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MA Thesis in Geography

**MUNICIPAL CAPACITY TO
IMPLEMENT AN ECOSYSTEM APPROACH
IN COASTAL ZONE MANAGEMENT,
ST. LAWRENCE RIVER BASIN, NEW YORK STATE**

by David Burhoe

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the University of Ottawa
in fulfilment of the thesis requirements
for the degree of
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in Geography

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ABSTRACT

This MA thesis is a contemporary look at rural municipal planning and management in St. Lawrence and Jefferson counties, Upper New York State. The Great Lakes-St. Lawrence River basin, since 1972, has been subject to binational agreements and federal and state legislation for the protection and development of its coastal resources. Many were enacted because state and local institutional arrangements for planning and regulating land and water uses for coastal areas were judged inadequate. A number of elements contribute to institutional complexity and affect municipal planning and management capacity. In the North Country, these include the influence of the State's constitutional Home Rule provisions, the lack of state-wide planning law, and the division of planning authority among the state, city, town and village levels of decision making. This capacity has been further challenged since 1995 by senior government's so-called "3d's policy." The International Joint Commission (IJC) proposes an ecosystem approach as part of the decision-making process both lake-wide and locally to address many of these concerns. The IJC is mandated by both federal governments, through the Great Lakes Water Quality Agreement, to investigate binational concerns throughout the basin. The present research uses a combination of quantitative and qualitative methods to assess definitional clarity of the ecosystem approach and the capacity of local governments to facilitate usage of this approach in the planning and management of its coastal resources. Interviews conducted with planners and managers in upper New York State reveal that the perceptions, attitudes and values of 'stakeholders' involved in decision making in coastal municipalities have a large bearing on the implementation of measures for resource protection and development. While the IJC's ecosystem approach fosters 'stakeholder' involvement in decision making, definitional clarity for its comprehension and usage by municipal decision makers remains insufficient. Municipal planners and managers express the need for assistance and/or mechanisms whereby normative concepts and policy can be translated into practical measures. They also express concern that economic development takes precedence over planning functions for land and water resource conservation. Research identifies "bridging mechanisms", or innovative institutional approaches, that exist within the study area and which have demonstrated their contribution to planning and management capacity-building and support, and the inclusion of elements of an ecosystem approach. It proposes a typology of these mechanisms and presents two case studies, the Tug Hill Commission and Local Government Conferences, whose institutional structure and characteristics account for their achievements and contributions to municipal capacity building. Bridging mechanisms complement the municipal decision-making framework with key attributes that are lacking in that framework but are components of an ecosystem approach. These include a rich human resources pool possessing technical and/or informational skills, a participatory and communicative program position, a locally-driven agenda, and an extremely positive outlook. The research addresses recommendations to three key stakeholders in the New York coastal zone that should be championing the ecosystem approach: the International Joint Commission, the rural municipalities in the Great Lakes-St. Lawrence River basin, and partnerships and institutional bridging mechanisms.

RÉSUMÉ

Cette recherche est un regard contemporain sur les processus de planification et de la prise de décisions au palier municipal d'un échantillon de divers types de municipalités rurales et côtières dans deux comtés, St. Lawrence et Jefferson, de la région du nord de l'état de New York. Ces municipalités, en faisant partie du bassin des Grands lacs-fleuve St. Laurent, sont, depuis 1972, assujetties à un Accord bi-national ainsi qu'à de nombreux statuts et lois, tant fédéraux que des états voisins. Axés sur la protection, et le développement des ressources côtières, cet Accord et ces statuts ont été mis en place parce que la structure et le fonctionnement des institutions locales et de l'état pour la planification et la réglementation de l'utilisation des terres et des ressources en eau, étaient jugées inadéquates. Parmi ces éléments qui, pendant ces dernières 25 années, ont le plus d'impact sur la capacité municipale pour la planification et la prise de décisions, et en même temps, contribuent à augmenter la complexité institutionnelle, figurent : les sections (Home Rule) de la Constitution de l'État qui accordent le pouvoir aux municipalités; l'absence d'une loi sur la planification à l'échelle de l'État; et le morcellement de la prise de décisions pour la planification parmi les différents paliers de gouvernance - l'état, la ville, le village et le canton. De plus, cette capacité a dû faire face, depuis 1995, à une politique appelée "3Ds" (en anglais, downsizing, devolution, and deregulation) ou la diminution, la restructuration et l'amolissement des règlements. La Commission mixte internationale (CMI) propose une approche de gouvernance appelée une "approche écosystémique" tant à l'échelle du lac entier qu'à l'échelle locale afin de surmonter ces problèmes. Un mandat est accordé à la CMI par les deux gouvernements fédéraux dans l'Accord sur la qualité des eaux dans les grands lacs pour faire une étude des questions jugées inquiétantes par les deux nations. L'étude actuelle démontre l'application d'une combinaison de méthodes qualitatives et quantitatives de recherche afin d'analyser si l'approche écosystémique a été suffisamment bien définie et si la capacité pour sa mise en application dans la planification et la gestion des ressources par les municipalités de la zone littorale est adéquate. Des entrevues menées auprès des urbanistes et preneurs de décisions du côté New yorkais du fleuve démontrent que les perceptions, attitudes et valeurs de divers groupes qui partagent un intérêt à l'égard de ces ressources, exercent une influence importante quant à la mise en application de mesures pour la protection et le développement de ressources. Bien que l'approche écosystémique proposée par la CMI encourage fortement l'implication des divers groupes d'intérêt dans la prise de décisions, jusqu'en 1999, une clarté suffisante pour sa mise en application par les preneurs de décision municipaux manque. Les responsables municipaux d'urbanisme et de prise de décisions ressent le besoin d'assistance et/ou de mécanismes par lesquels les concepts et les politiques peuvent être traduits en mesures pratiques. Ils s'inquiètent aussi que le développement économique ne s'associe pas aux fonctions de planification pour la conservation et l'utilisation saine des ressources en eau et en terre. Cette recherche identifie, cependant, de nombreux "mécanismes-pont" déjà existants au palier municipal qui servent à introduire des méthodes institutionnelles innovatrices et à renforcer la capacité municipale d'utiliser l'approche écosystémique. Elle regroupe ces "mécanismes-pont" selon leur structure institutionnelle et les qualités qui contribuent aux succès réalisés. Deux exemples, dont la Commission de Tug Hill et son programme de "Coureurs de circuit" et les Local Government Conférences sont présentés ainsi que leurs traits et caractères signifiants. Ces mécanismes complètent le cadre municipal de la prise de décisions en ajoutant des éléments qui

manquent dans ce cadre mais qui aussi font partie des composants de l'approche écosystémique. Parmi ces composants se trouvent : un réservoir rich en ressources humaines possédant des habiletés techniques et/ou informationnelles, une approche participatoire et communicative aux programmes, une agenda locale, et une perspective très positive. La recherche s'adresse à trois groupes d'intérêt impliqués dans la zone littorale de New York - trois groupes qui devrait être champions de l'approche écosystémique : la Commission mixte internationale, les municipalités rurales dans le bassin des Grands lacs-fleuve St. Laurent, et les partenaires et mécanismes-pont.

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And finally, I wish everyone could have the experience with Americans I have had. Their sense of civic duty and degree of voluntarism is astounding. The perspective that this researcher comes away with is of a community system that puts people, principles, and an abundance of generosity first.

ACRONYMS APPEARING WITHIN THE THESIS

3D's - Downsizing, Devolution and Deregulation
AOC - Area of Concern
CBD - Convention on Biodiversity
CERCLA - U.S. Comprehensive Environmental Response, Compensation and Liability Act (commonly known as Superfund)
CIESIN - Consortium for International Earth Science Information Network
CMP - Coastal Management Program (NYS program for CZM)
COG- Council of Government, Tug Hill, NYS
CPD - Coastal Programs Division of the US Department of Commerce
CPs - Comprehensive Plans
CZM - Coastal Zone Management based on the..
CZMA - Coastal Zone Management Act of 1972
DSP Dominant Social Paradigm
EDP - Economic Development Plan
FL-LOWPA - Finger Lakes-Lake Ontario Watershed Protection Alliance
GLWQA - Great Lakes Water Quality Agreement
GORR - Governor's Office of Regulatory Reform
HP - Housing Plan
HRL - Home Rule Law
HUD - Federal Agency of Housing and Urban Development
IJC - International Joint Commission
JCPD _ Jefferson County Planning Department
KPA - Key Performance Areas
LaMP- Lakewide Management Plan (GLWQA Annex 2 Program for Great Lakes management)
MPs - Master Plans
NOAA - National Oceanic and Atmospheric Administration of US Department of Commerce
NYWEA - New York Water Environment Association, Inc.
NYSDEC - New York State Department of Environmental Conservation
NYSDOS - New York State Department of State
OCRM - Office of Ocean and Coastal Resource Management of NOAA
PB - Planning Board
PUCs - Public Utility Companies
RAP - Remedial Action Plan
SAB - Science Advisory Board of the IJC
SARA - Superfund Amendments and Reauthorization Act (amending CERCLA - 1986)
SEQR - NY State Environmental Quality Review (uses EPA standard for EIA)
SLCPD - St. Lawrence County Planning Department
SUNY - State University of New York
THC - Tug Hill Commission
UNCED - United Nations Conference on Environment and Development, Brazil, 1992
USEPA - United States Environmental Protection Agency
WCED - World Conference on the Environment and Development, Norway, 1987
WQA - Water Quality Agreement
WQB - Water Quality Board of the IJC
WQS - Water Quality Strategy
ZBA - Zoning Board of Appeals

MUNICIPAL CAPACITY TO IMPLEMENT AN ECOSYSTEM APPROACH IN COASTAL ZONE MANAGEMENT IN THE ST. LAWRENCE RIVER BASIN OF NEW YORK STATE

ABSTRACT	i
RÉSUMÉ	ii
ACKNOWLEDGMENTS	iv
ACRONYMS APPEARING WITHIN THE THESIS	v

CHAPTER I

INTRODUCTION AND RESEARCH PURPOSE	
CONTEXT	1
Problem Dynamics	1
a) Defining the Ecosystem Approach	1
b) The Ecosystem Approach as Dedicated Policy	2
c) Senior Government Policies	3
CENTRAL RESEARCH QUESTION	3
DEFINITIONS BY OTHER STAKEHOLDERS	9
RESEARCH SCOPE OR BOUNDARIES	16
Study Period	16
Study Area	17
a) Representativeness:	17
b) Uniqueness	19
Study Variables	21
a) Planning Law and Policy	21
b) Municipal Planning Roles	22
c) Planning Guides, Tools and Instruments	22
d) Innovative Partnerships and Bridging Mechanisms	24
THESIS DEVELOPMENT	25

CHAPTER II

PROBLEMATIQUE: A CLARIFICATION OF KEY CONCEPTUAL RELATIONS	
PUBLIC CONCERN	28
CHANGING GOVERNMENTS AND CHANGING PRIORITIES	29
PERCEPTIONS OF THE ENVIRONMENT-ECONOMY POLARIZATION AND ITS INFLUENCE	31

CHAPTER III

RESEARCH STRATEGY AND METHODOLOGY

Methodological Attributes of Content Analysis:	35
SURVEY RESEARCH	35
Methodological Attributes of the Long Interview Technique:	36
PARTICIPANT OBSERVATION	36
Methodological Attributes of Participant Observation	37
2) ASSOCIATED RESEARCH QUESTIONS 1: WHAT PERSPECTIVES ARE CONTAINED WITHIN THE ECOSYSTEM APPROACH OF THE INTERNATIONAL JOINT COMMISSION (IJC)?	38
3) ASSOCIATED RESEARCH QUESTIONS 2: WHAT IS THE LEVEL OF CONSISTENCY BETWEEN THE ECOSYSTEM APPROACH OF THE IJC AND THE DEDICATED COASTAL MANAGEMENT EXPERIENCES OF NEW YORK STATE?	41
4) ASSOCIATED RESEARCH QUESTION 3: WHAT PERSPECTIVES APPEAR TO BE DOMINATING COASTAL ZONE MANAGEMENT IN UPPER NEW YORK STATE, AND WHAT IS THE EXISTING ROLE OF MEMBERS OF THE PLANNING COMMUNITY IN THIS REGARD?	42
5) ASSOCIATED RESEARCH QUESTIONS 4: WHAT EVIDENCE IS THERE OF INNOVATIVE WAYS AND MEANS OF ADOPTING AN ECOSYSTEM APPROACH AT THE MUNICIPAL LEVEL?	52

CHAPTER IV

COMPONENTS OF THE ECOSYSTEM APPROACH OF THE INTERNATIONAL JOINT COMMISSION	
PURPOSE	54
CONTEXT	54
THE ECOSYSTEM APPROACH TEMPLATE	57
The Ecological Component of the Template	57
The Implementation and Administration Component of the Template	58
The Facilitating Processes and Mechanisms Component of the Template	58
THE ECOSYSTEM APPROACH: SOURCES OF INFORMATION	59
THE ECOSYSTEM APPROACH: EXPOSURE THROUGH TIME	60
THE ECOSYSTEM APPROACH: CONTENT ANALYSIS RESULTS	60
Which Ecosystem Approach Components Receive most Attention?	63
The Ecosystem Approach as a Framework to Address Great Lakes Concerns ..	69
The Emergence of Facilitating Processes and Mechanisms Components	76
KEY RESIDUAL MESSAGES	78
Ecological Components	79
Implementation and Administration Components	79
Facilitating Processes and Mechanisms Components	80
CONCLUDING REMARKS	82

CHAPTER V

LEVEL OF CONSISTENCY INTERNATIONAL JOINT COMMISSION - NEW YORK STATE COASTAL MANAGEMENT APPROACH	
PURPOSE	83
NEW YORK STATE COASTAL ZONE MANAGEMENT PROGRAM SENSITIVITY	

TO THE ECOSYSTEM APPROACH	88
MUNICIPAL EXPERIENCE WITH COASTAL ZONE MANAGEMENT AND SENSITIVITY TO THE ECOSYSTEM APPROACH	90
KEY RESIDUAL MESSAGES	101

CHAPTER VI

MUNICIPAL PLANNING AND MANAGEMENT ROLES AND THEIR SENSITIVITY TO THE ECOSYSTEM APPROACH	
PURPOSE	103
CONTEXT	103
The Theoretical Range of Choice for Effective Municipal Planning	104
The Practical Range of Choice	105
The Actual Range of Choice	105
METHOD	106
DISCUSSION OF RESULTS	106
Perceptions of Planning in the Coastal Zone and of the Capacity to Implement Planning	106
Perceptions on Economic Growth	107
Perspective on Planning	108
Perspectives on Deregulation	110
The Impact of Downsizing, Deregulation and Devolution Policies on Planning Roles	111
Municipal Planning Capacity and Ten Roles for the Municipal Planner	114
a) The Plan Making Role	114
b) The Planner as Technician	120
c) The Planner as Regulator	121
Regulatory Planning Tools	
1) The State Environmental Quality Review	122
2) The State Coastal Management Program	123
3) Incentives	123
4) The Clean Water/Clean Air Bond Act (1996)	124
d) The Planner as Consensus-BUILDER	125
Planning Advisory Committees	125
e) The Planner as Advocate	127
f) The Planner as Land Banker or Steward	128
g) The Planner as Fiscal Agent	129
h) The Planner as Developer	130
i) The Planner as Radical	132
KEY RESIDUAL MESSAGES	134

CHAPTER VII

EVIDENCE OF INNOVATIVE PARTNERSHIPS AND BRIDGING MECHANISMS IN UPPER NEW YORK STATE MUNICIPALITIES	
PURPOSE	136
CONTEXT	136

METHOD	138
ANALYSIS OF RESULTS	139
TYPOLGY OF BRIDGING MECHANISMS	139
Organizational Rationale	139
QUASI-STATE - LOCAL GOVERNMENT PARTNERSHIPS	143
Local Government Conferences	143
a) Context	143
b) Structure	144
c) Functions, Processes and Mechanisms	144
d) Perspectives	144
QUASI-STATE - LOCAL GOVERNMENT PARTNERSHIPS	146
The New York State Cooperative Tug Hill Commission (THC)	146
a) Context	146
b) Structure	147
c) Functions, Processes and Mechanisms	148
1) It represents local interests	148
2) It is cost-effective in the poorest part of the State	148
3) It is communicative	148
4) It is non-threatening	148
5) It can be ended if no longer necessary	149
6) It serves as a catalyst for local and regional initiatives	149
KEY RESIDUAL MESSAGES	149
CHAPTER VIII:	
CONCLUSIONS AND RECOMMENDATIONS	
RESEARCH DYNAMIC ONE: AN ECOSYSTEM APPROACH	158
RESEARCH DYNAMIC TWO: DEDICATED POLICY AND PRACTICE	159
RESEARCH DYNAMIC THREE: MUNICIPAL PLANNING CHANGES	159
The Planning and Management Functions	159
The Planning and Management Reality	160
RECOMMENDATIONS	161
To the International Joint Commission	161
To the Rural Municipalities in the Great Lakes-St. Lawrence River Basin	162
To Partnerships and Institutional Bridging Mechanisms	163
AVENUES FOR FUTURE RESEARCH	163
REFERENCE LIST	165

LIST OF FIGURES

FIGURE 1.1 - JEFFERSON AND ST. LAWRENCE COUNTIES, NEW YORK STATE	5
FIGURE 1.2 - AREAS OF CONCERN WITHIN THE GREAT LAKES BASIN	19
FIGURE 4.1a - NUMBER OF IJC DOCUMENTS ANALYZED PER PERIOD WITH REFERENCE TO ECOSYSTEM APPROACH	62
FIGURE 4.1b - AVERAGE NUMBER OF CITATIONS/DOCUMENT FOR EACH	

REAUTHORIZATION PERIOD	62
FIGURE 4.2 - COMPARISON OF TOTAL EXPLICIT AND IMPLICIT CITATIONS RELATED TO ECOSYSTEM APPROACH TEMPLATE	64
FIGURE 4.3 - AVERAGE CITATIONS PER DOCUMENT (EXPLICIT AND IMPLICIT COMBINED) FOR EACH ECOSYSTEM APPROACH COMPONENT	66
FIGURE 4.4 - AVERAGE CITATIONS PER DOCUMENT FOR EACH ECOSYSTEM APPROACH COMPONENT (EXPLICIT AND IMPLICIT SEPARATED FOR COMPARISON)	68
FIGURE 4.5: AVERAGE CITATIONS/DOCUMENT OF ECOLOGICAL COMPONENTS OF TEMPLATE	70
FIGURE 4.6 - AVERAGE CITATIONS/DOCUMENT OF ADMINISTRATIVE COMPONENTS OF TEMPLATE	71
FIGURE 4.7 - AVERAGE CITATIONS/DOCUMENT OF FACILITATING PROCESSES AND MECHANISMS COMPONENTS OF TEMPLATE	72
FIGURE 6.1 - PROPORTION OF PLANNING AND MANAGEMENT ASSIGNED TO SPECIFIC ROLES	118

LIST OF TABLES

TABLE 1.1 - MUNICIPAL PLANNING DATA FOR THE AMERICAN SIDE OF THE ST. LAWRENCE RIVER	6
TABLE 1.2 - ECOSYSTEM CHARTER OF THE GREAT LAKES - PRINCIPLES OF IMPLEMENTATION	12
TABLE 1.3 - TEN ROLES FOR THE ENVIRONMENTAL PLANNER	23
TABLE 3.1 - CONTENT ANALYSIS RESEARCH DESIGN	34
TABLE 3.2 - CONTENT ANALYSIS TEMPLATE THE ECOSYSTEM APPROACH AND ITS COMPONENTS	39
TABLE 3.3 - KEY INTERNATIONAL AND NATIONAL AGREEMENTS AND LEGISLATION APPLYING TO THE NEW YORK STATE COASTAL ZONE	43
TABLE 3.4 - STATUTES GOVERNING MUNICIPAL AFFAIRS IN NEW YORK STATE ..	44
TABLE 3.5 - CONTENT ANALYSIS TEMPLATE: ASSIGNED PLANNING AND MANAGEMENT ROLES OF NEW YORK STATE MUNICIPALITIES	46
TABLE 3.6 - LONG INTERVIEW RESPONDENTS LEDGER, ST. LAWRENCE AND JEFFERSON COUNTIES, NYS	48
TABLE 3.7 - LONG INTERVIEW DIALOGUE DEVELOPMENT TEMPLATE	51
TABLE 4.1 - CONTENT ANALYSIS RESULTS: ECOSYSTEM APPROACH COMPONENTS IN DESCENDING ORDER OF FREQUENCY OF EXPLICIT MENTION ..	65
TABLE 5.1 - DOCUMENTS AND REFERENCES ON THE NEW YORK STATE COASTAL MANAGEMENT PROGRAM RECOMMENDED BY DIVISION OF COASTAL RESOURCES, ALBANY, NY	84
TABLE 5.2 - MUNICIPAL PLANNING AND COASTAL-SHORELINE MANAGEMENT ST. LAWRENCE AND JEFFERSON COUNTIES, NEW YORK STATE, 1998 ..	85
TABLE 5.3 - MUNICIPAL PLANNING DOCUMENTS and REFERENCES ST. LAWRENCE AND JEFFERSON COUNTIES, NEW YORK STATE, 1999	87
TABLE 5.4 - SENSITIVITY TO ECOSYSTEM APPROACH in GUIDING DOCUMENTS ..	89

TABLE 5.5 - MUNICIPAL PLANNING GUIDANCE ST. LAWRENCE and JEFFERSON COUNTIES, NEW YORK STATE, 1999	97
TABLE 6.1 - MUNICIPAL PLANNING ROLES AND INSTRUMENTS	116
TABLE 6.2 - MUNICIPAL PLANNING ROLES AND INSTRUMENTS JEFFERSON AND ST. LAWRENCE COUNTIES, NYS	119
TABLE 6.3 - ASSIGNED PLANNING AND MANAGEMENT ROLES OF NEW YORK STATE COASTAL MUNICIPALITIES	133
TABLE 7.1 - TYPOLOGY OF BRIDGING MECHANISMS IDENTIFIED	140
TABLE 7.2 - LOCAL GOVERNMENT WORKSHOP PROGRAM, SUNY Potsdam	145

LIST OF APPENDICES

APPENDIX 3.1 - ASSURANCE OF ETHICAL REVIEW AND CONFIDENTIALITY	192
APPENDIX 3.2 - LIST OF INSTITUTIONS AND LAWS APPLYING TO THE ST. LAWRENCE COASTAL ZONE	193
APPENDIX 3.3 - UNIVERSE OF CONTENT FOR CONTENT ANALYSIS (INTERNATIONAL JOINT COMMISSION DOCUMENTS REVIEWED)	194
APPENDIX 3-4 - UNIVERSE OF CONTENT FOR CONTENT ANALYSIS GUIDING DOCUMENTS OF ST. LAWRENCE and JEFFERSON COUNTIES COASTAL ZONE, NEW YORK STATE	197
APPENDIX 3.5 - LONG INTERVIEW RESPONDENTS ADDRESSES ST. LAWRENCE AND JEFFERSON COUNTIES, NEW YORK STATE ...	200
APPENDIX 4.1 - CONTENT ANALYSIS RESULTS: DEFINITIONS ECOLOGICAL COMPONENTS	204
APPENDIX 4.2 - EXTRACT OF CITATIONS FROM CONTENT ANALYSIS ON COMPONENTS OF AN ECOSYSTEM APPROACH	211
APPENDIX 6.1 - PERSPECTIVES AND ATTITUDES OF PUBLIC ON FEDERAL AND STATE COASTAL MANAGEMENT SUPPORT IN NYS	220

CHAPTER I

INTRODUCTION AND RESEARCH PURPOSE

CONTEXT

This research investigates three problem dynamics evolving in coastal zone management at the municipal level along the St. Lawrence River in Upper New York State. Their simultaneous presence has important implications for the evolution of an ecosystem approach from a normative abstraction at the international management level to an operational, management guide for coastal municipalities.

Problem Dynamics

a) Defining the Ecosystem Approach

The first problem dynamic is related to the “ecosystem approach” itself. The International Joint Commission (IJC), since 1977, has championed the ecosystem approach and attempted to define its components and promote its use as a method to improve coastal zone management decision making within the Great Lakes-St. Lawrence River basin (MacKenzie 1996; IJC 1997b; and Kellog 1997). The Great Lakes Research Advisory Board of the Commission briefly defined the concept in 1978 in terms of broad relations and principles.

The ecosystem approach proposed by the Board is based on a man-in-a-system concept rather than on the system-external-to-man concept inherent in the 1972 GLWQA. Incorporation of this approach within the advisory and management functions of the Commission and Parties, respectively, necessitates political recognition of the interacting elements of water, air, and living organisms, including man, within the Basin.

IJC 1978: 20

Canada and the United States created the Commission through the 1909 Boundary Waters Treaty because of a recognition that each country is affected by the other's actions in lake and river systems along the shared border. The International Joint Commission has been repeatedly asked to provide

leadership and to assist both governments in finding solutions to water problems through its investigative and scientific functions (IJC 1997b: 32; CIESIN 1998). It has worked actively with other institutional arrangements and stakeholders in the basin for the advancement of programs, policies and projects to achieve the Great Lakes Water Quality Agreement's goals. Among these is advancement of an ecosystem approach.

