public involvement opportunities as reported by lead agencies (N = 41).

NOTIFICATION METHOD	% AREAS OF CONCERN
Mass Media Announcements (newspaper, radio, television)	95
Letters to Stakeholders	76
Notice Sent to Those on Agency Mailing List	68
Telephone Calls to Stakeholders	56
Announcements at Public Forums	46
Posted Notices in Public Places	37
Bulk Mailings to AOC Residents	29

Table 10. Composition of RAP writing teams according to lead agencies (N = 41).

INCLUDED ON WRITING TEAM	% AREAS OF CONCERN
RAP Coordinator	85
Personnel from Lead Agency	71
Personnel from Other Agencies	44
Technical Consultant	27
Citizens Committee	23 ¹
Technical Committee	12

¹ Calculated as percent of those AOCs with formal citizens committees (N = 31).

writing team. The composition of this team is important because, despite any provision for public review of a plan, many subtle but potentially important decisions about the document are made during this production stage as appropriate wording and emphases are selected. The tone of the document is given in large part by its authors.

RAP coordinators reported that they contribute to the writing of the RAP in 85 percent of the AOCs (Table 10). Other staff members from the lead agency assist in many of the Areas. In less than half of the cases, personnel from other agencies help write the RAP. Fewer Areas use a technical consultant or committee or the RAP citizens committee. The predominant influence in the writing of RAPs is the lead agency. In several Areas, that influence is shared by other agencies. In few cases (N=7), it is shared with a RAP citizens committee.

Professional Background of Agency Staff Members Assigned to Develop the RAPs:

RAP coordinators in lead and assisting planning agencies were asked to report the professional background of the various individuals in their agencies working (either full or part-time) on RAP development. Categories of professions were derived from their responses, and percentages were calculated for the AOCs (Table 11). Biologists (including wildlife, fisheries, or aquatic specialists) are on staff in over half of the AOCs. Engineers (environmental, sanitary, solid waste, air quality, or regional specialists) are the next most prevalent group. Communications experts are committed either full or part-time to the RAP in a third of the Areas, while planners (including geographers and policy analysts) and administrators (or supervisors) are committed in roughly one-quarter of the Areas.

Involved in RAP development in fewer AOCs are physical scientists (including limnologists), natural resource managers, ecotoxicologists, and chemists. Coordinators in one-fifth of the Areas reported that individuals with unspecified scientific backgrounds were also assigned to the RAP program.

These data indicate that technical persons are chiefly involved in RAP development. It is encouraging that communications experts are being used in one-third of the Areas. Given a program coveting public involvement, however, this percentage could be expected to be higher. Some Canadian RAP coordinators reported being able to use communications resources within the Communications Branch of Ontario Ministry of the Environment and Environment Canada in Toronto.

Contextual Factors in RAP Development:

Community Experience in Public Involvement:

In 39 out of 41 AOCs preparing RAPs, coordinators from lead and assisting agencies reported that public involvement programs other than that for the RAP have

Table 11. Professional background of lead and assisting agency staff members assigned to RAP development (N = 41).

PROFESSIONAL BACKGROUND	% AREAS OF CONCERN
Biologist	61
Engineer	49
Communications	32
Planner	29
Administrator	24
Scientist, unspecified specialty	20
Physical Scientist	12
Technical Writer	10
Natural Resource Manager	5
Ecotoxicologist	5
Chemist	5

recently occurred, or are occurring. This suggests that AOC communities have a degree of public involvement experience. Coordinators were asked about the types of issues for which there have been public involvement activities. Response categories were constructed for these issues and the percentage of AOCs with lead or assisting agency coordinators mentioning them were calculated (Table 12).

About half of the AOCs have experienced some form of public involvement in water resources planning (including 208 and basin planning). Over a third reported public involvement associated with regulatory issues (including issuance of discharge permits and control orders). About one-quarter of the sites reported public involvement in municipal sewage treatment improvement and community or regional planning efforts (such as transportation planning, economic development and tourism and recreation planning). Almost one-fifth of the Areas have experienced involvement in wildlife or habitat planning and the environmental impact assessment process (called environmental assessment procedures in Canada). Few AOC communities have been involved in solid waste issues (such as landfill or incinerator siting). About one-fifth of the Areas have multi-issue public councils or commissions which advise or facilitate decision making on a range of public issues.