The ecosystem approach has, however, been evolving in a "top-down" fashion, that is, beginning at the international level with the Commission (Vig *et al.* 1997). As such, its successful implementation as a conceptual guide for local planning and management is dependent upon several key factors: concept understanding, usage that demonstrates benefits outweighing costs, and the municipal level possessing the planning capacity to operationalize its key ingredients. Capacity, as shown shortly, refers to a number of planning and management attributes including: the professional planning staff; the active participation of planning advisory boards and committees; the performance of a variety of roles by planners and managers; the availability of planning tools (guides and instruments); and the presence of bridging mechanisms among municipalities that can facilitate resource and information sharing.

b) The Ecosystem Approach as Dedicated Policy

The second dynamic is the evolution of dedicated coastal zone policy and its relationship to the ecosystem approach. Non-dedicated coastal management policy, such as in the Province of Ontario, denotes management that is not supported by comprehensive law and policy, but rather is implicitly guided by a narrow or select set of "soft" policy initiatives (Smith 1990: 172). Some critics of the "non-dedicated" policy environment have stated that it appears to offer few opportunities for the inclusion of alternative perspectives or ways of viewing issues and problems because it is so narrowly focussed on a few coastal problems, for example, flood control, erosion prevention or wetland conservation (Hildebrand 1989; Philippi 1996: 68; IJC 1998a). **Dedicated policy**, on the other hand, denotes management that is instructed by national and/or state statutory law and guided by an explicit set of policies that cover a wide range of problems and issues (Hildebrand 1989; U.S. General Accounting Office 1994; Vig *et al.* 1997; Hackett 1998). This

characterizes the coastal zone management experience in the United States since 1972 under the national Coastal Zone Management Act (CZMA), and the New York State Coastal Management Program (CMP) of 1982 (U.S. DOI 1972; NYS DOS 1986, 1992c). But, a qualification is in order. If local municipalities and their governments are not parties to these programs, for whatever reasons, then national and state program goals cannot be realized and the ecosystem approach is quite limited as a decision making guide and as a unifying force among decision making levels.

c) Senior Government Policies

The third dynamic relates to municipal planning changes in New York State since the 1994 state elections. Senior governments are adopting the 3D's principles of deregulation, devolution and downsizing (IJC 1997a: 22). Their adoption has created a considerable challenge for both urban and rural municipalities that may want to participate in coastal zone management and use the ecosystem approach (Krantzberg 1997: 228; IJC 1997a: 13 and 1998b; Vig *et al.* 1997: 10). Limited financial assistance, fewer transfer payments, and increased municipal responsibility for a variety of social and community services may move coastal and other environmental issues further down the municipal action ledger (Krantzberg 1997: 239; CIESIN 1998). That is, the changes may affect progress in the dedicated coastal zone policy environment. If planners and managers are forced away from environmental and land use development issues, then the capacity investments needed to utilize an ecosystem approach will not be made. Why? Because the ecosystem approach will lack the attention of its most important allies in the cities, towns and villages. As a consequence, more work will have to be done by senior governments and the IJC to better define in "ready-to-use" or operational terms key ecosystem approach components.

CENTRAL RESEARCH QUESTION

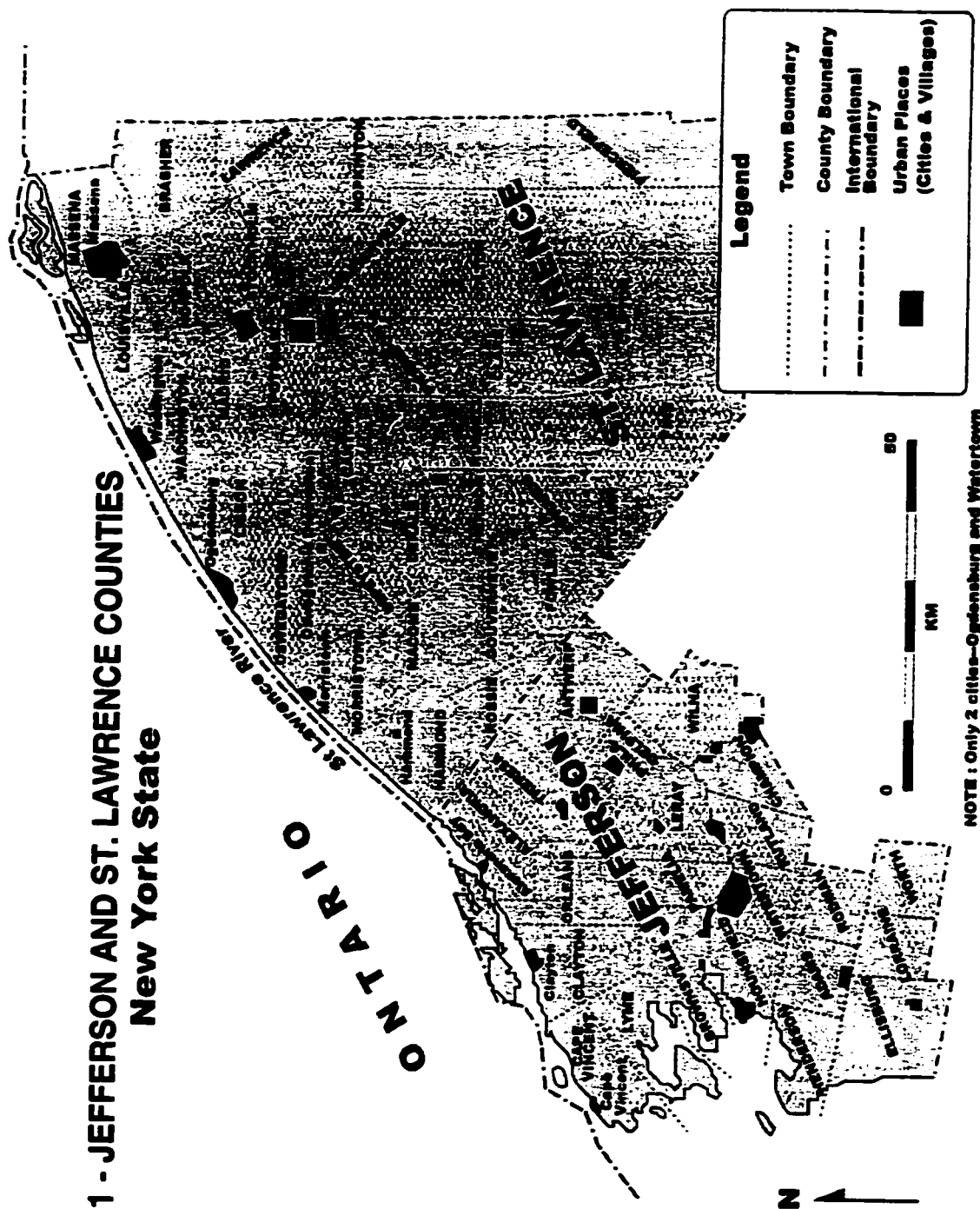
In the context of these dynamics, the research addresses the following **Central Research Question**:

Do municipalities adjacent to the St. Lawrence River in Upper New York State possess the capacity to utilize the "Ecosystem Approach" as a guide for coastal zone planning

and management?

The St. Lawrence River coastal region of Upper New York State consists of relatively sparsely-populated, rural municipalities. Jefferson and St. Lawrence counties, the municipalities under investigation, are found here (Figure 1.1 and Table 1.1). After 25 years of environmental institution-building at the national and state level, one might assume that these municipalities would be well-informed, proactive, and interested in working with the national and state governments on environmental issues. In addition, one might assume that these rural municipalities would not contribute significantly to regional environmental degradation. The truth is different. As early as 1974, it was noted that practices within the agricultural, industrial and recreational sectors of this region's economy have led to very serious degradation of the quality and quantity of its coastal resources resulting in impairment of their beneficial uses (NYSDEC 1991; IJC 1997; MacKenzie 1997). Particularly noteworthy in this regard are declining surface and ground water quality; sediment and fish contamination with high levels of persistent toxic substances; rampant development within flood and erosion hazard areas along the St. Lawrence and its tributary watersheds; and loss of wetlands and of biodiversity (IJC 1995a; Philippi, 1996: 68; USEPA 1996b). As well, upstream contaminant sources from within the heavily populated Great Lakes basin have added considerably to the complexity and scope of regional coastal problems. Why? Because the St. Lawrence is both a receptacle and a conduit for most of this pollution produced in urban centres and rural economies surrounding Lakes Superior, Michigan, Huron, Erie and Ontario (IJC 1987b; St. Lawrence RAP Team 1992). Part of this St. Lawrence River coastal region, consequently, was designated an Area of Concern (AOC) by the IJC in 1985 (Rathko *et.al.* 1987; IJC 1996c). This designation, in accordance with the binational Great Lakes Water Quality Agreement Protocol (WQA) of 1987, helps to promote "the rehabilitation of all natural resource uses" through the creation of Remedial Action Plans, or RAPs, to restore the integrity of the local ecosystem (GLWQB 1987c and 1996; IJC 1994d; Krantzberg 1997: 221).

**FIGURE 1.1 - JEFFERSON AND ST. LAWRENCE COUNTIES
New York State**



NOTE : Only 2 cities--Ogdensburg and Watertown

**TABLE 1.1 - MUNICIPAL PLANNING DATA FOR THE AMERICAN
SIDE OF THE ST. LAWRENCE RIVER**

	Type of Municipality	Population 1986	Population 1990	% Growth 1986-91
Alexandria	Town	2322	4977	+114
Alexandria Bay	Village	1265	1194	-5.6
Cape Vincent	Town	1038	2768	+167
Cape Vincent	Village	785	683	-13
Clayton	Town	2212	4629	+109
Clayton	Village	1816	2160	+18.9
Hammond	Town	1090	1168	+7.2
Hammond	Village	271	270	-0.4
Lisbon	Town	3548	3746	+5.6
Louisville	Town	2946	3040	+3.2
Massena	Town	14856	13561	-8.7
Massena	Village	12634	11716	-7.3
Morristown	Town	1921	2019	+5.1
Morristown	Village	461	490	+6.3
Ogdensburg	City	12375	13521	+9.3
Orleans	Town	2007	2248	+12
Oswegatchie	Town	3939	4036	+2.5
Oswegatchie (Heuvelton)	Village	777	771	-0.8
Waddington	Town	2116	1990	-6
Waddington	Village	980	944	-3.7
Watertown	Town	3098	4341	+28.6
Watertown	City	27861	29429	+5.3
Jefferson	County	88,151	110,943	+11
St. Lawrence	County	114,347	111,974	-2.1
New York	State		17990778	+0.8

(Sources: Armstrong, 1998: Jefferson County Planning Department; Mooers 1998: St. Lawrence County Planning Department)

Since 1980, therefore, considerable national and state money has been spent on water quality studies, infrastructure development, flood and erosion control measures, ad hoc public education and participation programs, and remediation of contaminated sediments in the municipalities along the river (NYSDOS 1992a and b; IJC 1994d). In the 1987 Great Lakes Water Quality Agreement Protocol, RAPs in these AOCs are to use a comprehensive, multi-stakeholder "ecosystem approach", to plan, guide, manage and restore associated coastal resources (MacKenzie 1993: 136-144; WQB 1996: 213-219). Numerous studies have demonstrated how essential comprehensive planning is to achieving the prevention and preservation of ecosystem quality and health, and ultimately to achieving sustainable development (Salkin 1990; NYS Legislative Commission 1991: 53; Mitchell 1997; MacKenzie 1997; Behan 1998; IJC 1998b). It is not surprising, then, that explicit federal and state laws guiding the administration of coastal municipalities of NYS require that municipal development be "in accordance with a comprehensive plan" (CP) or an official plan (Town Law, §263; Village Law, §7-704: 1987). In this context, therefore, the issues in question are whether or not municipalities are actively involved in such planning, and if they are producing plans that contain policy statements consistent with and in promotion of an ecosystem approach.

In more than thirty U.S. states, senior government (national and state) policy and practice must pass through the filter of Municipal Home Rule Law, which is imbedded in state constitutions (NYS Legislative Commission 1991). This Law provides municipal governments with sufficient legal and political power (clout) to govern most local affairs. Concomitantly, since 1994, U.S. Federal and State financial assistance tends to reflect "increasingly, market-based approaches to balancing widely accepted societal goals, including economic growth." In addition, "non-intrusive senior government programs" are gaining favour and are far more likely to obtain public support than are hard ecosystem-based policies that rely on additional senior government controls and that elevate environmental protection above achievement of other legitimate public goals" (Fitzsimmons 1996: 225; Wooster 1997: 224). In New York State, historically, there has been a very strong application of the "Home Rule" filter to all forms of public policy, particularly any with a regulatory flavour (Vig *et al.* 1997). The consequence of this legal fabric, then, has been less enthusiasm than one would expect for cooperative programs among the three government levels.

In essence, the coastal planning and management battle must be won in the coastal municipalities themselves. Two hundred years of political independence, coupled with a suspicion of senior governments, have produced a patch-work quilt of semi-autonomous municipalities (Kagan 1991: 334; Schwartz 1997). Coastal planning and management are dependent upon, therefore, both the willingness and the capacity of municipalities to understand and to implement an ecosystem approach. The municipal planning process, its statutory law provisions, the roles planners and managers play, and the planning tools at their disposal, are all elements of primary concern in this research.

In order to address this central research question with confidence, a set of associated research questions must be answered. These questions demand a certain level of competency in both survey research and content analysis methodology. More will be said about the application of these methods and techniques in Chapter III. The **associated research questions** are:

1) What perspectives are contained within the Ecosystem Approach of the International Joint Commission (IJC)?

The "ecosystem approach" has evolved over the last 22 years. The Approach was first proposed by the IJC in its Fifth Annual Report (1977) and bilaterally agreed upon in the 1978 Great Lakes Water Quality Agreement (hereafter the Agreement). It was considered fundamental to planning and management dealing with water quality restoration and enhancement issues in the Great Lakes basin. However, the concept has long been viewed as "too vague" (Richardson 1989: 4), and difficult to employ in coastal and other natural resource management situations (Callicott 1995; Fitzsimmons 1996). In fact, a Task Force appointed by the IJC to develop the Ecosystem Framework called the operational form "elusive" (Allen *et al.* 1994). Lacey (1996: 544) points out that, although it is the preferred watershed resource management approach, there are still "ambiguities and challenges inherent in its use" as an ecosystem management guide. Its components have, consequently, been partially addressed in several separate sources, including the work of senior government managers and academics who have espoused an ecosystem approach and attempted to define it. (MacKenzie 1997; Mitchell 1995: 418 and 1997: 162; Novakowski 1999).

DEFINITIONS BY OTHER STAKEHOLDERS

A selection of seven definitions derived from a variety of non-IJC contemporary sources is presented here for purposes of comparison:

(1) Characteristics of an ecosystem approach: includes the whole system; focusses on the interrelationships among the elements; recognizes the dynamic nature of the ecosystem; incorporates the concepts of carrying capacity, resilience and sustainability; uses a broad definition of environments: natural, physical, economic, social, and cultural; is based on natural geographic limits; embraces all levels of activity; understands that humans are part of nature; is based on an ethic in which progress is measured by the quality, well-being, integrity, and dignity it accords natural, social, and economic systems (Royal Commission on the Future of the Toronto Waterfront. 1992: xxi)

(2) Ecosystem management recognizes the interrelationship between the natural environment and healthy, sustainable economies, and emphasizes the integration of planning for the protection and preservation of both. The ecosystem approach is characterized as a method for sustaining or restoring natural systems and their functions and values. It is goal driven, and is based on a collaboratively developed vision of desired future conditions that integrates ecological, economic, and social factors. It is applied within a geographic framework defined primarily by ecological boundaries... Consistent with their assigned missions, Federal agencies should administer their programs in a manner that is sensitive to the needs and rights of landowners, local communities, and the public, and should work with them to achieve common goals (Garrett *et al.* 1995).

(3) An ecosystem approach.. is a holistic approach to human interactions with ecosystems and the environment.. that respects ecosystems, organisms, and people.. Since, in an ecosystem approach, everything is connected to everything else, an ecosystem approach should: 1) encompass natural, physical, social, cultural and economic considerations, and the relationships among them; 2) focus on understanding interactions among air, land, water, and living organisms, including humans; 3) emphasize the dynamic nature of ecosystems; 4) recognize the importance of living species other

than humans, and of future generations; 5) work to restore the integrity, quality, and health of the ecosystem (Draper 1998: 20, 444).

(4) Principles of ecosystem management: managing across whole landscapes, watersheds, or regions over an ecological time scale; considering human needs and promoting sustainable economic development and communities; maintaining biological diversity and essential ecosystem processes; utilizing cooperative institutional arrangements; integrating science and management; generating meaningful stakeholder and public involvement and facilitating collective decision-making; adapting management over time, based on conscious experimentation and routine monitoring (Cunningham *et al.* 1999: 111-115).

(5) Debate about goals and definitions of ecosystem management should not be perceived as troublesome or a sign of ultimate failure to do its job... The problem is that we as social scientists want ecosystem management as science, as method, and as policy to do something it fundamentally cannot do... the myriad of definitions of ecosystem management were perplexing, but not necessarily problematic. This is because having a multitude of definitions simply means that we, as a society and as scientists, have not come to any widespread agreement about how our values about nature resources are to be structured. Ecosystem management as a conceptual framework, or a concrete planning initiative, will never provide us with answers. Ecosystem management is only a tool; what we do with the tool is ultimately up to us (Soden *et al.* 1999: 45-48).

(6) The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. It is based on the application of appropriate scientific methodologies focussed on levels of biological organization which encompass the essential processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems.

On the basis of this decision, the ecosystem approach for forest biological diversity could be described as a strategy for the integrated management of forests that promotes their conservation and sustainable use in an equitable way. Humans, with their cultural diversity, are an integral component of forest ecosystems. The ecosystem approach requires adaptive management to deal with the complex and dynamic nature of forest ecosystems and the absence of complete knowledge or understanding of their functioning (Convention on Biological Diversity 2001).

(7) The ecosystem approach to environmental protection is a method for sustaining or restoring natural systems and their functions and values. It is goal driven and is based on a collaboratively developed vision of desired future conditions that integrates ecological, economic, and social factors. It is applied within a geographic framework defined by ecological boundaries.

The ecosystem approach integrates ecological protection and restoration with human needs to strengthen the essential connection between economic prosperity and environmental well being. The approach provides the framework that draws together federal, state, local, and tribal governments and the public to achieve the ultimate goal of a healthy and sustainable environment. It requires agencies to be sensitive to the needs and rights of landowners and to work with them toward common goals. The approach recognizes the fundamental connection between human communities and the environment (USEPA 2001).

The brief consideration of several normative definitions of an ecosystem approach assists in understanding the challenge of moving such definitions to an operational understanding. Each is a conceptualization of humans as part of the ecosystem. But, the boundaries and scale of that “ecosystem” present considerable challenges both scientifically and jurisdictionally. The Great Lakes has been called a unique ecosystem by the IJC. Yet, socio-economic conditions and pollution problems differ greatly among the lakes. Thus other institutional arrangements with jurisdictional responsibilities within the Great Lakes, too, have recognized its role and attempted to clarify its principles so that it is capable of being implemented. Interestingly, one of the most comprehensive definitions is contained in the Ecosystem Charter. It was produced independently of the IJC by the Great Lakes Commission, an institutional arrangement consists of representatives from each of the

eight Great Lakes states and two provinces. It devoted several years and numerous consultations, workshops and roundtables to this definitional task (Table 1.2). The Charter definition assembles 17 principles and tenets that range from management philosophy to the value of coordination and cooperation among institutional arrangements. Unfortunately, for the “action level” of coastal zone management - the municipalities - the principles and tenets are not associated with insight into ways and means of implementation. If an ecosystem approach is as elusive as academics, managers and science advisors to the IJC suggest, then, municipal understanding and usage are likely to be severely reduced. The concept must be defined in operational terms that are relevant to municipal governance.

TABLE 1.2 - ECOSYSTEM CHARTER OF THE GREAT LAKES - PRINCIPLES OF IMPLEMENTATION

1) Rights and Responsibilities;	
Principle I	<i>..fundamental right of all people to a healthy environment</i>
Principle II	<i>..right to use natural resources and ecological processes for economic purpose and enjoyment.. with the responsibility to rehabilitate and maintain the integrity</i>
Principle III	<i>..environmental and human health risks related to activities and resource uses shall be assessed and characterized, where possible, by those who propose them...</i>
2) Ecological Integrity and Diversity;	
Principle IV	<i>..chemical, physical and biological integrity of the GL-SLR Basin Ecosystem shall be achieved by understanding, respecting, rehabilitating and protecting ecological processes and natural resources...</i>
Principle V	<i>An ecosystem approach to management.. involves rehabilitating and protecting ecological processes and resources of the Basin Ecosystem...</i>
Principle VI	<i>A coordinated, multi-disciplinary research agenda is necessary to improve understanding of the scientific, social and economic dimensions</i>
Principle VII	<i>The environmental quality of the GL-SLRB Ecosystem shall be improved by virtually eliminating the discharge or release of persistent bioaccumulative toxic substances</i>

Principle VIII

The freshwater resources of the GL-SLR are interconnected and form a single hydrologic system that geographically defines the GL-SLRB Ecosystem.

3) Sustainable Communities;

Principle IX

A binational commitment to the sustainable use of renewable natural resources: need for remedial actions; long-term planning and management; on a comprehensive Basinwide basis; meet societal needs for a healthy Ecosystem and economy.

Principle X

Biological diversity is an essential element of Ecosystem integrity.

Principle XI

Ecosystem integrity and the economic well-being of human communities are interdependent.

Principle XII

Industry support for, and implementation of environmental, conservation and safety standards and practices is necessary.

4) Institutional Relations; and

Principle XIII

Cooperation is essential among government entities including federal, state, provincial, Native American authorities/First Nations, regional and local governments

Principle XIV

GL-SLRB Ecosystem governance and management shall emphasize partnership arrangements among government entities, the private sector, citizen organizations and other interests.

5) Public Information, Education and Participation.

Principle XV

Timely, accurate and accessible information shall be provided to the public regarding all planned activities

Principle XVI

Stewardship of the GL-SLRB Ecosystem shall be fostered through educational efforts that promote greater understanding of the Ecosystem,

Principle XVII

Meaningful public participation in decision-making processes regarding the GL-SLRB Ecosystem shall be encouraged by providing enhanced opportunities for public involvement and empowerment.

GL-SLRB refers to Great Lakes-St. Lawrence River Basin

Further, lack of progress in implementing the New York State Coastal Management Program may indicate that municipalities need help in understanding an ecosystem approach and its benefits and costs (MacKenzie 1993: 144; Lacey 1996: 545). It may also suggest that help is needed in developing municipal capacity to implement some or all of its components. The IJC, the Great Lakes Commission, and other key “leadership institutions” must come together and share a common definition. It is disconcerting to find hard evidence of a lack of institutional convergence on ecosystem approach definition. It is also disconcerting to find out that the IJC’s definition remains a ledger of bits and pieces hidden in over 22 years of publication. More is to be said about this situation later in this thesis.

2) What is the level of consistency between the Ecosystem Approach of the IJC and the dedicated coastal management experience of New York State?

Recently, calls for rigorous “consistency testing” between jurisdictional and decision making levels have been plentiful in coastal zone management (Fitzsimmons 1996; Frissell *et al.* 1996; Jensen *et al.* 1996; NYS DOS 1997a). Simply stated, consistency testing refers to assessing the degree of agreement or harmony between a guide or standard and the empirical case. If the IJC’s concept of an ecosystem approach is to serve as this guide or standard, its components must be identified and clearly defined. It is only after this clarification task is completed that one can examine the New York State program for consistency with the guide or standard and assess municipal capacity to utilize this approach in decision making. More specifically, what can the content analysis of relevant IJC documents reveal about the key ingredients of an ecosystem approach? What can be revealed about its sensitivity to pluralism and the acceptance of multiple perspectives - perspectives other than those that have historically dominated coastal zone management thinking for decades (Technological/Engineering Fix)? What can be revealed about the prescribed municipal role and responsibility in coastal zone management? What can be revealed about the movement from approach conceptualization (Normative Focus) to approach practice or utilization (Operational Focus)? This last question is of critical importance to municipalities that may not have the human and financial resources to investigate the benefits and costs of doing

business a different way - an ecosystem approach way!

3) What perspectives appear to be dominating coastal zone management in Upper New York State, and what is the existing role of members of the planning community in this regard?

The assignment of planning and management roles to municipalities is the first litmus test of this assessment of capacity. Assignment denotes both a rationalization and a legitimization of municipal responsibility. It establishes specific boundaries for municipal action in the coastal zone. The exercise usually has associated with it transfers and allocations of human and financial resources from senior governments for "operational policy" tasks - tasks at the implementation end of the management spectrum. More specifically, it is the assignment of land and resource planning, advocacy, regulation and other roles that are pivotal to municipal and coastal zone management (Jensen *et al.* 1996: 203). Of particular research concern, is evidence of alternative perspectives in municipal planning and management. These perspectives would be attached to planners and managers empowered to play consensus building and other roles related to public participation and other forms of community mobilization.

The ledger of roles being actively played is hard evidence of municipal capacity to utilize the ecosystem approach. A diverse ledger would denote real capacity to implement needed planning and management functions. A meagre ledger would signify a real capacity weakness. This research attempts to identify the roles played by key planners and managers doing the job of coastal zone planning and management in Jefferson and St. Lawrence counties.

4) What evidence is there of innovative ways and means of adopting an ecosystem approach at the municipal level?

Public policy and planning literature is rife with discussion of "municipal coping" in this decade of budget austerity (Thomas 1991: 10-13 and 41-46; Jensen *et al.* 1996; Turner *et al.* 1996; Vig *et al.* 1997). In essence, the literature focusses attention on municipalities mobilizing to share human, financial and information resources. The "formal and informal" partnerships produced as a consequence of this austerity are shown to be necessary in order to sustain municipal functionality,

particularly in the fields of education, health care, and social services. Interestingly, diagnostic field work in Upper NYS exposes evidence that innovative partnerships and institutional arrangements are evolving in the natural resources realm as well. The "Tug Hill Commission", the "Merwin Rural Services Institute", the "Development Authority of the North Country," and the "North Country 21st Century Project" are representative examples. Of particular interest here is the ability of such institutional arrangements to perform roles that enrich municipal capacity. Research attempts to investigate and find hard evidence of such "bridging mechanisms," that is, innovative institutional arrangements that bridge voids in knowledge, in capacity, or in communications and information-sharing. It is expected that such "bridging mechanisms" will be shown to be the necessary prerequisites to achieving the ecosystem approach in planning and management practice at the municipal level.

RESEARCH SCOPE OR BOUNDARIES

Study Period

The study encompasses a twenty-two year time period. It commences with the IJC's first published declaration of the need for an ecosystem approach in 1978. This declaration was contained in the Great Lakes Water Quality Agreement of that year and a key report produced by the Great Lakes Research Advisory Board of the IJC (GLWQB 1996: 2). It concludes in November 2000, with the completion of all necessary field studies associated with the application of a specific technique drawn from the survey research domain, the Long Interview Technique. It is assumed that this time frame should be a sufficient interval in which to find both evidence of a well-defined ecosystem approach from an operational perspective, and of federal, state and municipal level responses to it. The assumption is based on an extensive literature review, both of major international, national, state, and municipal coastal zone management initiatives (laws, policies, programs, projects) in the upper New York State region, as well as pertinent books, journals and reports.

Study Area

There are 43 Areas of Concern (AOCs) within the Great Lakes basin, and four occur along the 650 mile coastal zone of northern and western New York State (Figure 1.2). This research, however, focusses on only the New York portion of the St. Lawrence River that contains Area of Concern Number 43 and covered by the GLWQ Agreement (GLWQB 1987: 2.8-1). This coastal zone extends from Cape Vincent at the eastern end of Lake Ontario to the Town of Massena. Research attention focusses closely on 22 coastal municipalities (12 towns, 8 villages and 2 cities) in Jefferson and St. Lawrence counties (Table 1.1 and Figure 1.1). These municipalities served as a laboratory for the larger comparative study, the *St. Lawrence River Ecosystem Recovery Project* undertaken by the University of Ottawa-based Institute for Research on the Environment and the Economy and conducted in Ontario and New York State during 1994-96.

There are several other justification points for this spatial orientation, and they are discussed in the context of the study area's representativeness and uniqueness. These are attributes recognized in all social science case studies and their combination serves as a strong study justification (Yin 1993; Hamel 1997).

a) Representativeness:

First, the sample population of municipalities includes the variety of municipal types - counties, towns, villages and cities found throughout the Great Lakes basin and the eastern United States. This inclusion guarantees exposure to various existing levels of municipal capacity in coastal and environmental planning and management.

Second, the sample population of municipalities shares key socio-economic characteristics with other rural, coastal and non-coastal municipalities in New York and neighbouring Great Lakes states. More specifically, such small, rural municipalities share similar population change rates (negative to 2% growth); net domestic migration (negative); unemployment rates (3-6% higher than state average 1997); family and personal income rates (below state average); social assistance levels (above state average); State and Federal Aid Payments to local governments, (1991-96, 34% higher); increasing tax collection (20-60% 1997); lower adult education levels, etc. In fact, county planning

decision-making focuses heavily on such economic factors as the percentage of residents below the poverty line (17.2% in St. Lawrence County - US Census Bureau 1997).

Third, the study area shares a trend set with many other rural municipalities. It is imposing considerable stress and is affecting the management of land and water resources. Urbanization is contributing to a rural population exodus while simultaneously, suburbanisation, is superimposing urban lifestyles and demands on rural areas (Braaten 1991; Thomas 1991). As a consequence, rural municipalities, and particularly counties, are being asked to provide more high quality and varied services to a declining population base with an eroding ability to raise revenue by taxation.

Fourth, rural municipalities, particularly counties, are being hard hit because of dwindling transfer payments from the federal government to individual states. This condition induces a like response on state transfer payments to individual counties, particularly if the political stripe and spatial location are distant from state capitals, like Albany, NY. Cumulatively, these stresses also affect the capacity of municipal governments to properly plan and manage their coastal resources (IJC 1997a, and 1998b).

Fifth, the study area displays the same hierarchical and complex management structure as other regions in the Great Lakes basin. More specifically, New York State municipalities (county, town, village and city) are established and governed by a specific set of State and Local Laws and ordinances (NYS DOS 1987). While this legal fabric empowers and legitimizes municipal administration, there are also numerous institutional arrangements operating at the international, national and state levels in the Coastal Zone Management (CZM) and other domains. In essence, the study area offers an excellent opportunity to study polycentric governance (Casey *et al.* 1991; McGinnis 1999). That is, governance challenged by overlapping and competing layers of power, authority and jurisdictional responsibility. Jurisdictional "turf wars" is a situation called the curse of the managerial fabric of the Great Lakes basin (Caldwell 1994).

b) Uniqueness

First, the study area is unique within the Great Lakes basin in that it is a sparsely-populated, rural setting and yet contains one of the basin's 43 Areas of Concern (AOCs) more commonly associated

with highly-industrialized, heavily-populated centres. The AOC designation means that aquatic ecosystem functions within municipal boundaries have reached serious degrees of impairment of beneficial uses despite past application of regulatory controls and other instruments (IJC 1987: 15). Jefferson and St. Lawrence counties, NY, are both involved in this Remedial Action Plan (RAP) process. Further, as each AOC has its unique character (institutional, political, ecosystem), a unique set of environmental circumstances and causes of impairment, the experience can reveal different mechanisms and institutional arrangements or ways of coping.

Second, the area is also unique in relation to its coastal position within the Great Lakes basin. More specifically, the municipalities exist in the St. Lawrence Lowlands, a region comprising more than 49,000 acres of North America's most significant wetlands. An examination of municipal progress in protecting this ecosystem complex, and an identification of the planning and management tools used in this cause are important evidence of the ecosystem approach having an impact on land use planning. Any positive change in wetlands appreciation at the municipal level would suggest that, in one ecological domain at least, perspectives not associated with development are influencing municipal decision makers. Historically, wetlands are undervalued in upper New York State and throughout the Great Lakes basin (Frissell *et al.* 1996; Gannon 1996: 442; Vig *et al.* 1997). A wetland loss of more than 60 percent in New York State can be attributed to such undervaluation (Mitsch *et al.* 1993). In its place, human use system activities are being built that can out-bid wetland functions for coastal locations. The IJC indicates that real evidence of wetland loss reduction is a significant indicator of successful implementation of the "ecosystem approach" (IJC 1995: 111; IJC 1997; IJC 1998b).

Third, these municipalities are located in a flood prone region during periods of high water levels in the Great Lakes basin (Buras 1995: 19). In addition, most of the municipalities along the shoreline in Jefferson and St. Lawrence counties contain tributary streams (and micro-watersheds) designated "hazard zones" (SLEOC 1979; NYSDEC 1988). This designation is associated with specific regulatory legislation, national flood insurance and liability implications, and municipal land use planning requirements. While other issues and problems may, from time to time, have more economic and ecological effect in this coastal zone, flooding and erosion hazards receive the most

attention from senior governments and their agencies (Hildebrand 1989; Philippi 1996; Vig *et al.* 1997). The dominant entrenched perspective is labeled the "the technological fix" or "engineering mentality" to coastal issues and problems. Why? Because the position held by government departments and agencies is dominated by members of the engineering fraternity, notably, the U.S. Army Corps of Engineers (Philippi 1996; Goldfarb 1997). The study area offers, therefore, an opportunity to explore the state of coastal zone management from a number of perspectives, including the natural hazards perspective considered the most resistant to an ecosystem approach (IJC 1997a: 26). Alternative perspectives worth seeking in municipal experience, called for in fact under the Ecosystem Approach, are land use planning and management perspectives that are behavioral, such as those promoting zoning, alternative hazard land use, public education and public access among others (Gunderson *et al.* 1995; IJC 1997c; MacKenzie 1997).

In essence, then, one could understandably hypothesize that a region with as complex a ledger of environmental degradation and natural hazard impacts should be receptive to an alternative planning and management approach. That is, it requires one that can reduce the breadth and severity of associated problems.

Study Variables

As the Central Research Question indicates, the primary research focus is the capacity of municipalities to internalize the ecosystem approach and capture multiple perspectives that, in part, fulfil its obligations. It is also focused on issues that can be changed without significant financial investment. The key qualitative variables that are used to measure this capacity are discussed briefly below.

- a) Planning Law and Policy** - One of the key independent, qualitative variables for determining capacity is legalization (or legitimization). This is the legal foundation of municipal planning in New York State. How are municipalities enabled through state legislation to develop capacity? How is this capacity defined in legal terms? Of particular interest are the requirements placed on municipalities (cities, towns, villages and counties) to develop formal planning guides (comprehensive plans, comprehensive development plans, master plans, land

use development plans) and to utilize specific planning instruments (zoning, subdivision review, site plan review, building permits, and various regulations among others) (NYS DOS 1998a, b and c). A central research task is the content analysis of relevant statutory law and policy to answer these questions.

b) Municipal Planning Roles - Research identifies the existing roles that municipal planners and managers play, including those associated with coastal zone management. Literature and professional opinion suggest that, in a generous scenario, they can play at least 10 roles. Among these are: plan maker, technician, regulator, developer, consensus builder, advocate, land steward or banker, entrepreneur, fiscal agent, and radical (Table 1.3). Ideally, a municipal planning department that utilizes the maximum number of planning roles would have the potential to express and consider the greatest variety of alternative perspectives at planning meetings. On the other hand, as the number of planning roles performed is reduced, the ability of planners to capture perspectives demanded in an ecosystem approach is severely constrained. They would not be exposed to the alternative viewpoints, the innovative thinking, the entrenched positions, or the dissenting voices contained in their communities. Why? Because contact with a variety of stakeholders would be reduced to the few associated with the mandatory planning roles - those of regulator and developer. Information on contemporary role playing is needed from members of the Jefferson and St. Lawrence county planning communities. More is said about this consultation task and the technique (Long Interview) drawn from the survey research domain in the methodology section.

c) Planning Guides, Tools and Instruments - Research completes an inventory of both the theoretical and actual range of choice of planning guides, tools and instruments available to the planning communities in Jefferson and St. Lawrence counties. This inventory includes a classification of these items in terms of the above-mentioned planning roles. Such an inventory and classification has assisted in the assessment of municipal planning capacity. The inventory

TABLE 1.3 - TEN ROLES FOR THE ENVIRONMENTAL PLANNER**The Planner as:****Explanation**

1	Plan Maker	In the formulation of policies and plans that affect land uses, the planner is able to introduce organizing concepts that stress environmental considerations (e.g. sustainable development, and the healthy communities and ecosystem approaches to planning, among others).
2	Technician	In this role, the planner operates in support of the plan making function. This includes environmental inventories and projections, identification of indicators and monitoring.
3	Regulator	In this role, the planner is able to implement the community's so-called 'police power' in order to put limitations on the use of land, normally through by-laws (e.g. zoning, site plan control, subdivision control, committee of adjustment). Other regulatory instruments include municipal environmental assessment processes, permits and standards.
4	Developer	In this role, the planner identifies community servicing needs and implements plans to meet those needs through the construction and coordination of infrastructure elements (e.g. roads, water mains, sewers, park facilities). This role also includes such instruments as stormwater and waste management, if Promethean solutions are undertaken. The capital investment and permanency associated with infrastructure make this role and its impacts on future land use patterns dominant.
5	Consensus Builder	In this role, the planner becomes a political agent to build community consensus surrounding land and water-related issues. In this context, the planner tries to move community behaviour and understanding in a direction consistent with sound planning principles. The effort can be maximized through educational interaction with the public and through public participation instruments (e.g. mediation, conciliation). With respect to decision-makers, the planner attempts to build consensus by making good arguments and offering professional counsel. This role may include expert testimony at Court of Appeal hearings.
6	Advocate	In this role, the planner acts as a representative of certain groups or conceptual platforms. (e.g. the environmental lobby or local industry). In some cases, the planner recognizes that a particular platform or group (e.g. the homeless) lacks the necessary expertise, backing, or political clout to advance the interests of the cause. Renewed and vigorous stress on environmental planning paradigms, the creation of environmental constraint areas and rehabilitation strategies are all examples of advocate positions.
7	Land Steward or Banker	In this role, the planner identifies and facilitates land tenure or transfer options for the municipality through the use of municipal resources, legal capacities and the power of eminent domain. Generally, the motive is for infrastructure development, amenity or areas of environmental concern and will involve instruments like acquisition, easements, swaps and covenants.
8	Entrepreneur	In this role, the planner facilitates of development agreements and all permutations of public/private partnerships. This is a newer role for the municipal planner. When the public funds are allocated for demolition, preparation and marketing of publicly owned sites for development, private interests can sometimes be encouraged to enter into the land market and take responsibility for actually developing the land.
9	Fiscal Agent	In this role, the planner implements fiscal or financial instruments such as exactions, development impact fees, and development guarantees. For the so-called privilege to develop, the developer is expected to provide certain public benefits or funds to purchase them.
10	Radical	This role is infrequently seen in publicly-employed planners, but is important because crisis-driven planning that require radical solutions can and do occur.

(Sources: Gunton, 1984; Marsh, 1984; Leung, 1989; Levy, 1991; Hodge, 1991; Rich, 1993; Udy, 1994)

exposes omissions, commissions and biases, and voids in the planning fabric (Jewell 1995: 487-494). Are the selected municipalities actively engaged in comprehensive planning? Is planning being guided by comprehensive planning documents? What are the most commonly used planning tools? What tools are the frequently under-utilized, even though they offer a sound alternative? What tools and instruments are presently being used in a coastal zone management context? Are planning advisory boards, committees and programs being used to garner the opinions of multiple publics or stakeholders? Relevant data and information are gathered using both survey research and content analysis methodology. The Methodology Section below elaborates on how these qualitative variables are identified and measured.

d) Innovative Partnerships and Bridging Mechanisms - This research focuses attention on whether or not there is limited municipal capacity in land and resource planning and management. It seeks to identify agencies, actors and other institutional arrangements, public or private, that are successfully serving the municipalities in the study area with advice and technical assistance on coastal and other land and resource issues. What roles do these play? To what extent do they increase the capacity of municipal planning and management to integrate the ecosystem approach and capture multiple perspectives? What are their characteristics and what accounts for any success achieved? How do they bridge any municipal planning barriers? Planning community members, strategically placed non-governmental organization representatives, and academics at regional universities (Potsdam) are each consulted on this theme.

Certainly other variables could be used to measure aspects of the capacity question. For example, locally derived finances (taxes and revenues), municipal transfer payments from Federal and State coffers, municipal political persuasion and political history, among others. However, most of these variables deal with elements of the hard economic or political argument (IJC 1994e). Without a doubt, these are all important arguments, and where and when necessary, they are championed. But, they are not the sole argument. This research is more concerned with the often-neglected perceptions, attitudes, values and behavior of individuals associated with municipal planning and management - the way planning and management are perceived, conducted and coordinated. It

focuses on capacity related variables that are most isolated from the economic whims of Albany, New York and Washington, D.C.

THESIS DEVELOPMENT

The thesis is organized by thematic chapters. They are:

Chapter One, **Introduction and Research Purpose**, identifies the problem context, identifies the study area and provides justification for research.

Chapter Two, **Literature Review**, provides a synthesis of those references most influential in determining the direction and substance of research. The literature review is organized into several major themes or information fields.

Chapter Three **Research Methodology**, provides a description and justification of combining research methods/techniques, in particular: Content Analysis, the Long Interview Technique and Participant Observation. This multimethodological approach may prove valuable to other researchers dealing with complex or multi-jurisdictional issues.

Chapter Four, **Components of an Ecosystem Approach**, critically examines the exposure given the ecosystem approach in literature published by the International Joint Commission (IJC) since 1978. Elements of the ecosystem approach identified from this literature then serve as the basis of testing elaborated on in Chapter Five.

Chapter Five, the **Level of Consistency IJC - NYS Coastal Management Approach**, involves comparing documents of both the International Joint Commission and the U.S. and New York State Coastal Zone Management legislation for presence of components of the ecosystem approach. The extent to which documents of the IJC and legislation at the two senior levels of government are consistent serves as an indicator of explicit guidance at the normative level in the tools of governance. It does not indicate, however, if it is being understood or applied at municipal management levels.

Chapter Six, **Municipal Planning and Management Roles and their Sensitivity to the Ecosystem Approach**, investigates the roles played by municipal planners and managers in the study area. It examines the results of field studies and interviews of persons actually involved in

municipal planning and management.

Chapter Seven, **Evidence of Innovative Partnerships and Bridging Mechanisms**, focusses on a select set of innovative institutional arrangements that have evolved at the municipal level. These mechanisms are instrumental in enriching decision making capacity.

Chapter Eight, **Summary, Conclusions and Recommendations**, returns to the central research question and provides an answer to the municipal capacity question. It also presents a set of recommendations to stakeholders in the Upper New York coastal zone, and ends with a prescription for future research.

CHAPTER II

PROBLEMATIQUE: A CLARIFICATION OF KEY CONCEPTUAL RELATIONS

"The essential feature of the Ecosystem Approach is integration. No single agency or organization can presently lay claim to following an ecosystem approach because, by definition, the approach calls for orchestration" (OMNR 1995: 53)

This single assertion implies a number of practical considerations, including cooperation, coordination, and communications among multiple actors, to name just a few. But, it also raises many questions. Who is the orchestrator? Who are the players? How much does it cost and who provides the money? Moreover, this declaration by the senior scientific Advisory Board to the International Joint Commission represents one end of the governance continuum in the Great Lakes-St. Lawrence River basin. At the other end, there are small, rural, coastal municipalities of Northern New York State that are asked to use an ecosystem approach in land and resource planning and management.

"Cities can have several planners out there talking about case law and court cases... But, it's a very poor way to try to engage volunteer or lay planners in small rural municipalities that are hard pressed to try to get trained and do their job and show up at political meetings once a month ...they are expected to make very complex decisions on very little hard information on what the guiding legislation says and what the real problems and issues are." (Armstrong 1998, Personal Communication).

These quotations introduce important issues relating to municipal capacity-building. Both call for an institutional arrangement that will significantly improve present capacity and, at the same time, help clarify the role of an ecosystem approach. However, the goal of municipal capacity building and the goal of achieving ecosystem approach acceptance can only be achieved after key conceptual relations are clarified.

PUBLIC CONCERN

Much literature asserts that it is only when public concern reaches a degree that is perceived as a "crisis" or a significant disturbance within its community, will the public bring senior governments to account either to develop or to respect an existing environmental policy. In this context, Smith (1995) contends, political action on environmental issues is a "crisis response" and the crisis is what is perceived by the public as a "disturbance" necessitating action (public action initially) to be taken. This "reactive management strategy" has become the status quo in environmental management and "is inconsistent with the Great Lakes Water Quality Agreement and the ecosystem management objectives embodied therein" (IJC 1989b: 107). A "predictive management strategy" that might use early warning indicators to anticipate change and prevent deterioration that requires remediation is preferable (IJC 1991: 9). However, the ability to develop and sustain an indicator's monitoring system is very much in doubt, and the ability of municipalities to devise and maintain such a system is even more doubtful.

The IJC model of the ecosystem approach includes a variety of perspectives. These perspectives are associated with a broad band of agencies accorded responsibility for coastal zone decision-making in the basin. Perspectives represent the underlying institutional philosophy and bias, and they are most often built upon a "a professional orientation or a political ideology." The classic example in this regard is the U.S. Army Corps of Engineers and its "technological/engineering fix" response to most natural hazards (Philippi 1997). The Great Lakes Water Quality Agreement has been identified widely as one of the most mature ecosystem approach models in the domain of water resource management according to the Montreal Protocol 1987. It is perhaps the "ideal standard," since land-use planning is currently being challenged to become more proactive, strategic, pluralistic and ecologically-based (USEPA 1996a). And, in order to meet this challenge, the Agreement has championed an ecosystem approach that demands the consideration of as many alternative perspectives as possible. Unfortunately, the inclusion of public participation processes in planning and management has often been viewed as a contentious issue both for government and private business interests because they open up decision making to a variety of perspectives. In essence, public participation has become the central vehicle for increased pluralism, and not decision-making control - control so desired by government and business.

Godschalk (Burby 1998: 113) distinguishes between "vertical consistency" and "horizontal consistency." The former denotes policy and practice consistency between layers of government, that is, between the state and the municipal and/or the federal and the state. The latter denotes policy

and practice across a single layer of government, that is, all departments or all municipalities. The Coastal Management Program of New York State, more specifically, provides explicit directives that "agencies and local governments participating in the Waterfront Revitalization Program will make every effort to coordinate and synchronize existing permit procedures and regulatory programs... within each agency. Also, efforts will be made to ensure that each agency's procedures are synchronized with other agencies' procedures at each level of government" (NYSDOS 1986: 11). The challenge of translating vertical and horizontal consistency and inter-agency cooperation into land-use decisions is "obstacle prone" and resource intensive (Platt 1983: 388). The vertical movement of policy initiatives from senior governments to lower tier municipalities, for example, is held back by the many constitutional and legal barriers constructed in "an alien era." The horizontal movement of policy initiatives among adjacent municipalities, for example, is held back by political predisposition and the rigours of economic competition.

CHANGING GOVERNMENTS AND CHANGING PRIORITIES

Silberstein *et al.* (2000: 107) mention a pervasive and widespread "lack of trust in public officials, and government in general." This perspective can have a very strong negative influence on introduction of the ecosystem approach in decision-making, an approach which promotes interdepartmental, and interjurisdictional cooperation, collaboration and sharing. Decisions have to be made "in a timely and cost-effective manner, and thus are often made without complete information" (IJC 1991: 12). Baer-Brown *et al.* (1995) add that public policy is not necessarily even dictated by what scientists say is important, but primarily by what the public perceives to be important. The important element in this message is, that if the public is unaware or does not consider an issue important enough, policy will be neither developed nor upheld. Leiss (IREE 1996b: 59) feels, however, that governments are actually very sensitive to "public reaction" particularly with respect to issues that reach the press. Thus, in terms of strengthening municipal capacity in decision making and for policy implementation, institutions must ensure that the public is both informed and involved in the decision-making process. There appear to be no signs in the literature at present, however, that interest in water resource protection has ebbed (Vig *et al.* 1997; Silberstein 2000). In fact, the following assertion, if confirmed, is encouraging in this regard:

The convergent and divergent interaction of two political currents (not Democrat/Republican) explains the fluctuations in environmental policy commitments from one year, or decade, to the next. One is deep and long term and the other shallow and

short term. Over time, therefore, one can see the continuity of strong public support for environmental protection, expanding government authority, and increasingly effective implementation -- even if scarce resources and sometimes poor agency management limit successes. The near-term discontinuities, such as the anti-environmentalist actions of the 104th Congress, capture our attention, yet.. the longer-term transitions and transformations in American values and environmental behaviour arguably are more important (Vig et al. 1997: 10).

Smith (2000: 18) helps to confirm this assertion to some extent. He demonstrates, for example, that while the Reagan Administration explicitly stated its policies were "to get regulators off our backs," Bush proclaimed himself the "environmental president" amending and reauthorising the Clean Air Act among others (Friedman 1995). The Clinton Administration responded in this manner as well, placing environmental protection policies at an even higher priority initially, though this attention waned in later years. In the context of this research, however, with few exceptions, since 1995, governments both at home and abroad have opted for devolution, deregulation and downsizing in their government regimes. NYS Governor Pataki's early approach was perceived by some as an anti-regulatory reaction while to others, it was a "broad project of renovation and modernization of environmental legislation.. aimed at clarifying and regrouping certain texts" (Vig *et al.* 1997). For much of the research period (1974 to 1994), NYS had both a Democratic administration and a Democratic Governor. A great number of environmental laws and environmental legislation were introduced, followed by a great number of changes made to them. Beginning in 1995, therefore, the Republican government of Governor Pataki responded to special interest groups perceptions that there was too much red tape, too much government, and the Governor's Office of Regulatory Reform (GORR) was established (Pataki 2000). As a result, Berry *et al.* (1996) contend, "economic constraints and jurisdictional changes are placing new demands at the municipal level which is perhaps the least adequately equipped to deal with the complexity of the issues involved." The influence of these perspectives and their policy influence will be investigated in the assigned and actual roles played by planners and decision makers.

PERCEPTIONS OF THE ENVIRONMENT-ECONOMY POLARIZATION AND ITS INFLUENCE

The polarization of economic and environmental perceptions, attitudes and values on decision-making in coastal zone environments is noteworthy. Shaffer (1992), O'Doherty (1996) and Hopkins *et al.* (1997) demonstrate that coastal environments are considered highly desirable as residential, industrial and recreational areas, and are subject to extreme pressure for both economic and social development. For many stakeholders, the willingness-to-pay for coastal natural resource opportunities is very high. Reed (1996: 37-43) contributes to the discourse by providing an analysis of "affordances" in relation to the way the environment is perceived and treated, and how people make choices in managing their environment as a result. Gannon *et al.* (1996) demonstrate that "economics can be the *primary factor* in determining whether water quality-oriented practices are adopted." Socio-economic research has proven, he contends, that even when suitable incentives such as tax breaks, low-cost loans, green payments, pollution trading, and cost-sharing are employed, this will still only induce participation in conservation practices if returns exceed costs. In essence, the authors collectively indicate that much work will need to be done to get municipalities and other stakeholders to make investments in capacity building resources that do not require a large financial commitment. Capacity building resources such as modernized law and policy, innovative institutional arrangements that more effectively serve a variety of clients, and better coordination, cooperation and communications among all agencies and actors involved in decision making. Such resources better connect municipalities to their environments, and help facilitate the human-ecological perspective within natural resources management.