Public Involvement in RAPs as a New Way of Doing Business:

In 30 of the 39 Areas for which RAP coordinators reported other recent or existing public involvement programs, it was also reported that public involvement in the RAP process is significantly different from traditional public involvement programs experienced in these communities. The biggest difference, mentioned by coordinators in a majority of these Areas, lies in the extent of public input into the planning process (Table 13). According to these coordinators, the RAP process is marked by greater dialogue between the agency and stakeholders. In addition, stakeholders have more control in the RAP process than they do in other programs. Several coordinators mentioned that other public involvement programs are limited to public comment on planning decisions. This was contrasted with the RAP process where, in one case, the lead agency has "a continuous dialogue going with core representatives" and, in another, the citizens committee was called the "governing body of the RAP process".

Coordinators in over one-third of these Areas mentioned that greater public education and information efforts are being pursued for RAPs as compared to other public involvement programs. For instance, the lead agency for Areas along the northern shore of Lake Superior has hired a marketing firm for the first time to develop a program logo and to help promote the RAP process. Others reported distributing more educational materials in this program than are traditionally distributed.

More cooperative partnerships between the planning agency(ies) and community groups were mentioned by about one-quarter of the coordinators. As one RAP coordinator said, "This process is not confrontational. The public doesn't have to beat

Table 12. Community experience in public involvement in environmental matters. Includes only those sites where lead or assisting agencies reported that public involvement programs in addition to that for the RAP exist or have existed recently in the Area of Concern (N = 39).

TYPE OF ISSUE OR ACTIVITY AND SPECIFIC EXAMPLES	% AREAS OF CONCERN
<i>Water Resources Planning</i> (Nonpoint source pollutants, toxicants, dredging and open lake disposal, 208 and Basin plans)	44
<i>Regulatory Issues</i> (control orders, discharge permit and regulation reviews)	36
<i>Hazardous Waste Management</i> (Superfund cleanup, siting facilities, low-level radioactive waste management)	36
<i>Municipal Sewage Treatment</i> (treatment plant planning and construction, combined sewer overflow (CSO) abatement)	26
<i>Community/Regional Planning</i> (transportation, waterfront development, tourism and recreation planning)	26
<i>Multi-Issue Public Involvement Programs</i> (long-term public councils or commissions set up to advise or facilitate decision-making on a range of public issues)	21
<i>Environmental Impact Assessment</i> (called Environmental Assessment in Canada)	18
<i>Habitat and Wildlife Planning</i> (fisheries, wetlands, forestry, and wildlife)	18
<i>Solid Waste Management</i> (landfill siting or expansion, incinerator siting, recycling)	13

Table 13. Characteristics of public involvement in the RAP process which are notably different from other local public involvement strategies. Includes Areas of Concern where lead and assisting agencies claim that the RAP process represents a break from traditional public involvement strategies (N = 30).

NEW CHARACTERISTICS	% AREAS OF CONCERN
Extent of Input: More Citizen Control and Greater Dialogue	57
Greater Information and Education Efforts	37
More Cooperative Partnerships Between Agencies and Public Groups	27
Larger-scale: Longer-term Involvement Addressing Broader Issues	20
Timing: Earlier and Continuous	17
Broader Representation of Stakeholders	13
More Emphasis on Local Ownership of the Plan	10
Greater International Involvement	7

its way in."

Involvement in the RAP process is larger-scale, with longer-term involvement addressing a range of issues in one-fifth of the Areas. Other programs, coordinators explain, focus on short-term involvement for site-specific or single issues. Almost one-fifth of the coordinators mentioned that the timing of involvement is earlier in the RAP process.

While there is no clear consensus among the 30 Areas which report that the RAP program is different from traditional programs, the sum of the coordinators' explanations suggests that the RAP process is more open to the public and that public input is more integral to the whole of the planning process. In the words of the River Raisin coordinator who compared the RAP process to public involvement activities for Michigan's state-level Superfund sites (also called 307 sites):

"Other activities are more agency driven, more informative. Agencies take comments for 307 sites. There's not a lot of public input in this process. It's very technical and site specific. People are involved late in the process. With the RAP, we talked to people early, tried to keep contact throughout, and have them have input into decisions."

The Spanish River coordinator explained,

"The RAP is the first real public consultation effort. For control orders, we basically rent a room and buy coffee."

Severn Sound's coordinator mentioned,

It's the first MOE process where the public is actually responding positively to the opportunity. They feel they're being heard.