"Environmental degradation and resource scarcity are the underside of globalization. They are threats to human security that respect no boundaries. Faced with this kind of threat, the old approaches will not be sufficient. And finding new approaches will not be easy or non-controversial" (Axworthy 1997). Solutions to environmental problems, too, must be spatially dispersed and transgress state, county, international lines and jurisdictions. Platt (1972), Endicott (1993) and Paterson (Burby 1998: 203-230) describe the significant role and involvement that "**third sector**" institutions can play in creating pressure and support for new approaches. The third sector consists of a diversity of environmental groups, land trusts, watershed associations, scientific, technical and professional associations, and universities and foundations that expand the scope of planning and management from the crisis mode.

Endicott (1993: 7) and Silberstein *et al.* (2000, p. 108) recognize that such institutional diversity

will produce the greatest number of possible solutions. The challenge is to recognize that municipal capacity is enhanced by diversity. But, we need the institutional bridges that provide it.

CHAPTER III

RESEARCH STRATEGY AND METHODOLOGY

The purpose of this chapter is to present the research strategy and its associated methodology. It is a strategy that surrounds the consideration of the central research question, and it is built upon a set of associated research questions (Chapter 1). These questions could only be addressed after competency was developed in the usage of select methods and techniques. These research instruments generated and assisted in the analysis of data and information needed to answer the questions.

The chapter begins by identifying and describing key attributes of the methods and techniques used in the study - content analysis methodology, survey research methodology and the Long Interview Technique, and the Participant Observation technique. It then progresses to a consideration of their application in particular research question contexts.

CONTENT ANALYSIS

Content Analysis is one of the most widely-used research methods in the social sciences. It involves different techniques depending on the intended use or research problem (Robert 1997: 3) (Table 3.1). It is a technique for making inferences by systematically and objectively identifying specified characteristics within text (Holsti 1969: 25; Krippendorff 1980: 33-42; Roberts 1997: 12). Text may include everything from a government report, a literary work, to a newspaper article. It is also “une technique permettant l’examen méthodique, systématique, objectif et, à l’occasion, quantitatif, du contenu de certaines textes en vue d’en classer et d’en interpréter les éléments constitutifs, qui ne sont pas totalement accessibles à la lecture naïve” (Robert 1997: 4). And, it allows systematic decoding of text with high levels of accuracy and validity (Holsti 1969: 26; Robert 1997; Roberts 1997). It can be applied directly to selected documents in order to address the complex “What?” question. Content Analysis has several attributes that make it superior to other

TABLE 3.1 - CONTENT ANALYSIS RESEARCH DESIGN

Purpose	Branch of semiotics	Types of Comparisons	Questions	Research Problem
To describe characteristics of communications	Semantics (referent/sign) (explicit, implicit)	Message source A (Bi-national IJC, Federal, State) 1. Variable X across time 2. Variable X across situations 3. Variable X across audiences (State, County, Town, Village, City) Messages, source type B (local, municipal, NGO, other) Messages/standard 1. A priori - 2. Content 3. Noncontent	What?	- To describe trends in communication content (e.g. enforcement through legal channels and structure/ non-enforcement, no structure, no funding) - To relate known characteristics of sources to the messages they produce (components of the ecosystem approach; components of the Acts, Laws, policies) - To audit communication content against standards (successful application of ecosystem approach/bridging mechanisms)
			How?	- To analyze techniques of persuasion (both vertical and/or horizontal - i.e. top-down or interdepartmental, interjurisdictional, intermunicipal, etc.) - To analyze style (clear, structured and comprehensible or illusive, unstructured, vague)
			To whom?	- To relate known characteristics of the audience to messages produced for them - To describe patterns of communication
To make inferences as to the antecedents of communication (the encoding process)	Pragmatics (sender/sign)	Messages/nonsymbolic behavioural data 1. Direct - Acts, Laws, Policies 2. Indirect - political influence, 3Ds policy	Why?	- To understand political values and policy - To analyze socioeconomic traits of rural communities - To infer aspects of culture, cultural change, or resistance to change - To provide legal evidence
			Who?	- To answer questions of disputed authority
To make inferences as to the effects of communication (the decoding process)	Pragmatics (sign/receiver)		With what effect?	- To measure comprehensibility and comprehension of the ecosystem approach - To analyze the flow of information (vertical and/or horizontal) - To assess responses to communication (implementation of an ecosystem approach to coastal resource planning and management)

Source: Modified from Holsitt 1969: 26

social science techniques used to analyse printed media (Krippendorff 1980 33-42).

Methodological Attributes of Content Analysis:

1. It is unobtrusive. It does not visibly influence a participant's or author's response as might occur during interviews;
2. It has structure. It can provide quantitative data if required) though it can accept unstructured material, and is guided by a set of rules or a content analysis template;
3. It is context sensitive and can differentiate messages originating from different sources. This was a particularly valuable quality in the present research context that is as broadly multi-stakeholder as the coastal zone;
4. It is intentionally predictive and allows the analyst to draw valid inferences or residual messages from the patterns or themes found in the text;
5. It allows the researcher to describe content characteristics objectively and, thereby, answer the research question directly from a description of these attributes.

SURVEY RESEARCH

Survey Research seeks to learn about the attitudes, needs, experiences, and behaviour of individuals and institutions (Hembroff *et al.* 1998). Techniques traditionally associated with survey research include mail-out questionnaires, focus groups, joint interviews, opinion polls, telephone interviews, and the Long Interview Technique (Baussell 1991; Fetterman 1991; Neuman 1991). The Long Interview Technique (LIT) is considered "one of the most powerful methods in the qualitative research armoury" (McCracken 1988: 9). It is an interviewing technique that uses open-ended questions or a "thematic template" to guide dialogue development. Its purpose is to capture and measure more deeply opinions, viewpoints and perspectives. For certain descriptive and analytic purposes, in fact, "no instrument of inquiry is more revealing" since, during the interview, the respondent often imparts what is most noteworthy about issues and problems; what is often neglected; and what is oftentimes unexpected insight (McCracken 1988).

Methodological Attributes of the Long Interview Technique:

1. The researcher guides the interview through open-ended questions or an agenda to more fully explore perspectives on an issue as it arises;
2. The open-ended questions are less obtrusive than close-ended and thus allow the respondent to tell his/her story or involvement more honestly ;
3. The technique generates richer analysis by nature of the investigator/respondent “trust” relationship that is established;
4. The respondents are able to more freely express their perspectives on in-depth, or in-house, aspects of issues without enduring the “depth” of other interview techniques;
5. The technique is able to bring about innovative thought and previously unknown points of departure (leverage points), as well as lead to the identification of additional stakeholders as potential respondents;
6. The technique is complementary with other social science methods.

It is important to state that the Long Interview Technique, that is drawn from the survey research domain and applied to human research subjects, must be sensitive to "ethics protocols." The Research ethics Board at the University of Ottawa has specified review procedures for techniques with these attributes (Appendix 3.1).

PARTICIPANT OBSERVATION

The Participant Observation technique demands that the researcher place himself in the contextual situation. In essence, the researcher becomes involved in the decision making process and the issue/problem dynamic (Bogdan 1972; Jorgensen 1989). It is, therefore, a method for gaining access to the interior of seemingly subjective aspects of human activities, in this case, coastal resource planning and management and related municipal decision making. It is accomplished by relatively direct experiential and observational access to the insider's world of meaning (Jorgensen 1989: 15).

Methodological Attributes of Participant Observation

1. It views an area of human activity from the perspective of people who are insiders;
2. It means observing the topic of interest as a participant in the activity;
3. It is relatively unobtrusive, since the participant observer strives to gain at least a comfortable rapport with the people, situations and settings of research;
4. It is dependent upon relationships established with the people in the field or study area; and these relationships heavily influence the researcher's ability to collect accurate, truthful information (Jorgensen 1989: 21);
5. It demands *overt* involvement, that is, providing the "insiders" with knowledge of the researcher's interests and purposes. This has been found to be more conducive to gaining trust and obtaining more in-depth, trustworthy, and perhaps more voluminous information than is *covert* involvement;
6. It demands constant monitoring of research hypotheses and assumptions. The information obtained from the "inside" through participant observation is often surprising, and this situation may require redefinition of problem and a re-examination of the initial hypotheses or research questions. While this may appear disconcerting to the researcher, in fact it adds to the validity of research.
7. It uses concrete "quality control check points", including literature review results, as a means of constructing the interview outline;
8. It encourages ongoing scepticism in order to avoid forming "preconceptions".

Diagnostic field study revealed that a level of "survey fatigue" was being experienced by many planners and managers in the study area. This condition was explained as a consequence of being the centre of attention for many "alien" research projects in Canada and the United States that were narrowly focussed on the IJC and the Remedial Action Plan experience. They were described as "alien" because the researchers were not known, the burden of survey research was placed almost entirely on the New York State respondents, and research results seemed to bear little congruency with reality. In sum, the planners and managers wanted to see "total immersion" of researchers in

the planning process. This required the use of select survey research techniques, that is, techniques or a combination of techniques that develop dialogue, depth, and maximum exposure to specific economic, environmental, political, social and other constraints on municipal planning and management. The Long Interview technique and the Participant Observation technique have met these challenges.

2) ASSOCIATED RESEARCH QUESTIONS 1: WHAT PERSPECTIVES ARE CONTAINED WITHIN THE ECOSYSTEM APPROACH OF THE INTERNATIONAL JOINT COMMISSION (IJC)?

Content Analysis was performed on literature published by, or for the International Joint Commission (IJC). The Ottawa office of the Commission was consulted through the acting Science Advisor and the key works assembled that represent the "universe of content" to be analysed (Thornburn 1998, Personal Communication). This "universe of content" supposedly describes and clarifies the IJC usage of an ecosystem approach in the context of Great Lakes' coastal zone management (Appendix 3.2). It represents references and descriptions throughout the 1970s, 1980s and 1990s and thus reveals if there has been systematic evolution through time from normative to strategic to operational definitions of the approach. In addition, it attempts to determine if there is any added maturity to the normative, strategic and operational definitions of ecosystem approach components through time.

Content Analysis itself was implemented through the use of "thematic text descriptors" associated with a template (Table 3.2). Each descriptor becomes a **content analysis unit related to the *ecosystem approach and its components***. The units can be lines, sentences and paragraphs of text. The three components - Ecological; Implementation and Administration; and Facilitating Processes and Mechanisms - were drawn from primary and secondary sources: 1) The primary sources were formal and informal discussions with planning and management practitioners in Jefferson and St. Lawrence counties during diagnostic field research in the summer and fall of 1998

**TABLE 3.2 - CONTENT ANALYSIS TEMPLATE
THE ECOSYSTEM APPROACH AND ITS COMPONENTS**

A- ECOLOGICAL COMPONENTS	
1	Definition (What is it?)
2	Ecological Principles
3	Ecological Variables
4	Ecological Stresses and Problems
5	Ecological Boundaries
6	Ecosystem-Economy Linkage
7	Stakeholders and their Perspectives
8	Relationship to Watershed Approach and other Conceptual Constraints (Evolutionary)
9	Constructive Criticism

B - IMPLEMENTATION AND ADMINISTRATION COMPONENTS (DOING THE WORK)	
1	Implementation Framework or Guide (How is it done?) "recipe"
2	Governance "systems, processes, solutions"
3	Jurisdictional Powers and Responsibilities - Municipal - State/Provincial - Federal - International "allocation", rationalization"
4	Coordination
5	Co-operation
6	Communication
7	Economic Costs "translation"
8	Institutional and Other Perspectives "Control, Transparency"
9	Constructive Criticism

C - FACILITATING PROCESSES AND MECHANISMS COMPONENTS (CAPACITY BUILDING)	
1	Public Education and Human Resource Development
2	Multiple Perspectives "Capture, Pluralism" (Public Participation, Advisory Committees, etc.)
3	Technical Support and Enrichment
4	Information Sharing "Freedom of Information"
5	Monitoring and Assessment "Feedback" "Evaluation"
6	Continuous Research
7	Voluntarism (labour)
8	Voluntarism (Action/Behaviour)
9	NGO Contribution
10	Constructive Criticism

and 1999. The diagnostic work was focused on having these practitioners discuss the utility of the ecosystem approach and identify its components, such as ecological boundary delimitation, coordination and cooperation requirements among stakeholders, and the role of voluntarism, among others. These items represent ecosystem approach components that were to be defined in terms relevant to municipalities and before their decision making processes were altered. The second sources were a critical review of ecosystem approach related literature.

In this context, the objectives were to determine how the IJC defines these components and to determine if the definitions were in sufficient detail to allow for municipal understanding and use. Phrases of "definition" were captured and recorded in a skeleton content analysis template. Coder reliability tests (2 coders) were performed to set the content analysis score and to establish patterns of agreement and disagreement. Consensus decisions were used to resolve coding incongruencies. This practice is an accepted content analysis protocol (Holsti 1969: 13; Krippendorff 1980: 136-156; Robert 1997: 27-43).

The content analysis included the further step of coding text specifically related to template components as being "explicit" or "implicit" in nature. Explicit text units clarify the definition of ecosystem approach components, and specify the level and/or government agency responsible for

any associated tasks. For example, “Traditional environmental management institutions at senior levels of government in both countries are losing their capacity to act and effect needed changes, owing to the devolution of their powers and dwindling resources. For its part, the Commission will continue to provide the Great Lakes citizenry with opportunities to speak and be heard” (IJC 1998b: 29). Implicit text units, on the other hand, do not clarify definition of ecosystem approach components, and they do not assist in allocating managerial responsibility for any associated tasks. For example, “further progress will require different approaches and novel partnerships, and governments must adapt to the change... to blend regulation with voluntary, beyond-compliance measures, partnerships and greater flexibility” (IJC 1998b: 5). In sum, this content analysis coding procedure helped to identify well and ill-defined ecosystem approach components and the allocation of managerial responsibility, particularly at the municipal level.

3) ASSOCIATED RESEARCH QUESTIONS 2: WHAT IS THE LEVEL OF CONSISTENCY BETWEEN THE ECOSYSTEM APPROACH OF THE IJC AND THE DEDICATED COASTAL MANAGEMENT EXPERIENCES OF NEW YORK STATE?

The same content analysis template applied to the “universe of content” associated with the IJC’s Ecosystem Approach (Appendix 3.2) was applied to key documents describing the New York State Coastal Management Program. These documents were obtained from the Director of Coastal Resources, Division of Coastal Resources, Department of Environmental Conservation in Albany, New York (Stafford 1998, Personal Communication).

The consistency test was dependent upon a comparison of content analysis results. The test may have any number of outcomes. They can range from perfect consistency to no consistency in terms of key components or content analysis units. The task at hand was to identify consistency patterns and draw inferences about the leadership role the IJC has played in the formulation of the New York program. A basic assumption of this process was that, if the State program was not sensitive to ecosystem approach components, then the IJC mission has somehow failed. Such a result would suggest considerable difficulty operationalizing the ecosystem approach at the lower, municipal decision making level. Why? Because an insensitive State government can display a lack of

leadership or environmental stewardship. An insensitive State government can also serve as a policy and practice filter, allowing little technical, financial and human resource assistance to be made available to cities, towns and villages. Municipalities would, therefore, have to be rather unique corporations and have local political leadership, or they would have to exist in a unique regional context - one that possesses natural resources that warrant planning and management exhibiting the characteristics of the ecosystem approach - in order to make the necessary investments alone.

4) ASSOCIATED RESEARCH QUESTION 3: WHAT PERSPECTIVES APPEAR TO BE DOMINATING COASTAL ZONE MANAGEMENT IN UPPER NEW YORK STATE, AND WHAT IS THE EXISTING ROLE OF MEMBERS OF THE PLANNING COMMUNITY IN THIS REGARD?

This question contains two distinct perspectives that represent the ranges of choice available to decision makers within the context of coastal zone management. One is "assigned roles," and the other is "actual roles." In order to gather the data related to roles that have specifically assigned within the legislation guiding decision making, Thematic Content Analysis (Budd *et al.* 1967: 47-79) was performed on four, generically-different sets of documents. Taken together, these sets form a hierarchy of "power and authority" as they allocate roles and responsibilities among the numerous decision making levels in the U.S. and N.Y.S. systems of governance.

The first document set consists of international and federal laws or statutes that apply in the study area. International Agreements and Federal laws have the potential to indirectly empower municipalities and their planning and management communities to make decisions related to community and natural resource management and development (Table 3.3). However, while the laws, by their existence, limit the ability of municipalities to work independently of senior governments, at the same time they strive to facilitate the development of cooperative arrangements in which national, state and local governments direct their energies towards common objectives. The Great Lakes Water Quality Agreement and the U.S. Coastal Zone Management Act are both examples of this latter theme. The documents were obtained from the Director, U.S. Coastal Zone Management Program Washington, D.C. (Hamilton 1998, Personal Communication).

TABLE 3.3 - KEY INTERNATIONAL AND NATIONAL AGREEMENTS AND LEGISLATION APPLYING TO THE NEW YORK STATE COASTAL ZONE

INTERNATIONAL	
•	BOUNDARY WATERS TREATY - 1909
•	GREAT LAKES WATER QUALITY AGREEMENT (GLWQA) - 1972
•	GREAT LAKES WATER QUALITY AGREEMENT AMENDMENT 1978
•	GREAT LAKES WATER QUALITY AGREEMENT SUPPLEMENT 1983
•	GREAT LAKES WATER QUALITY PROTOCOL 1987
•	GREAT LAKES CHARTER - 1985
•	ECOSYSTEM CHARTER - 1994
•	GREAT LAKES TOXIC SUBSTANCES CONTROL AGREEMENT - 1986
NATIONAL	
•	WATER POLLUTION CONTROL ACT or CLEAN WATER ACT - 1972
	- Reauthorization 1987
•	COASTAL ZONE MANAGEMENT ACT - 1972
	- Amendments 1976
	- Improvement Act 1980
	- Reauthorization 1985
	- Reauthorization 1990
	- Reauthorization 1995
•	RESOURCE CONSERVATION AND RECOVERY ACT - 1976
•	FRESHWATER WETLANDS ACT - 1992
	- WETLANDS PROTECTION AND REGULATORY REFORM ACT 1991
	- WETLANDS STEWARDSHIP ACT 1991
	- WETLANDS NO NET LOSS ACT 1991
	- COMPREHENSIVE WETLANDS CONSERVATION AND MANAGEMENT ACT 1991
	- WETLANDS IMPROVEMENT ACT 1991
•	THE OIL POLLUTION ACT 1990 (OPA)
•	THE TOXIC SUBSTANCES CONTROL ACT 1976 (TSCA)
•	SHORE PROTECTION ACT 1988

Source: NYSDOS 1982 and 1986; Colborn et al. 1990; USCA 1985.

The second document set consists of those state laws that more specifically define municipal organization and assign planning and management roles and responsibilities to the different municipal types. This includes the State Constitution and its articles on "home rule," as well as the series of General, City, Town, and County Laws of New York State that describe and delimit government organization at each level and precisely define which municipal functions or roles are "allowed" (Table 3.4). A list of functions, such as land use regulation and development as well as associated processes, mechanisms or tools that serve to fulfil assigned obligations (ex. public participation, zoning and flood plain regulations) was analysed. This set was obtained from the

Office of Municipal Affairs, Department of State, State of New York in Albany, NY (Boes 1997, Personal Communication).

TABLE 3.4 - STATUTES GOVERNING MUNICIPAL AFFAIRS IN NEW YORK STATE

- *The Municipal Home Rule Law*, which details the basic requirements and procedures for the adoption of local laws by counties, cities, towns and villages;
- *The General City Law*, which addresses the powers and duties of city institutions;
- *The Town Law*, which involves the structure, organization, provision of services and duties of towns and fire districts, as well as fiscal procedures and requirements;
- *The Village Law*, which details the structure, organization, powers and duties of villages.
- *The General Municipal Law*, which details powers and duties associated with all local governments and school districts, including provisions relating to the maintenance of reserve funds, planning activities, cooperative undertakings, establishment of municipal hospitals, public bidding requirements, municipal airports, urban renewal, annexation and conflicts of interest;
- *The County Law*, which entails the structure, administrative organization, powers and duties of county government;
- *The Eminent Domain Procedure Law*, which details the procedure for acquiring property by exercise of the Power of Eminent Domain;

State Government

New York is governed under a constitution adopted in 1894 and put into effect in 1895, as amended. The bicameral New York legislature is made up of a senate and an assembly. The 61 members of the senate and the 150 members of the assembly are popularly elected to 2-year terms. Its chief executive is presently Governor Pataki. A list of State agencies with jurisdictional responsibility in the study area appears in Appendix 3.2.

Source: NYDOS, Local Government Handbook, 1987

The third document set consists of those state laws and policies that define New York's Coastal Management Program (Appendix 3.4). The documentation has evolved over more than a decade and has drawn management attention to more than 44 priority coastal zone issues. In theory, the laws and policies were intended to define roles that Great Lakes-St. Lawrence basin municipalities were to play in coastal zone management and its implementation through local programs and projects. This document set also derives from a strategically-placed senior government agency. In this case, the Director's Office, New York State, Department of State Coastal

Management Program in Albany, N.Y. (Beach 1999, Personal Communication).

The fourth document set is composed of the key planning and management documents of a representative set of coastal municipalities in Jefferson and St. Lawrence counties. Diagnostic field work in the spring and summer of 1998 facilitated the gathering of relevant documents (Mooers 1998, Personal Communications; and Armstrong 1998, Personal Communication). The full spectrum of guiding documents for the development and the protection of water resources (e.g. comprehensive, master, and comprehensive development), zoning, flood plain and wetland regulations; building codes; harbour and Local Waterfront Revitalization Plans (LWRP) were included. In theory, the roles that must be performed by the planning community to achieve meaningful municipal participation in federal- and state-sponsored coastal zone management initiatives should have been revealed. It should also have revealed how and when alternative perspectives may come to bear on planning and management. The **Town of Clayton, Village of Massena, and City of Ogdensburg** were selected for more detailed analysis.

In order to systematically analyse this "universe of content," a specific content analysis template was employed (Table 3.5). It consisted of six qualitative criteria of institutional analysis that were to be "searched for" during analysis. The analysis demanded that "concrete" text citations be extracted for comparison. A similar template has been shown to be extremely valuable in the institutional analysis of water resources management in North America, Australia and Europe (Mitchell 1997: 256-7).

Examination of the relationship between assigned roles and roles actually being played was intended to display a sensitivity to the perception expressed earlier that research and researchers were "alien" to the planning and management context of the St. Lawrence River coastal zone. To address this concern in research analysis, therefore, in addition to access to archival planning

**TABLE 3.5 - CONTENT ANALYSIS TEMPLATE:
ASSIGNED PLANNING AND MANAGEMENT ROLES OF NEW YORK STATE MUNICIPALITIES**

Criteria	Town - Clayton	Village - Massena	City - Ogdensburg
1. Context "Power and Authority Hierarchy"	• represents the three municipal types, bridges the two counties and is subject to coastal regulations. • includes historical, cultural, economic and institutional dimensions of the management regime.		
2. Legitimation or Legal Standing	• includes political commitment, in form of statutes, financial and/or administrative support by and for the management regime. • includes the full spectrum of guiding documents for the development and the protection of their water resources		
3. Municipal Structures	• includes the number and type of organizations responsible for management functions, eg. Planners, Planning Boards and Zoning Boards of Appeal (Clayton has no planner on staff - relies on County).		
4. Functions, Roles and Responsibilities	• includes only <i>generic</i> functions (for example: policy development, planning, development, regulation, enforcement) in this case.		
5. Processes, Mechanisms Utilized	• considers interactions, such as interdepartmental, public participation, working groups, interdisciplinary techniques employed in the management regime.		
6. Perceptions, Attitudes and Values	• considers perceptions, attitudes and values in the assigning and managing of roles (does perception of role assignment enhance sharing and cooperation or competition among stakeholders?)		

Source: Adapted from Mitchell 1987

documents for content analysis purposes, every attempt was employed to involve personal contact in the research process. This involved **one-day long interviews** and joining in local government workshops.

Long Interviews were conducted with approximately 25 key individuals involved in coastal zone management and municipal affairs in Jefferson and St. Lawrence counties. A Long Interview Participants' list (Table 3.6) was first generated from information gathered during diagnostic field trips and participation in two "Local Government Conferences" (April 9 and September 22, 1998). The field trips and conferences were necessary to assure proper participant identification, maximum participation reach across planning and management experience, and support for a fall 1999 interview schedule.

Determining representation of interviewees included:

- The identification of key agencies and actors, decision makers, policymakers (IJC, NYS DEC, etc);
- The choice and availability of interviewees (comparison of perspectives present actors vs former/retired actors) that might identify incongruencies, changes of perspectives, long-term vs short-term perspectives.

Respondents who participated in Long Interview Technique sessions (Table 3.6), were those individuals in closest contact with Upper New York State coastal zone management and its municipal expression. They were identified using a "corroborative triad approach." The Approach involved the independent identification of key individuals by at least three other participants, from among three different domains. The underlying assumption here was that positions in these domains were strategically placed and had the most comprehensive "experiential knowledge" of planning and management roles.

TABLE 3.6 - LONG INTERVIEW RESPONDENTS LEDGER, ST. LAWRENCE AND JEFFERSON COUNTIES, NYS

(1) No.	(2) Respondent	(3) Date	(4) Location
	International Joint Commission (IJC)		Ottawa, ON
1	Geoffrey Thornburn, GLWQA Annex 2 Committee	May 20, 1999 Aug., 1999	" "
	Jefferson County Planning Department		
2	Bruce Armstrong, Director of Planning	April 9, 1998	Watertown, NY
3	Dan Cantrell, Assistant Director of Planning	Sept., 1999	" "
4	Mike Bourcy, Community Development Coordinator	April 9, 1998; Sept., 1999	" "
	City of Watertown Planning Department		Watertown, NY
5	Patricia Falton, Planner, City of Watertown	August, 1999	" "
	Cooperative Tug Hill Commission (THC)		Watertown, NY
6	Bob Quinn, Director THC	Sept 14, 1999	Watertown, NY
7	Phil Street, Planner, THC	August, 1999	" "
8	Jean Watenbury, Planner, THC	August, 1999	" "
	Cooperative Tug Hill Commission		Watertown, NY
Oct 5, 1999	Monthly Staff Meeting with Circuit Riders	Oct 5, 1999	" "
9	Phil Street, Planner, THC	Oct 5, 1999	" "
10	Jane Jones, Cooperative Tug Hill Council	Oct 5, 1999	" "
11	Paul Baxter, North Shore COG, Salmon River Local Government Services Cooperative	Oct 5, 1999	" "
12	Stephen Hunter, North Oneida County COG	Oct 5, 1999	" "

	NYS Department of State, Coastal Resources Division		
13	Tom Cutter	Sept 14, 1999	Watertown, NY
14	Jeffrey Beach, responsible for the North Country and he alone knows all the ins and outs: who has LWRPs, who does not, etc.	Dec 15, 1999	Albany, NY
	Development Authority of the North Country (DANC)		Watertown, NY
15	Tom Sauter, Director DANC	Sept 14, 1999	" "
	Local Government Conference, Participant Observation	April 2, 1998	Jefferson College, Watertown, NY
	Local Government Conference, Participant Observation	Sept 22, 1998	Maxcy Hall, SUNY Potsdam, NY
	Local Government Conference, Participant Observation	Sept 29, 1999	SUNY Potsdam, NY
	Local Government Conference, Participant Observation	Oct 3, 2000	SUNY Potsdam, NY
	St. Lawrence County Planning Department		Canton, NY
16	Richard Mooers, Director	Oct 19, 1999	" "
17	Keith Zimmerman, Assistant Director	Oct 19, 1999	" "
18	Jason Pfothhauer, Planner II	Oct 19, 1999	" "
19	Jon Montan, Planner I	Apr. , 2001	" "
	Merwin Rural Services Institute (MRSI) SUNY		Potsdam, NY
20	Dr. Ram Chugh, Director MRSI	Oct 19, 1999	Potsdam, NY
	City of Ogdensburg		Ogdensburg, NY
21	Martin Murphy, Director of Planning and Development	Dec 10, 1999	" "
	21st Century Project		

22	Ruth-Ellen Blodgett, Director, North Country Health Services, formerly with Cornell Extension Services	April 9, 1998	Watertown, NY
	NYS Department of Environmental Conservation (DEC)		
23	Jay Bloomfield, Chief: Lake Services Citizens Statewide Lake Assessment Programs and Other Volunteer Monitoring Management Plans	Dec 15, 1999	Albany, NY
	New York Planning Federation (NYPF)		
24	David Church, Director NYPF	Dec 15, 1999	Albany, NY
	League of Women Voters		
25	Mildred Whalen	April, 1999	brief phone int.
	Environmental Services Division St. Regis Mohawk Tribe		St. Regis Indian Reservation, NY
	Mowhawks (Ken Jock, Francis Jock)	April, 1999	protocol delayed possibility
	Massena Planning Board		Massena, NY
	Ron Johnson, Chair, Town of Massena PB Director of Planning and Development	Oct 3, 2000	declined politely

- (1) The "No." column is an interview identifier, but is not a chronological ordering of interviews.
- (2) The "Respondent" column identifies the interview respondent and his/her title.
- (3) The "Date" column identifies date interview or interviews were held.
- (4) The "Location" column signifies interview location.

The Long Interviews were guided by a "dialogue development template" (Table 3.7). This instrument serves the purpose of identifying the general themes that were to be addressed. More specifically, the template moves from general contextual themes and issues surrounding coastal zone planning and management, to more specific queries about planning and management roles. The

**TABLE 3.7 - LONG INTERVIEW DIALOGUE DEVELOPMENT
TEMPLATE**

**I- PERCEPTION OF GREAT LAKES-ST. LAWRENCE COASTAL ZONE
MANAGEMENT ISSUES:**

- Issues
- Problems
- Causes
- Solutions (local, State-wide, basin-wide, approaches)
- Other

**II- PERCEPTION OF GREAT LAKES-ST. LAWRENCE COASTAL ZONE
MANAGEMENT AND THE ECOSYSTEM APPROACH**

- International Joint Commission (ecosystem approach source)
- Federal Agencies and Actors
- State Agencies and Actors
- Regional and Municipal Agencies and Actors
- Non-Governmental Agencies and Actors
- Other Agencies and Actors

**III- PERCEPTION OF MUNICIPAL ROLE IN COASTAL ZONE PLANNING
AND MANAGEMENT**

- Land Use Planning
- Wetlands Management
- Ports and Harbour Management
- Flood, Erosion Control, and Flood Plain Management
- Other

**IV- PERCEPTION OF MUNICIPAL CAPACITY TO PARTICIPATE IN
COASTAL ZONE MANAGEMENT AND THE ECOSYSTEM APPROACH**

- Comprehensive Planning
- Existing Capacity
- Strengths/Weaknesses
- Opportunities for Improvement
- Other

**V- PERCEPTIONS OF BARRIERS, FACILITATORS, BRIDGING
MECHANISMS**

a) Barriers-

- Financial
- Technical
- Legal
- Attitudinal

b) Facilitators-

- Individuals
- Agencies and Actors

c) Bridging Mechanisms

- Context
- Advantages
- Case Studies

intent was to compare assigned and actual roles performed.

5) ASSOCIATED RESEARCH QUESTIONS 4: WHAT EVIDENCE IS THERE OF INNOVATIVE WAYS AND MEANS OF ADOPTING AN ECOSYSTEM APPROACH AT THE MUNICIPAL LEVEL?

Diagnostic field studies exposed and generated opportunities to seek-out comprehensive answers to the research question. The researcher was invited by senior planners of St. Lawrence and Jefferson counties to formally participate in a set of Local Government Conferences and Workshops. The researcher became a “participant observer.” These fora have been on-going for over ten years and they provide a venue for federal, state and municipal leaders from the public and private sectors to come together to address issues and strive for consensus.

There are two “Local Government Conferences and Workshops” annually in the study area. The first is an April meetings and is held at St. Lawrence College, Watertown, N.Y. The key sponsor is the Tug Hill Commission. The second is a September meeting held at the State University of New York (SUNY), Potsdam, N.Y. It is sponsored primarily by the Merwin Rural Services Institute of SUNY and the St. Lawrence County Planning Department. Between 150 and 300 strategically placed individuals attend the spring and fall meetings. They are excellent environments to canvass municipal leaders/politicians, planners, managers, academics, the media, business and others in an effort to identify innovative ways and means of enhancing municipal capacity. In addition, workshops facilitators were shown to have expertise in municipal and state law, municipal and state environmental planning and management, and state coastal zone management programs. More specifically, the Fall 2000 Workshop was devoted to a comprehensive review of legal cases passing before local Zoning Review Boards in New York State over the period 1995-2000. The value of zoning as the singular planning tool in the environmental and coastal zone context was analyzed.

The Spring (1998, 1999, 2000) and Fall (1998) Local Government Conferences and Workshops permitted the researcher to become an “insider,” and facilitated the discussions of responses to such questions as: Are there regional organizations that serve as bridging mechanisms and enhance municipal capacity by providing human, technological and informational resources? What are the

important financial and non-financial barriers to municipal capacity building in Upper New York State? What progress has been made in municipal support for coastal and other forms of environmental management?

The following chapters provide the results of the application of these methods and techniques.

CHAPTER IV

COMPONENTS OF THE ECOSYSTEM APPROACH OF THE INTERNATIONAL JOINT COMMISSION

PURPOSE

This chapter critically examines the exposure given to the Ecosystem Approach of the International Joint Commission (IJC). Numerous references confirm the leadership role played by the Commission in the presentation of this approach to natural resource planners and managers in the Great Lakes basin since 1978 (IJC 1986: 1; 1997b: 33).

No other institution has the IJC's broad mandate or its successful track record in preventing and resolving transboundary disputes around environmental and water-resource issues, and no other institution provides the opportunities for officials from all levels of government, scientists, stakeholders and interested citizens to work together on these issues... Of the Commission's recommendations.. perhaps most important of all, the implementation of an ecosystem approach to stewardship of the resource, have contributed much to the joint mission of Great Lakes restoration (IJC 1997a: 1).

CONTEXT

The ecosystem approach, as proposed by the International Joint Commission, however, is a normative concept that has provoked much debate. A certain amount of criticism "outside" the IJC is to be expected as a matter of course. For example, the ecosystem approach has been viewed as simply one among the latest fashionable buzzwords to make its way into the planning field (IJC 1991: 5; Burby (ed.) 1998: 234; Falton 1998, Personal Communication). Moreover, arguments regarding ecosystem boundaries within an area the size of the Great Lakes are to be anticipated, such as those that regard the concept as "too vague" to be practicable in a complex resource management framework such as the coastal zone (Callicott 1995; Fitzsimmons 1996; and Omernik 1997) .

Perhaps less anticipated, however, is concern expressed "internally", that is, from the IJC itself, its Boards, Task Forces and Committees. Initially, concern that this "new" approach might undermine existing water quality initiatives, or become so all-encompassing that it would paralyze traditional management was raised (IJC 1995b-5). But, to this were added, "persons unfamiliar with the concepts...", find the ecosystem approach "frequently a misused and misunderstood phrase" (IJC 1981:1), "confusing" (IJC 1995), and "diffuse and ambiguous" (Allen *et al.* 1994: 20). Yet, the IJC affirms that the ecosystem approach "insists upon rigorous definitions of ecosystems" (Allen *et al.* 1994: 4). One of the IJC's principal advisory boards, the Science Advisory Board, acknowledges that this confusion is a major hurdle to its implementation: "While there is a growing consensus on the need for an ecosystems approach, there is a major communication problem between the various publics and even among institutional groups with respect to a common understanding of what constitutes an ecosystems approach" (IJC 1987: 1). From her extensive analysis of the RAP program, MacKenzie (1996: 7) concludes, "Implementation of the concept, remains formidable." This critical examination of ecosystem approach evolution seeks, therefore, to find hard evidence of its transformation from a document-driven, purely normative concept into an action-driven, tangible, operational guide for decision makers in the Great Lakes basin. The pace and substance of this evolution is believed to be inextricably linked to the Great Lakes Water Quality Agreement (GLWQA), a binational agreement drafted and signed in 1972 by the governments of Canada and the United States. The 1978 re-authorized Great Lakes Water Quality Agreement stated that the ecosystem approach would be the framework by which the Agreement's water quality and management goals would be achieved (IJC 1977: Art. 9; IJC 1986: 8). It was recognized, moreover, that this framework, like the Water Quality Agreement itself, would continue to evolve in a definitional sense through time.

..policy and management goals are not static... Management goals in the Great Lakes are currently undergoing further evolution as the "ecosystem approach" to management merges with the concept of sustainable development... and even if the concept of sustainable development is adopted, the basic vision of sustainability for the GL region will continue to change and be refined as society's view of environmental management and protection evolve (CGLRM 1989: 6).

The GLWQA is part of this dynamic process. Article X of the Agreement calls for the Parties (*i.e.* Canada and the United States) to "conduct a comprehensive review of the operation and effectiveness of the Agreement following every third biennial report of the Commission..." It has thus been revised and reauthorised five times since 1972: in 1978, 1983, 1987, 1993 and 1997 (IJC 1999). The Water Quality Agreement has, moreover, generally received wide-spread public and institutional support. In both the 1993 and 1997 reauthorizations, for example, the interested public and the IJC's chief advisory board, the Water Quality Board (WQB), endorsed the Agreement, adding that "fundamental changes in the Agreement are not needed" (IJC 1992). The Board suggested, rather, that "...[reauthorization] reviews should focus on how to improve implementation of the Agreement and not on changes to it" (IJC 1992). One would anticipate, therefore, frenetic activity among IJC scientists, planners and managers before and after each reauthorization, and that appreciable progress would be made in better defining ecosystem approach components.

Adoption of the ecosystem approach by the IJC as a managerial framework has not, however, guaranteed its implementation by agencies and actors responsible for managing coastal resources. The IJC has admitted moreover that, prior to 1987, "no significant operational mechanisms (had) been instituted to facilitate the implementation of an ecosystem approach" in Great Lakes jurisdictions - states, provinces and municipalities (IJC 1987: 14). The IJC initiated Remedial Action Plans (RAP) for Areas of Concern and Lakewide Management Plan (LaMP) programs for other areas, to serve as laboratories for practical application of ecosystem approach theory (IJC 1995a: 6). In essence, both the RAP and LaMP processes were said to embody an ecosystem approach and provide clearly labelled, well-defined blueprints on how to implement such an approach (IJC 1996c; Needham and Meng 1996). Yet, for St. Lawrence and Jefferson counties, NYS, the RAP process, by nature of its concentration of clean-up of severely contaminated sediments and their industrial sources, was still perceived as media- or site-specific rather than ecosystem based (GLC 1999). A need for definitional clarification required the IJC to convene workshops in 1993 and 1995 to address this.

Both the United States and Canadian governments have expressed favourable support for the Agreement and its ecosystem approach (USEPA 1999b, Environment Canada 2000). Moreover, over

160 agencies, businesses and organizations have endorsed the Great Lakes Ecosystem Charter in which the ecosystem approach is expressly recognized as the necessary tool for proper management of Great Lakes and its coastal zones. One wonders, therefore, why there are so many repeated, insistent reminders that future managerial efforts within the Great Lakes be "directed toward implementing what the [United States and Canada] have previously agreed to" in the GLWQA (IJC 1994b: 18).

THE ECOSYSTEM APPROACH TEMPLATE

A template was developed which consolidates components of an ecosystem approach (Chapter 3). This construct, as previously discussed, is a layered device consisting of three sets of ecosystem approach components and twenty-eight associated sub-components (Table 3.3). They relate to key themes and issues of concern to municipal planners and managers. These items are the observational units for the content analysis of relevant IJC documents.

The Ecological Component of the Template

The Ecological Components are investigated in terms of explicitly and implicitly stated references that define and clarify complex aspects of the Great Lakes basin ecosystem. For example,

The ecosystem approach is used in decision-making to account for system-level effects from the interactions of all ecosystem components (e.g. nutrients, primary production, forage fish, predatory fish, habitat, chemical contaminants, climate, and human use) (IJC 1995: 11).

An ecosystem approach is therefore composed of bio-physical elements which must be identified, clarified and understood within complex interacting systems. These include the recognition and study of relationships between species, toxicity and ecosystem health; and the clarification of concepts such as system stressors and ecosystem integrity. Coastal zone management must also consider such bio-physical elements as lake level and water quality; the notion of 'indicator species' as a way of measuring ecosystem health; and ecological boundaries, such as watersheds, of direct concern to municipal decision-makers. A common criticism of the ecosystem

approach as a management unit is the question of ecosystem boundaries versus jurisdictional boundaries. "There is not one ecosystem to address," Allen *et al.* (1994: 5) say, "but rather we choose an operational ecosystem for the question at hand... In the ecosystem approach, the effort is to achieve appropriately expansive questions so that the system becomes defined to be particularly inclusive." In the Great Lakes region, moreover, the ecosystem approach must respond to a much wider array of concerns than those of a purely bio-physical nature; "critical ecosystem components also include the ethical, cultural, biological, social and economic human components" (Allen *et al.* 1994: 19).

The Implementation and Administration Component of the Template

The Implementation and Administration Components are investigated in terms of explicitly and implicitly stated references that define and clarify complex aspects of the implementation puzzle. Nine elements have been identified in the template that are considered essential to this clarification. In essence, they should help provide an answer to the question: How can an Ecosystem Approach be implemented in municipalities bordering the Great Lakes?

Content analysis of implementation and administrative sub-components encompasses references to the implementation framework or guide; systems, processes, or solutions of governance; the "allocation", and "rationalization" of jurisdictional powers and responsibilities; regulations, acts and legislation, and other institutional elements that relate to "control" or "transparency" of the implementation process, such as recommendations, communications, and implementation cost-related items. The Water Quality Agreement explicitly designates, for example, the roles and the responsibilities of each level of governance related to its implementation:

"Under the [GLWQA] the IJC is required to monitor and assess progress made pursuant to the GLWQA, in particular the adequacy of actions by the two federal governments, the province of Ontario, and the eight Great Lakes states" (IJC 1997: 4).

The Facilitating Processes and Mechanisms Component of the Template

The Facilitating Processes and Mechanisms components are investigated in terms of explicitly

and implicitly stated references that define and clarify the meaning of municipal capacity. In essence, they should help provide an answer to the question: What processes and mechanisms are needed to enhance municipal capacity so that the ecosystem approach can be used as a planning and management framework or guide?

THE ECOSYSTEM APPROACH: SOURCES OF INFORMATION

The IJC is a prolific producer of scientific, planning and management reports. The frequency and terms of reference of many of these documents are stipulated within the GLWQA. For example, Article VII of the 1987 Water Quality Agreement directs the Commission (or IJC) to make a full report to the governments of the United States and Canada, and to the State and Provincial Governments at least biennially on progress toward Agreement objectives. Prior to 1987, annual reports were submitted. Article VIII of the Agreement establishes the principal binational advisory bodies that assess and monitor progress on Agreement Objectives, then report their findings to the Commission. The WQB, for example, is made up of senior program managers from state, provincial and federal regulatory and resource management agencies and is the principal advisor to the IJC on all matters relating to the GLWQA. Advisory Boards, such as the WQB and Science Advisory Board (SAB) submit biennial reports to the Commission. Reports are also submitted by other advisory boards such as the Annex 2 Advisory Committee, the International Advisory Board on Air Quality, the Council of Great Lakes Research Managers as well as by Committees and Task Forces appointed for specific tasks.

The United States and Canada may also present the IJC with "References," or special study requests, that can result in the creation of investigative bodies or task forces, such as the Great Lakes Water Levels Task Force and Levels Reference Study Board. Finally, such "References" and studies result in comprehensive reports that are published and accessible to the public.

This total universe of content associated with the GLWQA and informally reviewed as candidate items for content analysis consisted of 57 documents produced by many of the agencies and actors listed above. There were 5 Annual Reports, 9 Biennial Reports, 9 Research and Science Advisory Board Reports, 8 Water Quality Board Reports, as well as 26 reports addressing specific

(dedicated) or general (undedicated) themes from workshops and conference proceedings (APPENDIX 4.1).

Thirty-three of these documents that contained specific mention of an ecosystem approach were then selected for analysis using the observational units of the template (APPENDIX 3.2).

THE ECOSYSTEM APPROACH: EXPOSURE THROUGH TIME

The publication of IJC reports, generally, is linked to the six preparatory periods before each GLWQA reauthorization (1978, 1983, 1987, 1993, 1997, 2001). Although documents referring to the ecosystem approach appear in each of the reauthorization periods, the number of these documents per period differs greatly. The production of documents pertaining to the ecosystem approach appears to be undertaken as a response to specific requests for clarification and needs for guidance. A number of factors can contribute to these requests: For example, the government of either the United States or Canada can ask the Commission to monitor situations and to recommend preventative or remedial actions, as in Areas of Concern. The IJC may also receive requests directly from the public during or following the Biennial Forums. Or, one of the IJC's advisory boards, as mentioned earlier, recognizing that the approach has not received widespread support, can ask for clarification: "While governments deserve praise for support of the ecosystem concept, there are mixed results in its actual implementation under the Agreement" (IJC 1994b: 1). Or, the Commission itself may want to keep the evolutionary process going. The list of documents referring to the ecosystem approach shows that the IJC has historically been very responsive to requests for information regarding approaches and Great Lakes basin management issues and concerns, whether through its Advisory Boards or through its many partnerships.

THE ECOSYSTEM APPROACH: CONTENT ANALYSIS RESULTS

Content Analysis reveals a significant and progressive increase in the number of documents and citations mentioning an ecosystem approach over the 22-year period examined (Figures 4.1a and 4.1b). More specifically, during the ten years immediately following first mention of an ecosystem approach in the IJC reports (1977 - 1987), the number of documents referring to its particular

components and elements nearly doubles. This period spans the 1978, 1983 and 1987 WQA reauthorizations and is characterized by extensive institutional building in a broad range of environmental and regulatory fields to address serious water quality concerns. It includes the Clean Water Act (1977), the U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA 1980, commonly known as Superfund), and the Superfund Amendments and Reauthorization Act (SARA 1986, amending CERCLA) among many others. It is a process pushed forward by public concern about severe health hazards and impairment of beneficial uses of water resources. This ten year period of institutional building culminates in the explicit establishment in 1987 of an ecosystem approach to Remedial Action Plans in 43 specific localities, and in Lakewide Management Plans for individual Great Lakes.

During the next two reauthorization periods (1987-1993, and 1993 until the twenty-fifth Anniversary of the GLWQA in 1997), the number of documents mentioning the ecosystem approach doubles again. This results from the number of institutional arrangements and new programs established under the 1987 GLWQA and its 17 Annexes. This includes the RAP and LaMP processes (Annex 2), the establishment of Committees for each Annex, and initiatives leading to the Great Lakes Charter (1994), the Canada-Ontario Agreement (1992), and numerous other arrangements. The array of new institutions has correspondingly generated an increased number of documents mentioning ecosystem approach components (Figure 4.1a). At the same time, the number of times that ecosystem approach components are mentioned within each document multiplies also (Figure 4.1b). A representative selection of citations is provided in Appendix 4.4.

Of particular note is that, within the first two years only of the most recent reauthorization period (1998-1999), the number of times ecosystem approach components are mentioned outnumbers that of any of the preceding periods. One would expect that this significant and steady increase in the number of documents and citations between 1977 and 1999 demonstrates deliberate efforts to clarify the role of an ecosystem approach in the decision-making process as stated in the GLWQA and, in addition, that this clarification has been progressively maturing over the 22-year period (SAB 1987: 11).

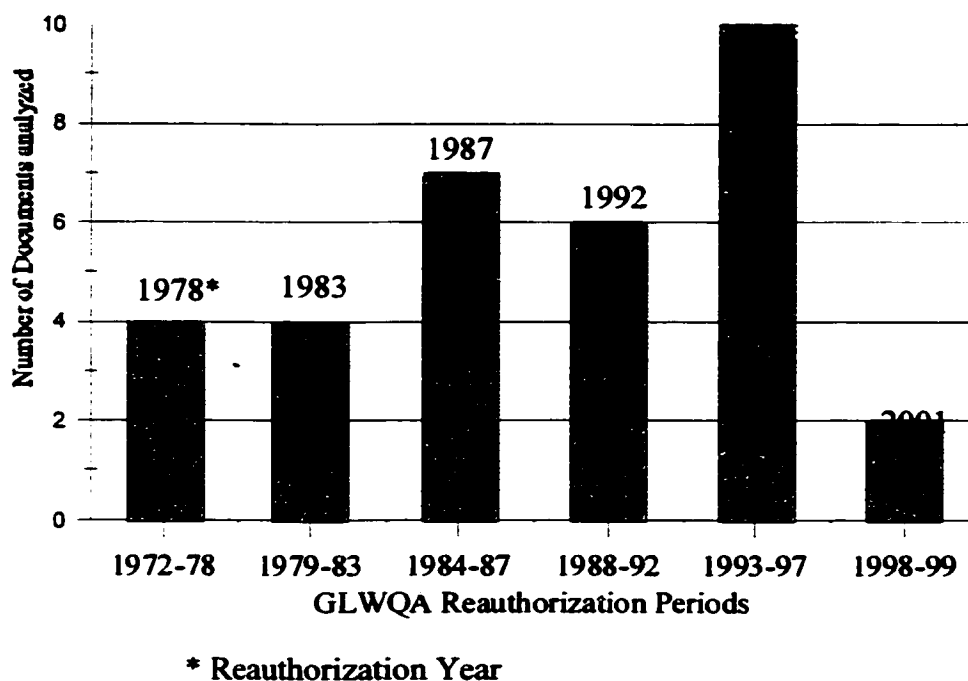


FIGURE 4.1a - NUMBER OF IJC DOCUMENTS ANALYSED PER PERIOD WITH REFERENCE TO ECOSYSTEM APPROACH

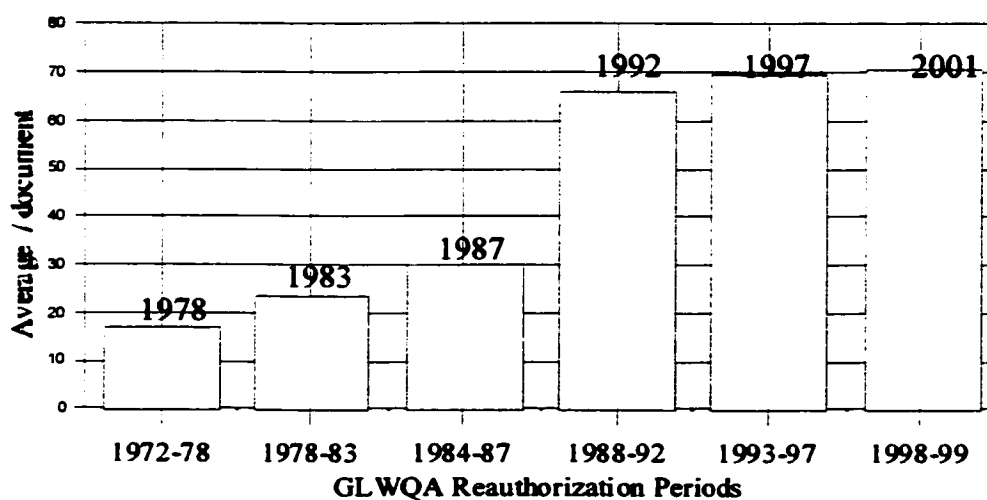


FIGURE 4.1b - AVERAGE NUMBER OF CITATIONS/DOCUMENT FOR EACH REAUTHORIZATION PERIOD

A deliberate attempt was made during content analysis, therefore, to distinguish between explicit and implicit expression of ecosystem approach components (Figure 4.2). This distinction was based on the premise that, providing a decision-maker with an explicit mandate raises the "assurance or even expectation that [the desired outcome] will occur as a general rule" (IJC 1980). It is normal to conclude, therefore, that making explicit reference to a concept, an element of an approach, or a mandate, provides guidance or directives that will contribute both to its comprehension and its application. In contrast, making only implicit mention of a component, or simply alluding to it, while it may aid in understanding does not provide a clear directive for its application.