Contextual Factors of the AOCs Affecting Public Involvement in RAPs:

The view that public involvement is essential to Remedial Action Planning is applied uniformly across the AOCs by the IJC. At the same time, the diversity of AOCs affects the potential for public involvement in RAP development. The IJC recognizes that different approaches to public involvement may be more or less successful in different Areas. RAP coordinators were asked open-ended questions in telephone interviews about their perceptions (based on their personal experiences in the AOCs) of local contextual factors which positively and negatively affect public involvement in RAPs. Categories were constructed for their responses (Table 14). Occasionally, a RAP coordinator mentioned that a contextual factor was both beneficial in some ways and a liability in others; in these cases, the contextual factor was coded as both positive and negative for that particular

AOC.

Contextual factors related to **stakeholder dynamics** affect public involvement in many Areas. One such factor, labelled the interaction of diverse interests, involves the degree of balance and conflict or cooperation among participating parties. It also entails the posture particular parties assume in the process. A negative example of this factor was offered by one of the coordinators for the Minnesota/Wisconsin St. Louis River RAP: "The process is perceived as being Duluth-oriented. There's some rivalry. They [the citizens committee] don't have as much representation as they'd like from Wisconsin." In another AOC the coordinator mentioned that a problem lies in the "zealousness of local environmental concerns. There is a heavier proportion of environmental concerns on the CAC [citizens advisory committee] than commercial interests. The CAC is not balanced. Because of this, its ignored. There are polarized views with no middle ground." Another said of the participants, "People are interested in single issues. We had a problem with people not interested in each other's issues."

On the positive side, one coordinator said, "The participants worked well together and got things done." Another claimed that "the diverse community makes the process richer."

Jurisdictional complexity is another factor related to stakeholder dynamics. Most coordinators citing this factor perceive it as having a negative influence on public involvement. In international AOCs (such as the Detroit, St. Clair and St. Marys Rivers between Michigan and Ontario), one coordinator states that obtaining consensus among a number of jurisdictions is difficult. Another explains that friction occurs when lead and assisting agencies have different styles and directives: "In the Canadian view, the public decides issues. In MDNR [Michigan Department of Natural Resources], there is a clear mandate. DNR is responsible for the plan." Only in the St. Louis River RAP did a coordinator claim that broadened perspectives and additional resources provided by having two agencies involved outweigh the difficulties of multiple jurisdictions.

Public orientation toward water quality problems in the AOC is another factor influencing public involvement in Remedial Action Planning. This factor was broken down into three areas: 1) the level of public awareness about the pollution problem(s) in the AOCs; 2) public interest in, or support for, solving the problem(s); 3) and the public outlook on cleanup based upon the community's track record for water quality improvements.

For example, a Michigan Department of Natural Resources coordinator for two Upper Peninsula Areas described the local perception that no significant water quality problem exists. This has impeded public involvement in these Areas which has been essentially limited to a comment period for the draft RAPs. In Indiana, coordinator for the Grand Calumet/Indiana Harbor RAP reported that the AOC residents of South Chicago lack hope for cleanup. He claimed, "The AOC has been used as a heavily industrialized

area for the past 100 years. The residents have grown up with it like that. The community doesn't believe change can occur."

On the positive side, several RAP coordinators reported that high levels of public awareness of water quality problems, and/or interest and commitment to solving those problems, have benefitted the public involvement process. This is the case in two western Michigan AOCs, White and Muskegon Lakes, according to one MDNR coordinator. He claimed, "There's awareness in those Areas. People have had to deal with environmental issues since the early '70's. The locals have already supported a municipal sewage treatment improvement." Ohio Environmental Protection Agency coordinators for the Cuyahoga and Ashtabula Rivers AOCs say tangible progress in water quality improvements has people hopeful about what can happen in the future. The same was said for Wheatley Harbour, Ontario. The coordinator explained, "There is a feeling that improvements have been made. People who have been here for 15 years know it's improved."

Local economic factors were mentioned by coordinators as affecting public involvement in two-thirds of the AOCs. Those citing the local economy as a negative factor claimed reliance on single industries as problematic. Perceived threats to employment inhibit public involvement in a governmental program which may ultimately place responsibility for cleanup on local industry. The coordinator for New York's Oswego River RAP sees the local economic situation as negatively affecting public involvement in a different way. According to her, the Oswego River and Harbor resource is seen as an economic asset due to sport fishing and tourism. Although clean water is compatible with these resource uses, local officials are paradoxically "hesitant to raise the profile of pollution problems, especially since they don't think there is money to solve them."

The RAP coordinators who claim that local economic factors hinder public involvement come from diverse AOCs including two large metropolitan areas. Yet the majority represent Areas with relatively small and isolated communities that are more rural in character.

In other AOCs, communities are attempting to rebuild economies long- depressed by industrial decline in the Great Lakes Basin. In places such as Duluth, Minnesota (St. Louis River RAP) and Ashtabula, Ohio (Ashtabula River RAP) improvements in water quality are seen as beneficial to future economic development resting on waterfront revitalization.