The most noteworthy overall trend is first, a marked increase in the number of both explicit and implicit references to elements of the ecosystem approach throughout the 22-year period (Figure 4.2). Second, the number of explicit statements is considerably greater than the number of implicit statements. For example, between 1977 (ecosystem approach first mentioned) and the 1987 Protocol, explicit references actually outnumber implicit references by a factor of five-to-one. This is a particularly positive observation considering the fact that the 1987 Protocol "explicitly" mandates use of an ecosystem approach in action plans in both local Areas of Concern and lake-wide. But, even before the ecosystem approach is specifically mandated for use in the RAP process in 1987, the IJC and its Boards and Task Forces were already setting explicit targets, and establishing mandates and tasks relating to various components of an ecosystem approach (Figure 4.2). A number of considerations that would be addressed in an ecosystem approach are explicitly referred to again and again, and others elaborated upon. The following two sections provide examples.

Which Ecosystem Approach Components Receive most Attention?

Not all components or sub-components mentioned in the IJC literature receive equal attention (Table 4.1). Clearly the Implementation and Administrative Component has received the most attention overall. Among the sub-components or elements of an ecosystem approach, Jurisdictional Powers (Implementation and Administration), Ecological Stresses (Ecological Components), and

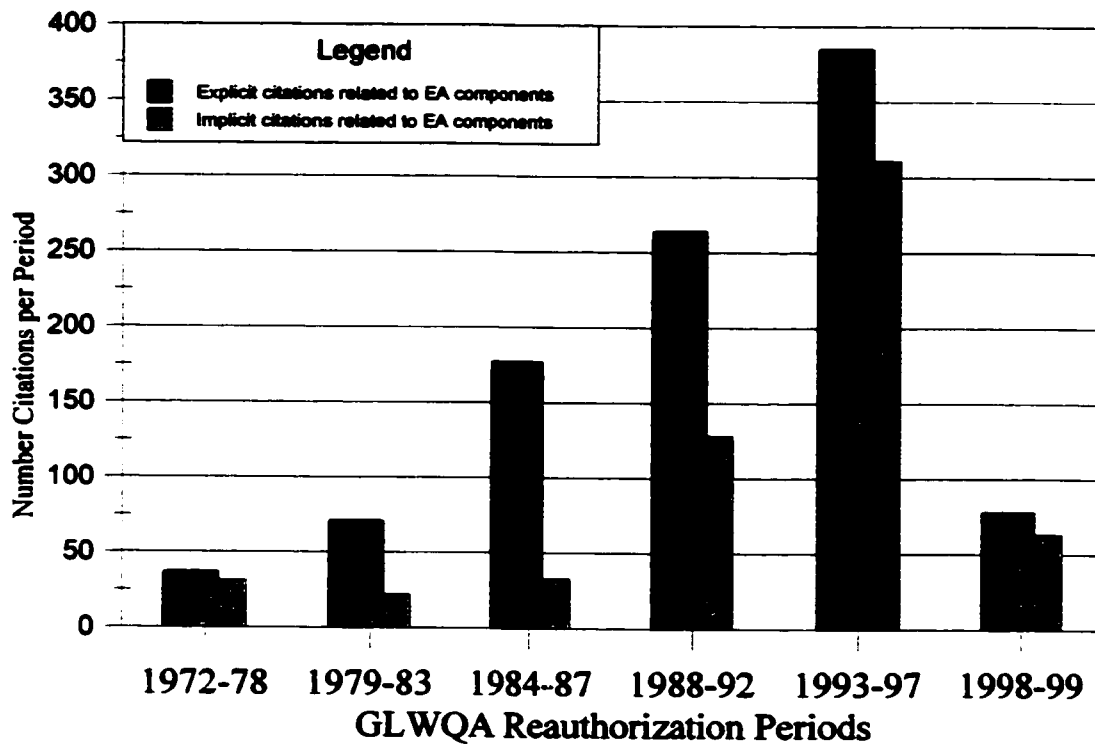


FIGURE 4.2 - COMPARISON OF TOTAL EXPLICIT AND IMPLICIT CITATIONS RELATED TO ECOSYSTEM APPROACH TEMPLATE

Continuous Research (Facilitating Mechanisms) receive equal attention.

Across re-authorization periods, the emphasis on certain essential elements of ecosystem approach implementation has changed and fluctuated as the IJC, as the informed and authoritative body, responded to the need for guidance on issues as they arose (Figure 4.3). One notes, for example, that initially, Ecological Components took precedence in the IJC discourse on the ecosystem approach. From 1988 on, however, its relative importance diminishes.

**TABLE 4.1 - CONTENT ANALYSIS RESULTS: ECOSYSTEM APPROACH
COMPONENTS IN DESCENDING ORDER OF FREQUENCY
OF EXPLICIT MENTION**

Components with greatest number of references

Frequency of Explicit Mention - Descending order	
Ecological Components	
73	Ecological Stresses
46	Definition
45	Ecological Principles
32	Ecosystem-Economy Linkages
29	Ecological Variables
25	Stakeholder Perspectives
20	Ecological Boundaries
18	Relationship Other Concepts
16	Constructive Criticism
304	Total Ecological Components
Implementation and Administrative Components	
84	Implementation Framework
65	Economic Costs
60	Jurisdictional Powers
56	Cooperation
51	Institutional Perspectives
43	Coordination
42	Governance
28	Communication
27	Constructive Criticism
456	Total Implementation and Administrative
Facilitating Processes and Mechanisms Components	
53	Continuous Research
50	Monitoring and Assessment
40	Capture Pluralism
27	Human Resource Development
21	Information Sharing
17	Voluntarism (Labour)
16	Voluntarism (Behaviour)
16	NGO Contribution
12	Technical Support
2	Constructive Criticism
254	Total Facilitating Mechanisms

Components with least number of references

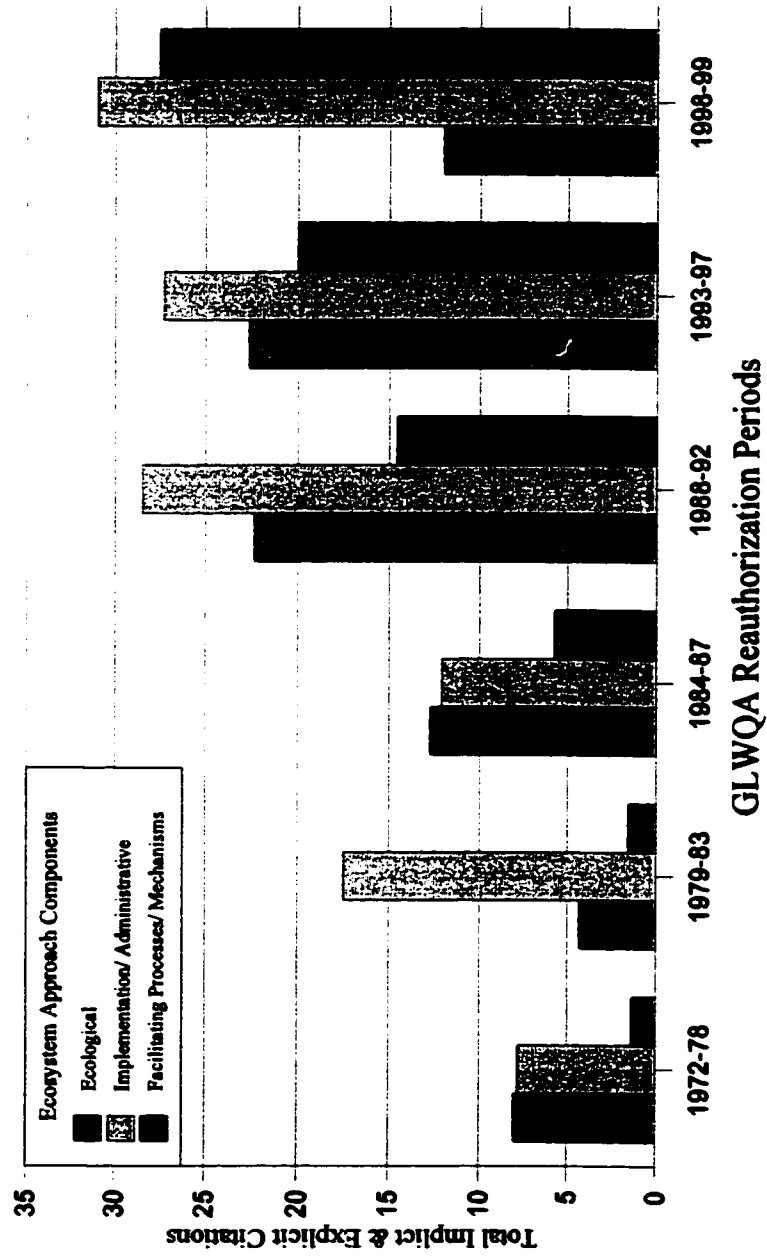


FIGURE 4.3 - AVERAGE CITATIONS PER DOCUMENT (EXPLICIT AND IMPLICIT COMBINED) FOR EACH ECOSYSTEM APPROACH COMPONENT

Have Ecological Components been given sufficient clarification, or have Facilitating Processes and Mechanisms taken on significantly greater and greater importance? Interpretation would differ greatly, for example, if Facilitating Processes and Mechanisms, while mentioned more and more frequently, were only mentioned implicitly whereas Ecological Components, though far less frequently referred to, were explicitly stated. This is not the case, however. In fact, it is quite the opposite. It becomes very important for purposes of interpretation, therefore, to identify which Ecological Components in particular are being only implicitly stated, and which Facilitating Processes and Mechanisms are being emphasized as increasing more important, and in which period of activity (Figure 4.4).

Initially then, any reference to Ecological Components is stated quite explicitly (Figure 4.4). The number of explicit references to this component continues, in fact, a strong upward trend until approximately 1992. The period 1978-1992 is a period in which institutions of planning and management in the Great Lakes were responding to widespread, complex concerns such as toxic substances polluting the basin, increasing population and associated demands for Great Lakes basin water and other resources, and pressures for industrial development that required explicit detail. Health hazards and use impairments resulting from these ecological considerations demand that senior as well as municipal jurisdictional levels assume a role in addressing the problems. It was during this period, therefore, that the institutional processes of RAPs and LaMPs were introduced. With their establishment, existing institutional arrangements in Areas of Concern or with lake-wide responsibility were explicitly instructed to employ an ecosystem approach to remediation plans and needed guidance in order to do this. These programs contributed to a perception that many of the most polluted sites and their sources of pollution were now being cleaned up and properly managed. As a consequence, from 1992 until present, mention of Ecological Components is increasingly only implicitly stated, i.e. there is less and less obligation attached to these components, and mention is less and less frequent as well. At the same time, as previously indicated, budgetary and program restraints at senior government levels have given rise to the necessity of identifying Facilitating

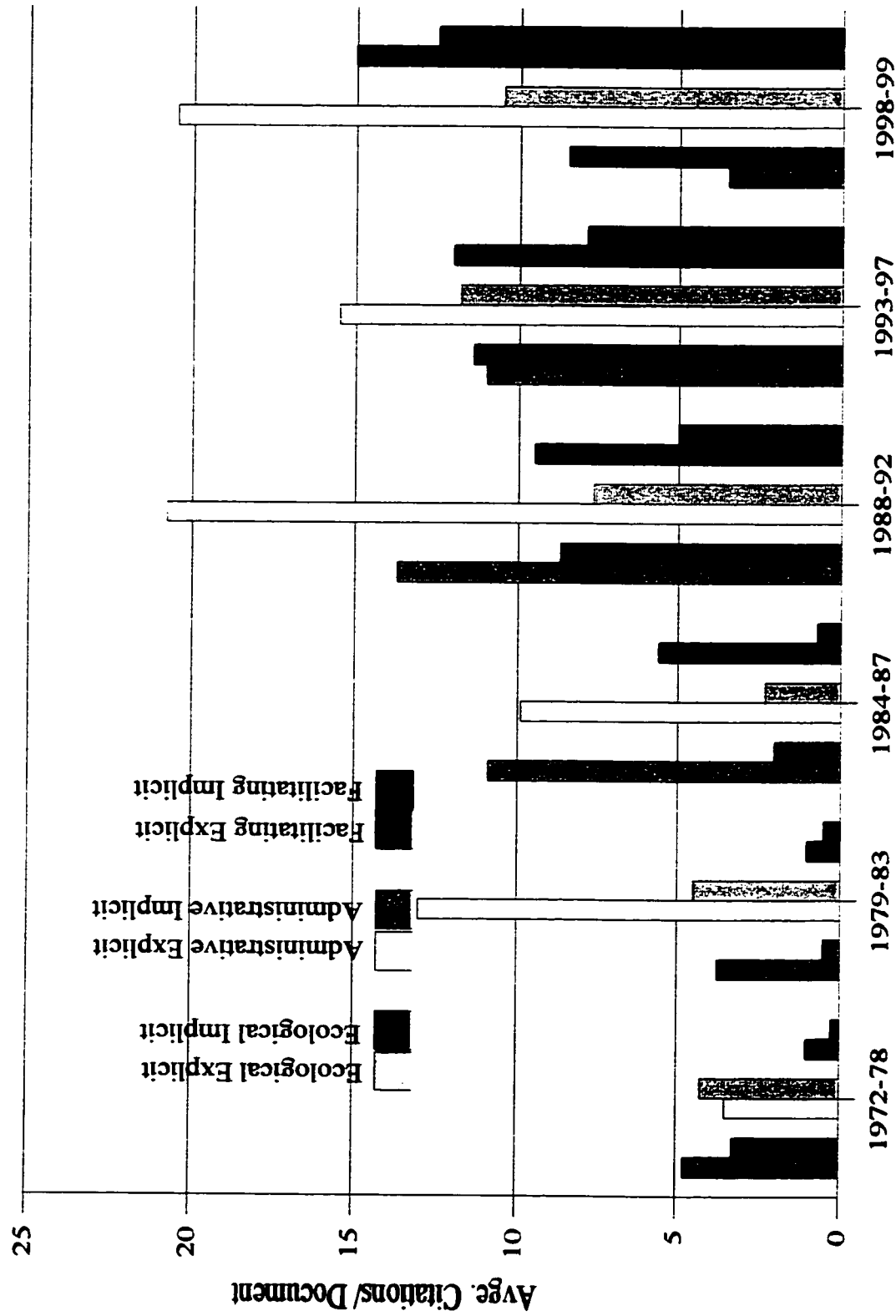


**FIGURE 4.4 - AVERAGE CITATIONS PER DOCUMENT FOR EACH ECOSYSTEM
APPROACH COMPONENT (EXPLICIT AND IMPLICIT
SEPARATED FOR COMPARISON)**

Processes and Mechanisms (IJC 1998b). IJC literature increasingly refers to these elements as explicitly comprising part of the ecosystem approach and as being fundamentally linked to implementation and administration of an ecosystem approach.

Displaying the results of content analysis in figures and charts is essentially synonymous with tracing the pattern of evolution of ecosystem approach implementation in planning and management in the Great Lakes-St. Lawrence River basin coastal zone throughout the 22-year period. But, its interpretation requires addressing each ecosystem approach component individually and linking them with citations. In this way, the visualization of ecosystem approach components becomes a visualization of agendas and priorities in Great Lakes planning and management decision making which should be of both interest and utility to public, private and civil institutional arrangements in the study area (Figures 4.5-4.7).

The Ecosystem Approach as a Framework to Address Great Lakes Concerns

Many of the early concerns that dominated the public agenda with regard to the Great Lakes - toxic substances, eutrophication, increasing demands for water and other resources, and development pressures - continue to plague its planners and managers today.

Growth and development along the waterfront can be controlled both at the local and state levels of government. However waterfront land owners and developers are motivated to maximize return on their investment, while municipalities often seek development which will generate the highest tax revenues. These two factors make waterfront property attractive for high density development and can generate intense pressures on local governments to allow inappropriate development." (NYSDOS 1992a; GLC 1994).

At the same time, results indicate that the IJC has played a critical "coordinating" role in addressing a number of these concerns that include developing "*mechanisms to bring together industry, governments and other sectors of society*" towards a toxic substances management strategy that employs "*integrative as well as anticipatory and adaptive strategies*" (IJC 1988: 52). The ecosystem approach is such an adaptive strategy.

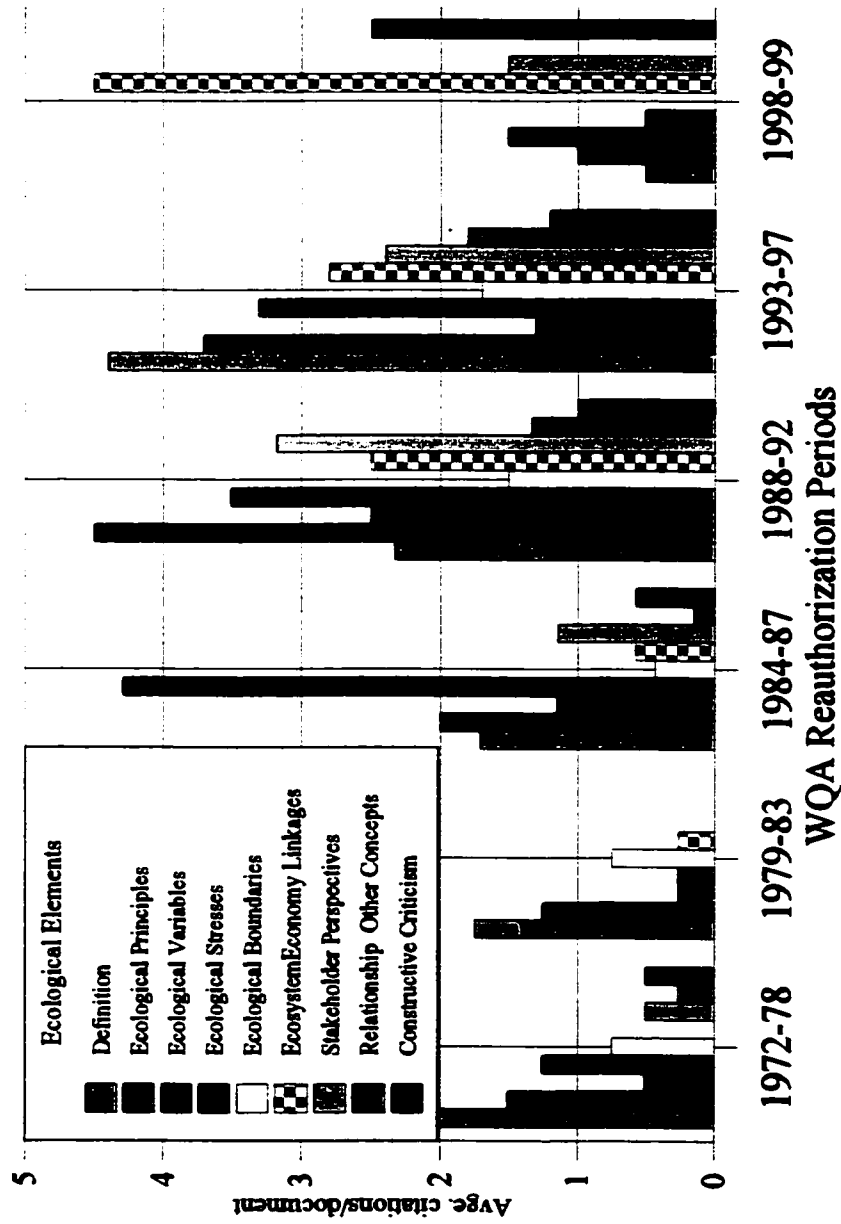


FIGURE 4.5: AVERAGE CITATIONS/DOCUMENT OF ECOLOGICAL COMPONENTS OF TEMPLATE

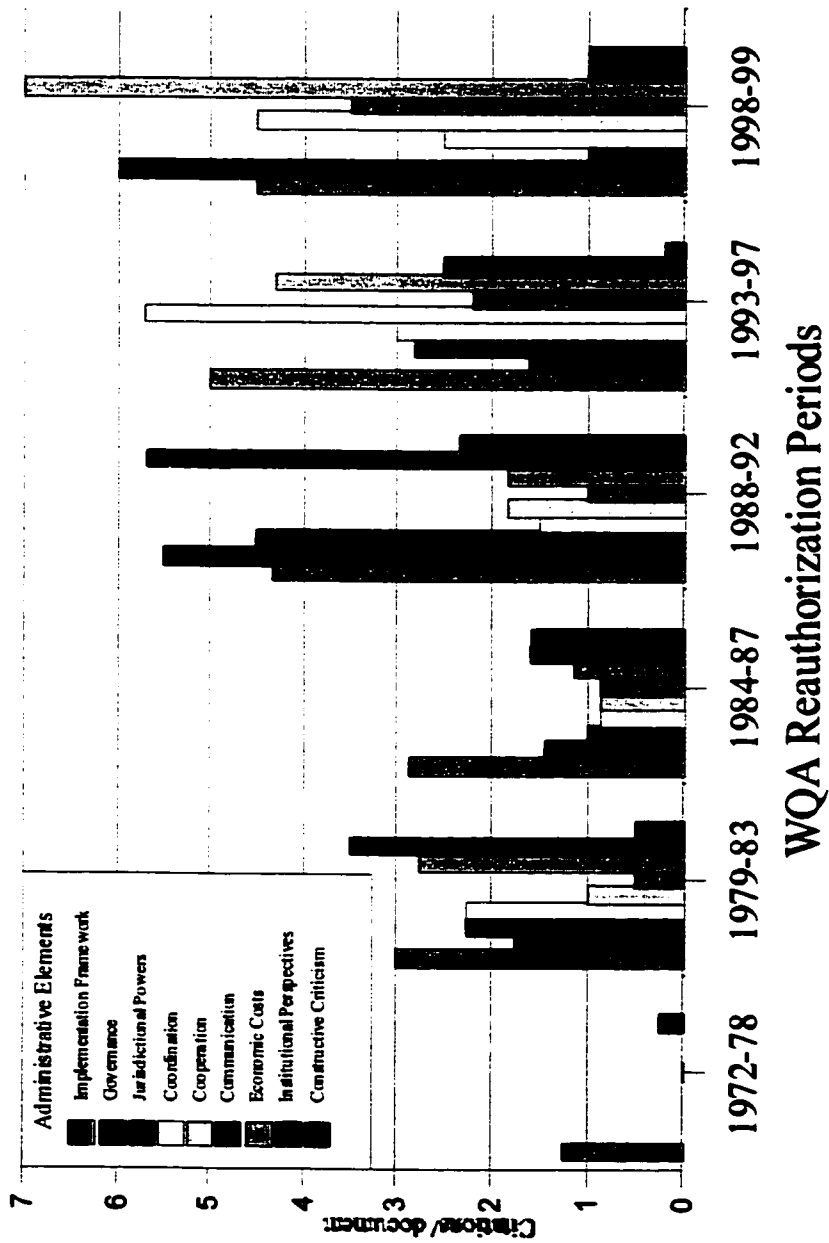


FIGURE 4.6 - AVERAGE CITATIONS/DOCUMENT OF ADMINISTRATIVE COMPONENTS OF TEMPLATE

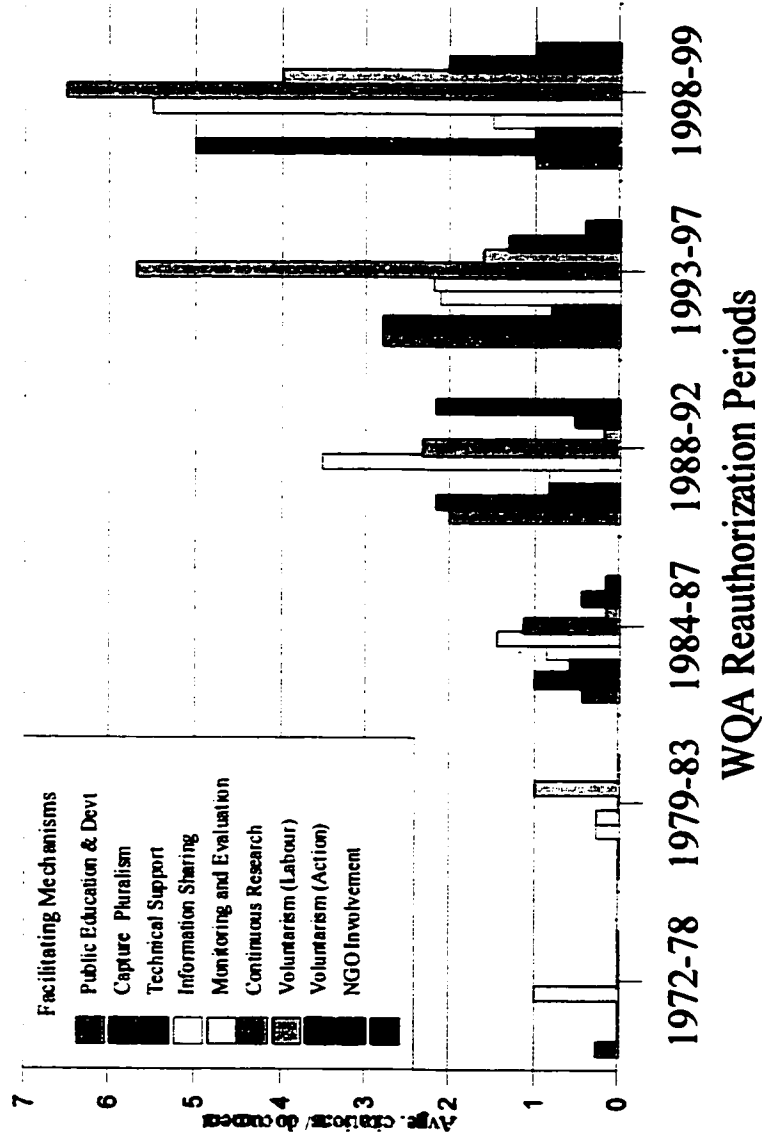


**FIGURE 4.7 - AVERAGE CITATIONS/DOCUMENT OF FACILITATING PROCESSES
AND MECHANISMS COMPONENTS OF TEMPLATE**

There is no single, explicit ecosystem approach to use, the IJC explains, but rather, resource managers are simply being called upon to adopt and use "an" ecosystem approach (IJC 1978). Some aspects of "an" ecosystem approach as a "framework" for decision makers are clarified in that 1978 report (IJC 1978: 20). But, unfortunately, in 1978, an ecosystem approach was still far from a framework that municipal planners and decision makers could implement. For example, discussion during much of the pre-RAP period centred on the ecosystem as a framework in which "jurisdictional powers and responsibilities" were being clarified. Little attention, however, was accorded, at that time, to other elements including "cooperation," "communication," "governance," and "coordination" that are considered absolutely necessary components for any strategy involving an ecosystem approach in the multi-jurisdictional RAP process (IJC 1999a). Clarification of how each these elements relates to local and senior government decision makers should be of assistance to institutions involved in multi-jurisdictional environments. A file of citations pertaining to each of these elements is available as well upon request.

Two other elements are considered essential to implementing action plans at the municipal level, whether to restore ecosystem integrity in Areas of Concern, or to develop or protect local resources through Local Waterfront Revitalization or Comprehensive Plans. These are: regulatory authority and substantial funding, since local decision-making and local economies are judged to be inadequate for proper implementation.

...reliance on local jurisdictions for environmental policy development and regulatory control has generally resulted in uneven application of environmental standards of behaviour, with effective controls or even consideration of ultimate environmental consequences being the exception rather than the rule... (which) is due in large part to the narrow geographical and functional scope of concern (IJC 1980: 60).

Despite this recognized inadequacy, beginning in the early 1980s, senior governments, adopted "a new concept of federalism," that included the devolution of programmes and responsibilities from the federal to the state (IJC 1989: 49; 1997a: 25). As the institution with perhaps the broadest mandate and vision of the entire basin, the IJC appears to have recognized and responded to the vital

necessity of elements of the ecosystem approach in addressing these management challenges. Thus, the IJC began broadening the scope and application of this mandate.

Traditional environmental management institutions at senior levels of government in both countries are losing their capacity to act and effect needed changes, owing to the devolution of their powers and dwindling resources. For its part, the Commission will continue to provide the Great Lakes citizenry with opportunities to speak and be heard.(IJC 1998b: 29).

This is neither a new mandate nor a new response since the IJC initiated Biennial Forums beginning in 1992 that were to provide a venue for this exchange.

Central to the Commission's evaluation is the advice and insight provided by the public. Ongoing consultation occurs in a variety of ways and for the current biennial cycle, will culminate in a Great Lakes Water Quality Agreement Public Forum (IJC 1997c: 3).

The location of these forums changed from year to year as well in order to create a broader sensitivity and voice for all stakeholders throughout the basin.

..the Great Lakes Water Quality Board would provide a forum for coordination and consultation among governments and interests,.. facilitating the avoidance and resolution of disputes,and supporting the development of an informed transboundary watershed community (IJC 1997a: 31).

Achieving cooperation, however, is not automatic and criticism is more often than not the perceived, immediate outcome.

Criticism was addressed towards Governments, various industrial interests, environmental advocacy groups and ourselves. Generally, participants at the public forum commended the Commission for our Fifth Biennial Report as well as our current process, but urged stronger, more directed analyses and recommendations to Governments (IJC 1992: 34).

One such criticism of concern to local decision makers that was not clearly addressed in ecosystem approach discourse until the early 1990s was the relationship between the environment and economic costs. This is noteworthy because, both in the literature analysed and from interviews conducted in the course of this research, it is recognized that decision-making is most often based primarily on economic costs, particularly at the local level (Edwards 1985:).

Normally, a harried ecosystem manager may react only to the cultural stress with the highest public profile and therefore perceived by the public to be of major concern and not to a potentially more dangerous stress with subtle symptoms (IJC 1985a: 102).

Short-term considerations often have a way of assuming an urgency and importance far out of proportion to their long-term and overall significance (IJC 1980a).

Thus, when the full impact of devolution policies was felt in both New York and Ontario primarily following the 1994-95 elections, the IJC literature relating to Great Lakes decision-making was compelled to address this important relationship in theory and in practice (IJC 1997a: 1998: 29). During the 1990s, Environment-Economic Linkages became the principal Ecological Component to be mentioned (Figure 4.5). But, to achieve full implementation of locally-conceived and locally-driven plans using an ecosystem approach, Environment-Economic Linkages must address cost-effectiveness, cooperation and partnership-building:

The Commission fully supports voluntary measures and partnerships that complement necessary measures, such as water quality standards, and urges development of means and incentives to encourage and adopt cost-effective change while maintaining desirable aspects of the existing regulatory framework (IJC 1998a: 45).

The interdependence between cost-effectiveness, cooperation, responsive governance and communication for proper plan formulation and implementation is crucial (Figure 4.6). The lack of practical applications in the relationship between ecosystem and economic costs, and limited application of an ecosystem approach in coastal zone planning and management can be strongly

linked to this factor. But, faced with the degree of realism of 3D's policies throughout the 1990s, levels of governance which had previously been self-serving or antagonistic, were obliged to cooperate in order to perform their jurisdictional responsibility (IJC 1995b: Table 10).

The Emergence of Facilitating Processes and Mechanisms Components

Topics addressed within the last two years (1998-1999) deal particularly with elements of Facilitating Processes and Mechanisms. In numerical order of both explicit and implicit mention, importance is accorded first to Continuous Research, then Monitoring and Evaluation, the Capture of Pluralism, and role of Voluntarism (Table 4.1 and Figure 4.7). Moreover, Human Resources Development and Public Education are more frequently referred to than Voluntary labour. Each of these is a critical function of planning and management in the coastal zone, and each has been highly impacted by cutbacks resulting from government 3D's policies. The number of times each of these ecosystem approach elements is referred to is an expression of the degree of concern felt by the IJC about the capacity of planning and management to fill expanding voids at the municipal level - voids in knowledge, voids in staff and expertise, voids in support, and deregulation. Each void diminishes the ability to comprehend, monitor or administer coastal zone issues at the very time that increasing responsibilities are being downloaded to the municipal level. This theme is addressed more comprehensively in succeeding chapters.

Facilitating Processes and Mechanisms are elements which directly concern local capacity to manage water and land use decisions as well. They are, moreover, tools for capacity-building at the municipal, State and other levels of governance. The two most referred to, however, Continuous Research and Monitoring generally have more implication for the IJC, the federal and State governments and their roles. The latter three have more relevance at the municipal level. Yet, these elements only begin to emerge during the 1990s (Figure 4.4).

Great Lakes basin governance is in the midst of profound change, brought on by equally profound changes in jurisdiction philosophies and approaches toward environmental protection and resource management (IJC 1997b: 33).

There are many factors that help to explain the resistance which developed, preventing both a proper comprehension and the actual implementation of an ecosystem approach at the local level. Certainly, one of these is the slowness with which *discrete implementation measures* (SAB 1987: 14) have emerged in explicit mention as elements of an ecosystem approach (elements that include human resource development, technical support and information sharing, for example). But, the emergence over the eleven years (1988-1999) of increasing interest in Facilitating Processes is not without explanation. One of the recurring concerns in Great Lakes management is that *"more and more chemicals are being produced and identified in the ecosystem..."* (IJC 1986: 2). The rate and quantity being produced is so great that the IJC feels that *"regulations to control specific substances based on proven effects cannot keep up with the expanding scope of the problem"* (IJC 1986: 2). The RAP process was one of the responses initiated for this reason and, *"all successful RAPs have strong research programs as part of the foundation for implementing locally-designed ecosystem approaches for restoring beneficial uses"* (IJC 1997:85). It has even been shown that *"research for RAPs has proven to save money while achieving positive ecosystem results"* (IJC 1997:85). Within the RAP program, the ecosystem approach was intended to be a fundamental component of the process of dealing with such problems and research, monitoring and public education and participation in the process are fundamental mechanisms. The recurrence of similar ecological stresses, the reticence to adopt an ecosystem approach within the local planning and management regime, the implementation of 3D's policies in the face of capacity needs at the federal, state and local levels have led to the call for a resurrection of the now-defunct PLUARG report and its forward-thinking reference to many of the elements of the ecosystem approach that are only now gaining prominence (IJC 1997b).

The realities of government funding, the reaction of landowners.. and the general trend of social opinion, all point towards a reaction in favour of encouraging voluntarism and a more efficient and effective application of existing measures (IJC 1980: 67).

Numerous documents confirm that, during the early nineties, all levels of governance were struggling with needs that could be addressed using an ecosystem approach in the decision-making

process, yet few reports confirm its use. A number of workshops and Task Forces had again been convened to provide better definition, clarity and palatability. Among them is one in 1993, and a multi-stakeholder, multi-jurisdictional project at Wayne State University in Detroit in 1994 (IJC 1995b). The two have made valuable contributions, both in terms of clarification of the concept and moving forward on practical steps that planners and decision makers could implement. Yet, this research found little awareness of their existence and even less of their acceptance. This issue, too, will be discussed in greater detail in Chapters 5 and 6. Thus, while the highly-acclaimed 1980 PLUARG report expresses concerns that local jurisdictions for environmental management are often unreliable and plagued by inactivity or inconsistency (IJC 1980: 60), in fact, a great number of successful results are often achieved at this level:

In the U.S. and to some extent in Canada, regulations and standards are set at a relatively high level of government and implemented at the local level. A recent study found that the most successful cases (i.e. least pollution) occurred where both local government officials and local plant management assumed a central role in the articulation of the problem, selection of the appropriate response, and implementation of the solution (IJC 1989b: 110).

Both communication and consultation play pivotal roles in an ecosystem approach; voices include various stakeholder groups and decision makers at different jurisdictional levels: municipal and local as well as national and international (IJC 1997d). Content analysis has been valuable in identifying components of an ecosystem approach and their relationship to municipal planning and management capacity needs. It has been valuable as a source of understanding the discourse surrounding the ecosystem approach as well, but barriers to its acceptance have yet to be overcome..

Public participation needs to move beyond information, education, and consultation to negotiation, mediation, and empowerment (IJC 1989a: 108).

KEY RESIDUAL MESSAGES

Several important themes have emerged during the course of content analysis. They are:

Ecological Components

Throughout the study period, references to ecological stressors and their relationship to health, such as persistent toxic substances, have continued to expand. It is only within the last two years (1998-1999) that a decrease occurs.

Implementation and Administration Components

First, the ecosystem approach is not a concept to be imposed “top-down.” It is viewed by the IJC as the conceptual framework for improvements in Great Lakes-St. Lawrence River basin management policy and practice. To be acceptable at the municipal decision-making level, however, the IJC recognizes it must *not* be perceived as being imposed top-down (IJC 1985a: 144). It is thus described as a:

" process that coordinates and disseminates information, and promotes multi-stakeholder, consensus-building on shared interests... based upon "bottom-up" decision-making that is guided by the leadership of a watershed-based organization (e.g. Conservation Authorities in Ontario, Watershed Councils in the States), in partnership with local planning agencies, regulatory agencies, and resource management agencies...(IJC 1995: 15; 1996: 240).

Second, cooperation and communication are essential components of an ecosystem approach. Content Analysis reveals that cooperation and comprehension receive less mention than other components. Yet the IJC has amply demonstrated its commitment to improving cooperation and comprehension through communication. In practice the IJC has hosted numerous multi-stakeholder workshops to discuss relevant issues, communicating the results to the public. (IJC 1996: 69; 1994: 29) The IJC has been prompt in making available to the public in both print and electronic format various international documents, reports and discussion transcripts.

Proponents of this shift from a command-and-control, regulatory approach to a cooperative, ecosystem-based approach argue that, although regulatory activities are still important, education and incentives are now more important in achieving further

reductions in loadings and improvements in the environment.

Third, comprehension and clarity are essential components for its adoption and use at decision-making levels. The IJC identified that, among the barriers that have impeded adoption and widespread use of an ecosystem approach are a lack of clear, step-by-step directives for its implementation. Consequently, during the twenty-two years period 1977-1999, a number of multi-disciplinary workshops to elucidate the theoretical and pragmatic aspects of an ecosystem approach have been hosted by the IJC (IJC 1978; IJC 1989a; 1989b; 1989c; Allen et al 1993; 1995b). Yet, the very fact that so many years have passed, so many studies convened and so many experts assembled to define the approach would certainly account for the inability of municipal levels of governance to adopt and apply it. Even the process of developing remedial action as a first and necessary step in implementing an ecosystems approach (SAB 1987: 8), has been slowed by escalating costs and funding cuts of 10 to 15% in many resource management activities. As a result, the IJC declared in 1999 that restoration programs could now only survive where a "community-based process [exists that] requires the active involvement of informed citizens who are ecologically literate and willing to act as stewards of the watershed" (IJC 2000b). The ecosystem approach had now evolved to the stage of developing and employing its facilitating processes and mechanisms component.

Facilitating Processes and Mechanisms Components

First, the ecosystem approach must entail little or no additional cost to municipalities.

Creative partnerships that have been developed and are being developed that share responsibility for program delivery, create efficiencies and build the institutional capacity to achieve ecosystem results (IJC 2000b).

Participatory partnerships have been proposed as a means of upsetting the hidden agendas and "informal structures of influence" (IJC 1985b: 25; 1989a: 47; IJC 1996c) that have rendered land-use planning "ineffective to control abuses" such as unplanned development "in spite of regulatory controls" (IJC 1997c: 5).

Major obstacles remain to be overcome in order to advance municipal capacity to implement an ecosystem approach: *limited funding and resources; regulatory complexity; lack of a decision making framework; limited corporate involvement; insufficient research and technology development; and limited public and local support (IJC 1997d: 4)*. These are exacerbated by the multi-jurisdictional challenge of the basin's governance structure. The IJC has recognized that *"There is no one-time solution to problems in the GL Basin Ecosystem... It is probably sensible to assume that we are not dealing with the best plans and action. It is better to settle for desirable and feasible action applied and recast time and again. Gradually things will get better, which is all the success we as a society can reasonably expect (Allen et al 1993: 40)*.

Content analysis has proved useful in identifying a number of elements of the ecosystem approach have been under-utilized. For example,

There is a need to identify how effectively governments are assisting other organizations/institutions in performing the functions previously performed by state/provincial/federal governments, e.g. certain functions under RAPs are now being carried out by county or municipal governments, conservation authorities, watershed councils or nonprofit organizations (IJC 2000).

The International Joint Commission and its Advisory Boards throughout the 1990s acknowledged they will continue to support and continue to be champions for community-based RAP processes; for volunteer citizens' initiatives such as Ontario's Great Lakes Renewal Foundation and the Clean Michigan Initiative; and for governments, citizens' groups and third sector partnerships such as the Finger Lakes-Lake Ontario Watershed Protection Alliance (FL-LOWPA). Essentially, the literature illustrated the need for the utilization, clarification and support of the constitutive elements of the ecosystem approach, and of Facilitating Processes and Mechanisms in particular.

CONCLUDING REMARKS

The detailed analysis of explicit references to ecosystem approach components traces their evolution over a twenty-two year period (Figures 4.1 - 4.7). The results show that municipal planners and managers, and the IJC agree that the components needed for an ecosystem approach as a means of achieving the goals of the Great Lakes Water Quality Agreement are: an explicit framework or guide that provides for cooperation, coordination and information sharing that transcend jurisdictional boundaries; public education and human resource development; a venue for public input in decision making that includes involvement of the "third sector" and voluntarism in ; improvements in technical support; a continuation of investment in research; explicit mandates for monitoring and feedback of water and air quality.

The IJC literature is disparate, however. No one IJC source has provided the definitional manual of an ecosystem approach. It, therefore, remains beyond the grasp of municipal planners and managers. The assemblage of citations and development of the Template model (Table 3.2 and Appendix 4.1), however, should greatly facilitate future research on definitional evolution.

The following chapter works with this same template in looking next at the guiding documents, other than those of the IJC, that apply within the context of coastal zone management to the U.S. side of the St. Lawrence River. Its application to this other universe of content provides a test of consistency or congruency between that of the NYS coastal regime and the WQA of the IJC for presence of an ecosystem approach.

CHAPTER V

LEVEL OF CONSISTENCY INTERNATIONAL JOINT COMMISSION - NEW YORK STATE COASTAL MANAGEMENT APPROACH

PURPOSE

The purpose of this chapter is to answer the associated research question: *What is the level of consistency between the Ecosystem Approach of the IJC and the dedicated coastal management experience of New York State?*

The consistency test involves determining the degree of agreement on the ecosystem approach as a planning and management guide in the New York State coastal zone. It was assumed that, if the State program is not sensitive to components of the ecosystem approach, then the IJC mission has failed. Such a result would suggest considerable difficulty operationalizing the ecosystem approach at the municipal level. Why? Because the State government serves as a policy or practice filter. The State, if insensitive to the approach, would provide little guidance, or little technical, financial and human resource assistance to its cities, towns and villages to develop their coastal zone management programs. An insensitive State government may also display a lack of leadership or environmental stewardship. Municipalities would, as a consequence, have to be rather unique corporations with advanced local political leadership, or they would have to exist in a unique regional context - one that possesses natural resources that warrant a planning and management strategy exhibiting the characteristics of the ecosystem approach - in order to make the necessary investments alone.

The consistency test involves applying the ecosystem approach template (Table 3.2) to the four sets of documents discussed in Chapter III. These sets of documents consist of 1) the Federal Coastal Zone Management Act (Appendix 3.2); 2) those state laws and policies that define New York's Coastal Management Program (Table 5.1); 3) those state laws that more specifically define municipal organization and assign planning and management roles and responsibilities to the different municipal types (Tables 5.2 and 5.3); and 4) the key planning and management documents of a representative set of coastal municipalities in Jefferson and St. Lawrence counties (Appendix 3.4).

**TABLE 5.1 - DOCUMENTS AND REFERENCES ON THE NYS
COASTAL MANAGEMENT PROGRAM RECOMMENDED
BY DIVISION OF COASTAL RESOURCES, ALBANY, NY**

NYS Department of State. 1978. Draft of NYS Coastal Management Program. This initial draft of the NYS CMP is a complete summary of the Program adopted in 1981 and clarifies federal, state and local implication in the Program.

NYS Department of State. 1982 and 1986. Final Environmental Impact Statement and the New York Coastal Management Program. Albany, New York: New York Department of State. Washington, D.C. : Office of Coastal Zone Management, National Oceanic and Atmospheric Administration.

NYS Department of State. 1992a. "New York's Coastal Program: A Report. Your Coast, Your Choice, Your Future". Governor's Task Force on Coastal Resources. New York State Department of State, Albany, New York. Secretary of State Gail Shaffer

NYS Department of State. 1992b. 25-Year Plan for the Great Lakes: Executive Summary. NYS Department of State. Division of Coastal Resources. June, 1992.

NYS Department of State. November, 1992c. The SEQR Handbook. NYS Department of Environmental Conservation, Division of Regulatory Affairs. Thomas Jorling, Commissioner. Albany, New York. Governor Cuomo.

NYS Department of State. Coastal Resources Division. 1997a. Consistency Review online. <http://www.dos.state.ny.us/cstl/cstlcr.html> The Consistency Review of Local Government Initiatives that have been funded by the DOS is a way of ongoing monitoring both of expenditures and of progress in State goal areas such as LWRPs.

NYS Department of State. Coastal Resources Division. 1997c. Local Government Waterfront Revitalization Programs online (LWRP). <http://www.dos.state.ny.us/cstl/lwrp.html>. In this report, LWRPs are defined and the types and requirements for funding and technical assistance to local governments are developed.

NYS Department of State. December 1999. Zoning and the Comprehensive Plan. James A. Coon Local Government Technical Series. Governor Pataki.& Sec. of State Alexander F. Treadwell.

NYS DEC. 1992. Environmental Conservation Law - Article 24. Freshwater Wetlands. Albany: Division of Fish and Wildlife, Department of Environmental Conservation. State of New York.

**TABLE 5.2 - MUNICIPAL PLANNING AND COASTAL-SHORELINE MANAGEMENT
ST. LAWRENCE and JEFFERSON COUNTIES, NEW YORK STATE, 1998**

		Coastlines	Shorelines	Local Waterfront Revitalization Plan	Harbour Management Plan	Freshwater Wetlands Regulations	Flood Plain Regulations Local Ordinances
1	Alexandria (T)	St. Lawrence River	Otter Creek			X	X
2	Alexandria Bay (V)	St. Lawrence River			X	X	X
3	Cape Vincent (T)	St. Lawrence River Lake Ontario	Mud Creek Kent Creek	1986		X	X
4	Cape Vincent (V)	St. Lawrence River		1987		X	X
5	Clayton (T)	St. Lawrence River	Chamont River French Creek Buttermilk Creek Horse Creek	1991	X	X	X
6	Clayton (V)	St. Lawrence River	French Creek Barrett Creek	1988	X	X	X
7	Orleans (T)	St. Lawrence River	Chamont River Peach Lake Muller Creek Stone Mills Creek Carter Creek			X	X
8	Watertown (T)		Black River Mill Creek N. Branch of Sandy Creek			X	
9	Watertown (C)		Black River				X
10	Hammond (T)	St. Lawrence River	St. Lawrence	1990 J		X	XMT
11	Hammond (V)	St. Lawrence River	Black Creek	1990 J		X	XMT
12	Lisbon (T)	St. Lawrence River	Lisbon Creek Tibbits Creek Squaw Creek Sucker Brook Little Sucker Brook Brandy Brook	Drafted, not accepted by V/T Boards		X	X

TABLE 5.2 continued

		Coastlines	Shorelines	LWRP	HMP	FWR's	FPR's Local Laws
13	Louisville (T)	St. Lawrence River	Grasse River Raquette River Coles Creek Hutchins Creek Dodge Creek			NERR	XMTt
14	Massena (T)	St. Lawrence Seaway Lake St. Francis	Grasse River Raquette River Dodge Creek & many smaller creeks			NERR	X
15	Massena (V)	St. Lawrence Seaway Lake St. Francis	Grasse River Raquette River Hutchins Creek				X
16	Morristown (T)	St. Lawrence River Black Lake	Chippewa Creek 7 smaller creeks	1990 J		X	X
17	Morristown (V)	St. Lawrence River	2 small creeks	1990 j		X	X
18	Ogdensburg (C)	St. Lawrence River	Oswegatchie River Tibbits Creek	1986		X	X
19	Oswegatchie (T)	St. Lawrence River	Oswegatchie River Lisbon Creek Lower Big Bay of Black Lake 7 smaller creeks	1990 J		X	X
20	Oswegatchie (Heuvelton) (V)		Oswegatchie River Lisbon Creek				X
21	Waddington (T)	St. Lawrence River Whitehouse Bay	Grasse River Sucker Brook Little Sucker Brook Brandy Brook Coles Creek	1990 j		NERR	X
22	Waddington (V)	St. Lawrence River Little River	Sucker Brook	1990 j		X	X
		LWRP - Local Waterfront Revitalization Plan	HMP - Harbour Management Plan			FWR - Freshwater Wetlands Regulations	XMT - rescinded
		J - Joint Plan	FPR - Flood Plain Regulations			NERR - National Estuarine Research Reserve	

(Sources: St. Lawrence County Planning Office Archives, 1998; Jefferson County Planning Office Archives, 1998)

TABLE 5.3 - MUNICIPAL PLANNING DOCUMENTS and REFERENCES

ST. LAWRENCE and JEFFERSON COUNTIES, NEW YORK STATE, 1999

	Type of Municipality	County	Comprehensive Development Plan (FW)	Master Plan or Land Use Master Plan (FW)	Comprehensive Plan (FW)	Comprehensive Plan (NFW)	Date of CP Comprehensive Plan or CDP	Last Major Zoning Update
1	Alexandria	Jefferson		X			1966	1984
2	Alexandria Bay	"		X			1991	1991
3	Cape Vincent	"		X			1962	1991
4	Cape Vincent	"	X				1983	1989
5	Clayton	"		X			1962	1989
6	Clayton	"		X			1967	1994
7	Orleans	"		X			1962	1992
8	Watertown	"	X				1968	1991
9	Watertown	"		X			1978	1988
10	Hammond	St. Lawrence				none	--	--
11	Hammond	"				none	--	--
12	Lisbon	"		X	X		1982	1988.89
13	Louisville	"					1970	1985
14	Massena	"	X				1971	1995
15	Massena	"	X		X 1999	X	1971	1995
16	Morristown	"			X		1978	
17	Morristown	"				X		1975
18	Ogdensburg	"	X				1970	1994.95
19	Oswegatchie	"				none	--	--
20	Oswegatchie (Heuv)	"				X		1994
21	Waddington	"		X			1978	1986
22	Waddington	"						1995
	Jefferson	n/a		X			1978*	NLUZF
	St. Lawrence	n/a		X				NLUZF

* Land Use Plan not adopted by County Board

NFW - Not Formally Written

FW - Formally Written

NLUZF - No Land Use Zoning Function

(Sources: St. Lawrence County Planning Office, 1998; Jefferson County Planning Office, 1998; Armstrong 1998, Personal Communications; Mooers 1998, Personal Communication)

FEDERAL COASTAL ZONE MANAGEMENT SENSITIVITY TO THE ECOSYSTEM APPROACH

The Federal Coastal Zone Management Act was enacted in 1972, the same year as the Great Lakes Water Quality Agreement (GLWQA). It, therefore, predates the concept of an “ecosystem approach” as introduced by the IJC in 1978. But, unlike the GLWQA, the nine principal objectives of the Coastal Zone Management Act (CZMA) were directed primarily at the development of water-dependent resources in the coastal zone. These objectives are: 1) natural resource protection, 2) hazards management, 3) major facility siting, 4) public access for recreation, 5) redevelopment of urban waterfronts and ports, 6) simplification of decision procedures, 7) coordination of affected federal agencies, 8) public participation, and 9) living marine resource conservation. Although reauthorized in 1996, this Act still makes no mention of either the ecosystem approach or the GLWQA. In the absence of any reference to an ecosystem approach, however, sections of the federal CZMA do deal with a number of themes common to ecosystem approach components, such as ecological variables and stresses; administrative components such as cooperation, jurisdictional responsibility, and economic costs; and a few facilitating processes and mechanisms that include public participation, technical assistance, and promoting research (Table 5.4). In fact, the CMP's unique state-federal partnership supports states through financial assistance (\$58 million in FY 2000) in mediation, technical services and information, and participation in priority state, regional, and local forums. Yet, it leaves day-to-day management decisions at the state level in the 33 states and territories with federally-approved coastal management programs, including New York State.