A fourth set of factors affecting public involvement in the RAP process deals with **credibility**, of both the lead and assisting planning agencies, and of the RAP process itself. Coordinators representing eight Areas suggested that the agency's credibility was lacking in AOC communities. Coordinators from six AOCs claimed that a positive agency image and/or a high level of local trust in the agency facilitated the public involvement

process. In four Areas along Lake Superior, a coordinator claimed the agency's (MOE) image was poor at first, but that trust had been built through the process. This coordinator also credited the openness of the RAP process for contributing to its own credibility, thereby encouraging public involvement in these Areas. Others, however, suggested that participation has been hampered by stakeholders who perceive the RAP process is too slow. As the coordinator for Ontario's Niagara River RAP revealed, "The public feels it has been dealing with environmental problems forever. They are frustrated and outspoken. They want to move right ahead and do something rather than following the process." Provincialism can also affect credibility. As the coordinator for the Sheboygan Harbor, Wisconsin RAP claimed, "Sheboygan is a small community. It was hard to introduce a new process there."

Other local factors encouraging or discouraging public involvement in the RAP process as mentioned by RAP coordinators include: 1) the **availability of technical information** and data about the pollution problem(s); 2) the level of **experience** in technical problem solving held by the **local leadership**; 3) **logistical matters**, such as funding for public involvement activities, transportation to meeting places and accommodating large numbers of people involved; 4) the **sense of local ownership** of the resource, or the level of resource use; 5) **communication** factors such as media attention, the existence of social networks by which people exchange information, and the planning agency's communication strategy; 6) the **scope** of both the environmental problem and the RAP process in the AOC.

With regard to these factors, public involvement was generally benefitted by the presence of: 1) completed studies and reports about pollutant sources and effects; 2) experienced leadership; 3) geographically condensed Areas with concentrated populations (as opposed to dispersed pockets of people); 4) high resource use and a sense of pride in the resource; 5) positive media attention and established networks or forums in the community for information exchange, helped in some Areas by organizations committed to information exchange on public issues; 6) a definable environmental problem with known point sources and a RAP process restricted to address a specific geographic area and set of water quality problems. On the latter point, some coordinators claim that some stakeholders try to expand the process to incorporate peripheral or related issues, thus encumbering the process.

Once the "context of public involvement" is examined for the 42 AOCs, its complexity becomes apparent. These contextual characteristics can be used to better understand a particular AOC of interest. They also provide a framework for thinking about limitations to and potentialities for public involvement in water resources planning in other communities. However, it must be reiterated that these contextual factors are those perceived important by RAP coordinators in lead and assisting planning agencies; others in AOC communities may perceive these factors differently.

Table 14. Positive and negative contextual characteristics affecting public involvement in RAPs as cited by lead agencies (N=41).

CONTEXTUAL CHARACTERISTICS	NEGATIVE CONTRIBUTION		POSITIVE CONTRIBUTION	
	# SITES	SPECIFIC AREAS OF CONCERN	# SITES	SPECIFIC AREAS OF CONCERN
CREDIBILITY				
Lead Agency	12	1,2,3,4,11,14,21,27,28,30,40,42A	10	1,2,3,4,11,19,20,25,35,40
RAP Process	6	11,14,20,35,38,41B	5	1,2,3,4,19
PUBLIC ORIENTATION				
Awareness of the Problem	9	6,7,8,9,22,32,33,40,41A	10	12,16,17,25,27,28,29,35,39,41B
Interest in Solving the Problem	7	5,6,7,21,29,33,42A	14	5,10,11,12,18,21,22,23,24,25,27,28,36,37
Outlook on Prospects for Cleanup	3	14,23,41B	9	10,14,16,17,27,28,29,39,40
LOCAL OWNERSHIP OF THE RESOURCE	7	1,18,21,22,24,29,40	5	5,10,15,23,30
STAKEHOLDER DYNAMICS				
Interaction of Diverse Interests	17	5,9,10,11,17,20,21,22,24,27,33,36,39,40,41B,42A,42B	5	5,10,12,17,34
Jurisdictional Complexity	12	9,11,18,20,21,27,37,39,40,41A,41B,42B	1	5
ECONOMIC CONCERNS				
Industrial Economic Base/ Employment	14	1,2,3,4,5,8,9,10,21,23,29,33,37,42A	4	6,19,30,39
Community Revitalization			10	11,16,17,19,20,22,23,27,28,37
EXPERIENCED LOCAL LEADERSHIP	2	9,10	15	5,10,12,14,15,16,17,18,24,25,30,33,36,40,42B

Table 14 (cont.) -- Page 2

CONTEXTUAL CHARACTERISTICS	NEGATIVE CONTRIBUTION		POSITIVE CONTRIBUTION	
	# SITES	SPECIFIC AREAS OF CONCERN	# SITES	SPECIFIC AREAS OF CONCERN
AVAILABILITY OF TECHNICAL INFORMATION & EXPERTISE	6	1,2,3,4,28,29	9	1,2,3,4,18,28,32,33,39
LOGISTICS	8	12,18,20,27,32,40,41A,42B	5	16,17,20,21,40
SCOPE				
Environmental Problem	4	18,28,37,40	7	1,2,3,4,8,9,24
RAP Process	3	25,27,41B		
COMMUNICATIONS				
Local Social Networks			7	10,11,19,20,25,34,35
Media Attention			6	9,15,16,17,23,34
Agency's Information Strategy			3	16,17,35

SUMMARY:

Remedial Action Planning is in various stages of completion across the Great Lakes Basin. Public involvement in the process varies considerably, but is marked by the use of citizens advisory committees in 75% of the AOCs for which RAPs are being developed. Lead agency goals for public involvement emphasize practical matters such as building public support for the implementation of RAPs. These goals reflect the IJC's argument that public involvement is essential to building political will and support for the cleanup of AOCs. While citizen advisory committees have influence throughout the RAP process, agency personnel in most cases have retained control over the writing of the RAP. It is significant, though, that in seven sites, citizens committees have a hand in writing the RAP.

Training provided to RAP citizen committee members has not included interpersonal and small group skills. It has generally included background information on technical aspects of the local pollution problems as well as the stages of the Remedial Action Planning process. Some committees have had the benefit of information exchanges with other RAP citizens committees. This, however, could be expanded to include more or all RAP citizens committees.

Issues of representation of RAP citizens committees may exist in some AOCs. Stakeholders which hold membership on every or nearly every committee include local governments, industry, environmental groups, local businesses and sport fishing enthusiasts. Decisions are most commonly made by consensus among RAP committees. They meet an average of 9.5 times per year.

Other mechanisms used to involve the public in Remedial Action Planning have generally emphasized interactive methods characterized by dialogue over more traditional methods like the standard public hearing or public comment period. Mass media have also been used in nearly all Areas to disseminate information about water quality problems and/or the RAP process. In general, agencies seem to be attempting to raise public awareness and knowledge about Remedial Action Planning as one component of public involvement. Notification about public involvement activities has been aimed at the general citizenry in AOCs through the mass media and to target audiences primarily through letters and mailings. Just over half the agencies have used a more personalized approach via telephone calls to stakeholders.

Lead agencies have distributed written technical and process-oriented information to public audiences. Emphasis, however, has been on process-oriented materials. One exception is lists of community contacts that have shown an interest in the RAP. Such a list could facilitate communications among stakeholders.

Agency staff committed to RAP development have mainly scientific backgrounds, most often in biology and engineering. Communications experts are committed to RAP

development in approximately one-third of the Areas.

Most RAP coordinators believe public involvement in Remedial Action Planning represents a break from traditional means of involving citizens in community problem solving. The process is considered an open one with more extensive public involvement throughout the various planning stages. Local characteristics influence public involvement in positive and negative ways. The interplay of diverse interests and jurisdictions, local economic factors, and the public outlook on local water quality problems are the most important factors across the Basin.

This study has made possible certain generalizations about Remedial Action Planning. It also reveals that local experiences in this program are variable. The initial comparative information about the AOCs provided here can be used as a rational basis from which to conduct further case study research.

SOURCES CITED:

Hartig, J.H. and R.L. Thomas. 1988. Development of plans to restore degraded areas in the Great Lakes. *Environmental Management* 12:327-347.

Hartig, J.H. , et al. 1990. Successes and challenges in developing and implementing Remedial Action Plans to restore degraded areas in the Great Lakes. *International and transboundary water resources issues*. American Water Resources Association. April:269-278.

International Joint Commission. 1989. Report on Great Lakes Water Quality: Appendix A. Great Lakes Water Quality Board, Windsor, Ontario, Canada.

ACKNOWLEDGMENTS:

Financial support for this project was provided by the New York Sea Grant Extension/College of Agriculture and Life Sciences Applied Research Program and the Max and Victoria Drefus Foundation, Inc. We thank Kristine Marsh for assistance in preparing this report.