NEW YORK STATE COASTAL ZONE MANAGEMENT PROGRAM SENSITIVITY TO THE ECOSYSTEM APPROACH

The New York State Coastal Management Program was enacted in 1982, four years after the ecosystem approach was introduced in the 1978 GLWQA. New York was, in fact, one of the first states to draft a Coastal Zone Management program (1973). It took another nine years, however, to achieve final federal acceptance of the NY State Program. The NYS Department of State, the responsible agency, adapted the 9 federal concerns as its own goals and established 44

comprehensive policy fields in NY State's 1982 Environmental Impact Statement. The state's Coastal Management Program (CMP) is subject to Section 916 (1) of the 1981 federal Waterfront Revitalization and Coastal Resource Act and Chapter 464 of the 1975 laws of NY State. It is administered, though, by the various city, village and town laws in the coastal areas. No explicit mention of an ecosystem approach appears, however, either in the NYS Coastal Resources Revitalization Act or any related State coastal statute (Table 5.4)

The results displayed in Table 5.4 are based on the Ecosystem Approach Template developed for Content Analysis in Chapter 4. It is used here to test the "guiding documents" of coastal zone management in New York State for consistency as expressed previously. Results indicate which components of an ecosystem approach provided the greatest explicit and implicit exposure and consideration, if any.

Content analysis does reveal sensitivity to, or mention of, a number of elements of the ecosystem approach. This occurs at both the federal and the state levels, though far less at the municipal level. These are never mentioned in the context of an ecosystem approach, however, but rather in the context of a surrogate approach, watershed planning and management (USEPA 1996a).

TABLE 5.4 - SENSITIVITY TO ECOSYSTEM APPROACH in GUIDING DOCUMENTS
Administrative Level

a- Ecological Components		Federal	State	Local
1	Definition (What is it?)			
2	Ecological Principles	X	X	
3	Ecological Variables	X	X	
4	Ecological Stresses and Problems	X	X	X
5	Ecological Boundaries	X	X	
6	Ecosystem-Economy Linkage	X	X	
7	Stakeholders and their Perspectives	X	X	X
8	Relationship to other Conceptual Constraints			

b - Implementation and Administration Components (Doing the Work)				
1	Implementation Framework or Guide			
2	Governance "systems, processes, solutions"	S	S	
3	Jurisdictional Powers and Responsibilities	S	S	S
4	Coordination	S	S	
5	Co-operation	S	S	
6	Communication	S	S	
7	Economic Costs "translation"	S	S	
8	Institutional and Other Perspectives	S	S	S

c - Facilitating Processes and Mechanisms Components (Capacity Building)				
1	Public Education and Human Resource Development	X	X	
2	Multiple Perspectives "Capture, Pluralism"	X	X	
3	Technical Support and Enrichment	X	X	
4	Information Sharing "Freedom of Information"	X	X	
5	Monitoring and Assessment "Feedback"	X	X	
6	Continuous Research	X	X	
7	Voluntarism (labour)	X	X	X
8	Voluntarism (Action/Behaviour)	X	X	X
9	NGO Contribution	X	X	

X- Sensitivity to "elements" of the ecosystem approach S- Mention of Surrogate approach

MUNICIPAL EXPERIENCE WITH COASTAL ZONE MANAGEMENT AND SENSITIVITY TO THE ECOSYSTEM APPROACH

This section examines local government legislation that includes Comprehensive Development Plans, Master Plans, Zoning Ordinances, Subdivision Control Laws, Local Waterfront Revitalization Plans (LWRPs) Harbour Management Plans (HMPs) and Remedial Action Plan documents from the study area. Many of these were developed with the financial assistance of federal and state funding programs but have never been updated although both demographic and economic changes have occurred within these municipalities (Table 5.3). It is not surprising, therefore, that only two

documents produced at the local level mention the ecosystem approach at all, either as a guiding principle or as an implementation method or process. These were the Massena Stage One RAP Report of water quality objectives, and the Massena Stage Two Remedial Action Plan (RAP) Report of recommended remedial action. The RAP process established by the IJC is supposed to utilize an ecosystem approach. The RAP process in Massena, NY, however, takes an engineering, or technological fix perspective and is focussed on General Motors (GM), Aluminum Company of America (ALCOA) and Reynolds Aluminum sites in order to address health-related risks. This is a site-specific approach and not an ecosystem approach.

The Federal, State and municipal coastal management legislation and guiding documents are all in agreement on development of water-dependent resources and their contribution to local economic viability (i.e. jobs and tax revenue). Economic activity "has emerged as a priority goal of many local governments" (SLCPD 1990: 17). Thus, the first planning documents produced are Economic Development Plans, of which Comprehensive Land Use Plans and Master Plans are included. A coastal municipality that is fortunate enough to have planners on staff, such as the City of Ogdensburg, generally combines Planning and Economic Development functions that have the power to link planning policy with strong economic incentives (Table 5.5). This theme is elaborated upon in the next chapter.

Each of these coastal municipalities has a number of streams and tributaries within their municipal boundaries (Table 5.2). Each qualifies, therefore, under the State Coastal Resources Revitalization Act, for financial assistance to develop these resources. The drafting of Local Waterfront Revitalization Plans (LWRPs) provides an example of the linking of local regulations for environmental protection with economic development of the community's water resources. A LWRP is a locally prepared, comprehensive land and water use plan for a community's natural, public, working waterfront. Harbour Management Plans and Wetlands Regulations, too, are drafted as a blend of economic development opportunities and water resources protection (Table 5.2). Because the LWRP process requires technical expertise, additional funding, and public input, it may not be easily accepted by municipal decision makers. The Village of Lisbon, with the technical assistance of a State agency, the St. Lawrence-Eastern Ontario Commission (SLEOC), held public

meetings and proceeded to draft an LWRP with exemplary clauses for the development and protection of their scenic coastal community, but it was never ratified by Council (Table 5.2). The process of drafting an LWRP, HMP or Wetlands protection regulation does, nonetheless, provide an excellent opportunity to implement an ecosystem approach, though none have displayed any sensitivity to this approach.

The breadth of environmental awareness and sensitivity displayed in municipalities that have managed to introduce zoning ordinances and have them accepted by local council is articulated in a 1992 amendment to the town's Zoning Ordinance. It provides a typical municipal bylaw reference to environmental concerns for public health and safety.

Animal wastes from slaughter houses shall be disposed of in an environmentally safe manner that does not pollute the air, land or water. State Environmental Conservation and Health Laws and Regulations shall be adhered to (Orleans 1992).

This is the only reference to environmental protection in the entire document. Nonetheless, it illustrates a recognition of, and desire for respect of State laws and institutional support for environmental protection at the municipal level. Whether this support actually gets translated into practice at the local level depends a great deal, however, on whose interest is best served.

This point needs to be clarified. This chapter is a search for consistency, i.e. that explicit or implicit mention of the ecosystem approach and its components as defined by the IJC are written into the municipal planning guidance documents for the coastal zone in New York State. This is not so different from the concept of consistency testing as perceived by the planning and management decision makers in New York State. One of the key Implementation Sub-Components of the Ecosystem Approach is the allocation of jurisdictional responsibility in a manner that achieves consistency with both upper tier (federal and State) and lower tier (municipal) goals. Conflicts can arise from what is perceived as an unjust decision in the allocation of jurisdictional responsibility for management of a natural resource. In this case, for example, jurisdictional responsibility for the 1972 Federal Coastal Zone Management Act was not given to the Environmental Protection Agency (US EPA, formed 1969), but rather, was placed under the federal agency responsible for

development, the Department of Commerce, creating a special branch called the Coastal Programs Division (CPD) within the National Oceanic and Atmospheric Administration's (NOAA) Office of Ocean and Coastal Resource Management (OCRM). Fifteen years later, however, the EPA was named lead agency at the federal level for both RAP and LaMP programs within the entire Great Lakes basin coastal zone. The RAP and LaMP programs have explicit mandates to employ an ecosystem approach. In similar fashion, in New York State, the Coastal Management Program was placed under the jurisdictional responsibility of the Department of State, while the New York State Department of Environmental Conservation (NYSDEC) was named lead agency for RAP programs in all Areas of Concern. Thus, the manner in which jurisdictional responsibility is allocated, and the way it is perceived by both the public and the agencies involved, can have long-lasting effects on both inter-jurisdictional and inter-municipal cooperation.

The allocation of responsibility between jurisdictions can be a formidable barrier to the introduction of a concept such as the ecosystem approach. This is demonstrated at the municipal level as well in the application of "consistency testing" between decision-making levels in New York State. For senior government levels in New York State, consistency testing is a key "selling point" for encouraging local municipalities to "buy into" or accept Federal and State policies, plans and programmes. Both the Federal Coastal Zone Management Act (Section 307) and State Coastal Management Program (Article 42 of the New York State Executive Law) contain a "Consistency Clause" whereby their policies and programmes are reviewed for consistency with local plans. This is true for the development of LWRPs, HMPs and Wetlands Regulations as well. If they are not consistent, local governments can refuse to accept and implement the upper tier's policies and programmes. Thus State and federal agencies must ensure that their broad mandates are consistent with local goals and policies in order that their programs are perceived as less threatening and more acceptable to local governments. An example reveals how intensely "defensive of turf" local governments are, and that they can be more sensitive to issues of control than of cooperation by placing the onus on State and even Federal policies, plans, and programs to prove they are consistent with local goals rather than the more broadly-mandated reverse situation. For example, the New York State Coastal Management Program was initiated, encouraged, and federally funded under the

1972 Coastal Zone Management Act as an act intended to be a "cooperative federal/state partnership to develop and protect coastal resources." But, in addition to the Supremacy Clause of the federal Constitution, Article 307(c)(2) of the CZMA states that Federal programs could be exempt from consistency "if the President determines that it is in the paramount interest of the U.S." Defence of turf is so ingrained, however, that in 1990, member states of the federal Coastal Management Program, though federally-funded, forced an amendment to the federal Act to remove federal exemption. The 1990 amendment states that, a federal exemption can only arise after a Federal court has determined that the Federal agency activity is consistent with a State CZM program (NOAA 1990: 2). Moreover, this amendment was also extended to other Federal statutes for environmental protection, such as the Clean Water Act (1972) and Clean Air Act (1970).

The ecosystem approach has been perceived as a top-down policy within Great Lakes management (IJC 1985a: 144). Its acceptance at the municipal level is thus subject to review for consistency with local goals and objectives. It has not, apparently, been reviewed within the study area which helps to explain why mention the concept of "ecosystem" appears in only two other documents reviewed. One of these is not a document that has been developed at the municipal level at all. It is the very comprehensive Governor's Task Force on New York's Coastal Zone and is, in fact, strongly critical of local coastal zone decision-making actions in general. Yet, it has received strong public support essentially because the Task Force Report is a resume of the comments actually expressed by citizens participating in its public consultation meetings (APPENDIX 5-1).

Local governments plan within a limited geographic area. Because governments do not often take a broad view of coastal ecosystems, rational development and protection of resources are not always realized (NYSDOS 1991: iii).

Content analysis of this important document reveals, moreover, possible reasons for this lack of "rational development and protection" and interest in proactively managing local water and land resources use. One of these is a particularly strong attitude or perspective of "hands off" to the concept of "regulations" or "protection" of private resources appears to have widespread support at the local managerial level in many parts of New York State (SLCPD 1994: 1). It is repeated again and again in the documents reviewed that local government is responsible for decision making and

implementation and not federal or state agencies and departments.

Adoption of land use controls, housing codes, deciding on community needs and policies, and the utilisation of government funding when appropriate are examples of local decision making and implementation (JCDP 1978: 1).

The greatest demonstration of explicitly stated sensitivity to environmental concerns in planning and management tools and documents at the municipal level is provided, however, by County Planning Department documents. This institution has a broader perspective than the municipal, since it views land and water resources management county-wide, and at the same time has the planning staff and expertise to comprehend and perhaps implement an ecosystem perspective. In fact, of the 22 municipalities in the study sample, only Watertown, Ogdensburg, Village of Massena, and Jefferson and St. Lawrence counties have planners on staff (Table 5.5). In numerous instances, the County Planning Department has been the agency entrusted with plans of county-wide importance with impacts on municipal landuse and water resources management. A case in point is the 1978 Jefferson County Housing Plan that demonstrates the absolute necessity of citizen approval and involvement in the process:

"an extremely important part of the housing planning process involved in formalizing this Plan has been... citizen involvement... Without the acceptance and involvement of the citizens of Jefferson County the Housing Plan will remain simply a document, rather than a tool for directing and implementing a set of goals, objectives, policies and strategies.."(JCPD 1978: 62-3)

This statement reveals a fundamental component of the planning and management process in the St. Lawrence River coastal zone of New York State. It also confirms why participation of the public in the decision-making process is a fundamental element of the Facilitating Mechanisms and Processes component of the ecosystem approach. It further substantiates the IJC's unique choice of Remedial Action Plans that require full citizen involvement as possibly the only effective method for providing a working model through which an ecosystem approach for coastal zone management can be legitimized. The goal of the ecosystem approach as proposed by the IJC, and full citizen participation in the process is to:

...develop coordinated, community-based programs that ensure development is sustainable in economic and environmental terms. A series of such sites throughout the Great Lakes basin, somewhat analogous to Areas of Concern, could provide a strong focus for long-term local efforts in pollution prevention within a comprehensive ecosystem approach (IJC 1992: 27).

The Jefferson County Housing Plan is also a co-operative, community-based plan and reflects the value of local government cooperation for the fulfilment of local needs.

The Plan proposes implementation alternatives.. with emphasis at the local level for decisions and actions. Land use controls, housing codes, and the utilization of various levels of government and programs when necessary are examples of local decisions and actions (JCPD 1978, Appendix I: 75)

Equally important, however, is that this Plan demonstrates the broader perspective, the environmental awareness and proactive mission of the County Planning Department that continues to be exemplified even today. For example, in the process of developing the 1978 Housing Plan, the County Planning Department includes, for the first time in Jefferson County local decision-making, the use of an "Environmental Assessment." The environmental assessment considers beneficial as well as adverse environmental impacts should the Plan be implemented and thus addresses one of the primary concerns of the 1980 IJC report (IJC 1980), i.e. the "relationship between Local Short-Term Uses of Man's Environment and the Maintenance or Enhancement of Long-Term Productivity" (JCPD 1978: 76-7). In this way, the Plan is more than simply a plan to meet housing needs, but becomes a vehicle for demonstrating the benefits of planning and good decision-making in general, of a long-term community vision, and intergovernmental co-operation:

Environmental controls at the Federal level are primarily carried out through the Coastal Zone Management Act of 1972...(and the NEPA of 1969). New York State has a (SEQRA) of 1975... These and many others serve to protect the environment from adverse impacts... Zoning ordinances, local laws, and special regulations (i.e.

TABLE 5.5 - MUNICIPAL PLANNING GUIDANCE

ST. LAWRENCE and JEFFERSON COUNTIES, NEW YORK STATE, 1999

	Type of Municipality	County	Planners on Staff No.	Volunteer Planning Board appointed	Planning Board Size	Planning Board tenure (yrs)	Planning Department, Authors and Key Consultants
1	Alexandria	Jefferson	0	yes	5 to 7	2 yrs	Sargent, Webster, Crenshaw and Folley
2	Alexandria Bay	"	0	"	3 to 5	"	Jefferson County Planning Dept.
3	Cape Vincent	"	0	"	5 to 7	"	Sargent, Webster, Crenshaw and Folley
4	Cape Vincent	"	0	"	3 to 5	"	No authorship indicated
5	Clayton	"	0	yes J	5 to 7	"	Sargent, Webster, Crenshaw and Folley
6	Clayton	"	0	yes J	3 to 5	"	Sargent, Webster, Crenshaw and Folley
7	Orleans	"	0	yes	5 to 7	"	Sargent, Webster, Crenshaw and Folley
8	Watertown	"	0	"	5 to 7	"	Russell D. Bailey & Associates
9	Watertown	"	3	"	3 to 5	"	City Planning Dept.
10	Hammond	St. Lawrence	0	yes J	5 to 7	"	none
11	Hammond	"	0	yes J	3 to 5	"	none
12	Lisbon	"	0	yes	5 to 7	"	St. Lawrence County Planning Office
13	Louisville	"	0	"	5 to 7	"	Russell D. Bailey & Associates
14	Massena	"	0	"	5 to 7	"	Raymond, Parish and Pine, Inc.
15	Massena	"	0	"	3 to 5	"	Raymond, Parish and Pine, Inc.
16	Morristown	"	0	"	3 to 5	"	Raymond, Parish and Pine, Inc.
17	Morristown	"	0	"	3 to 5	"	Raymond, Parish and Pine, Inc.
18	Ogdensburg	"	2	"	3 to 5	"	City of Ogdensburg Planning Board & Raymond,
19	Oswegatchie	"	0	no		"	none
20	Oswegatchie (Heuv)	"	0	no		"	none
21	Waddington	"	0	yes	5 to 7	"	SLEOC & Town Planning Board
22	Waddington	"	0	"	3 to 5	"	St. Lawrence County Planning Office
	Jefferson	n/a	6	yes	5 to 7	"	County Planning Department
	St. Lawrence	n/a	5	"	5 to 7	"	County Planning Department

J - Joint Municipal Plan

(Sources: St. Lawrence County Planning Office, 1998; Jefferson County Planning Office, 1998; Armstrong 1998, Personal Communication.s; Mooers 1998, Personal Communication)

subdivision regulations) control the nature and intensity of the uses of land... In summary, the protection of the County's environment is being carried out by all levels of government. Through government involvement, and the refinement and implementation of this Plan at the local level, increased involvement is anticipated in the effective implementation of environmental regulations and programs" (JCPD 1978: 78-9).

The County Planning Departments of both Jefferson and St. Lawrence counties appear to play an active role in co-ordinating a number of actions consistent with components of the ecosystem approach. For example, the 1995 St. Lawrence County Public Policy Guide, prepared by the County Planning Department, proactively promotes the benefits of planning, the necessity of vigilance and of striking a balance between protection of the quality of the natural and man-made environments and the value of appropriate development. The Policy Guide amply demonstrates the underlying concern that local residents have for conservation of their natural resources, development of their economic base and protection of public access in development plans. It promotes, moreover, the development of Comprehensive planning for all communities, "even those that do not anticipate adoption of land use regulations", and encourages "mechanisms for joint municipal planning efforts and for the coordination of land use policies" among its 24 Environmental policy statements that include: pollution and solid waste policies, forest and wildlife policies, and environmental education policies (St. Lawrence County Board of Legislators 1995). At the same time, it promotes the development and support of initiatives such as the St. Lawrence County Water Quality Strategy of 1991, and participation in the Water Quality Advisory Committee. This Committee's membership is representative of the kind of pluralistic perspectives called for in an ecosystem approach. Moreover, a number of sections of this Public Policy Guide are consistent with components of the ecosystem approach. For example, the interrelatedness of natural and man-made environments and their valuation, the meaningful participation by all interests, cooperation, communication, and education, evaluation and monitoring through proper planning legislation are all sub-components of an ecosystem approach that have been demonstrated in the RAP process in NYS Areas of

Concern such as Massena:

Public participation occurs both formally and informally in the RAP development process. Formal activities include a Citizen Advisory Committee, government-to-government communication, public meetings, technical workshops, and public outreach activities. Informal participation has occurred through communication among committee members and other members of the public, and through conversations between agency staff and members of the public (NYSDEC 1990: 21).

In terms of municipal sensitivity to components of the ecosystem approach, the Village and Town of Massena have been relatively receptive to planning and management options, adopting zoning ordinances as early as 1941 and comprehensive master plans by 1971. Although the zoning ordinance was not revised until 1988, the Village and Town cooperated in the development of a joint Local Waterfront Revitalization Program in 1981, and most recently, the development in 1999 of a new Comprehensive Plan. However, in spite of these relatively progressive steps, the implementation of an ecosystem approach as called for in Massena's 1986 Remedial Action Plan, was not adopted by the responsible agency, the USEPA. Why? Because the remedial process was dominated by the USEPA's engineering perspective and the desire to find a technological solution to three sets of specific problem sites of soil-sediment contamination. The Citizen's Advisory Committee, called for in the ecosystem approach, recognized that local willpower and stakeholder involvement alone are insufficient to achieve local objectives of a certain scale, such as those involving environmental remediation. That is, a number of local goals cannot be achieved without legitimate financial and technical support from senior levels of government:

...Reaching the (pre-remediation conditions) goal may be limited by the requirement that it must also be technically and economically feasible to achieve. ..options will have limited application in the Massena area since remedial actions are primarily being funded by responsible parties (NYSDEC 1991: 2-16).

In this case, there is some degree of consistency with the acknowledgement by the IJC as well, that "local resources are clearly inadequate to provide the massive resources required for restoration."

To the IJC, this recognition of local inadequacy confirmed the need for a systematic and comprehensive approach, a cooperative partnership that draws on broad local community involvement with the numerous stakeholders in the coastal zone, including senior levels of government, as a necessary step in building local capacity to achieve Agreement objectives (IJC 1998b: 16).

Other municipalities that have been progressive and sensitive to ecosystem approach components, while not actively involved in a RAP process like Massena, are the Village and Town of Clayton. These municipalities were among the first to begin the process of a Joint Town/Village Planning Board, Local Waterfront Revitalization Plan in 1986 (LWRP), and Harbour Management Plan in 1993. This latter was developed in accordance with the State of New York's Coastal Management Program and "brings together many traditionally distinct interest groups that represent distinct (and often opposing) objectives." It further states that:

It is the objective of harbour management to create an integrated management framework, designed to accomplish stated goals and objectives, through coordination of local, state and federal government activities" Village of Clayton HMP 1993: 2).

While the emergence of such local government initiatives, the adoption of zoning, comprehensive plans, Local Waterfront Revitalization Plans, and the respect of State Acts and regulations is encouraging, still, in all local planning guides and documents of Jefferson and St. Lawrence counties, there is no mention of the considerable benefits that the IJC has championed are to be gained from implementing an ecosystem approach.

This again raises the question, therefore, of the relationship between calls for clarification of the concept, of recognition of specific benefits to be derived from implementation of an ecosystem approach (such as human resource development, technical support and information sharing that contribute to an increased capacity to deal with problems), and the continued absence of environmental concerns in legislation.

KEY RESIDUAL MESSAGES

The test for consistency between the ecosystem approach of the IJC and the dedicated coastal zone management experience of New York State has revealed several key findings:

In terms of the U.S. federal Coastal Zone Management Program, it has been found that: First, there is no explicit call for the employment of an ecosystem approach; Second, there is a strong pro-development bias towards water and other coastal resources; Third, there is a strong recognition of the coastal zone as a viable planning unit; Fourth, there is some attention to elements of planning and management that could be considered elements of an ecosystem approach, such as natural resource protection, hazards management, public access for recreation, redevelopment of waterfronts and ports, simplification of decision procedures, coordination of affected federal agencies, public participation, and resource conservation. The ultimate consequence of these findings is that the federal government is not stipulating ecosystem approach sensitivity in state applications for funding under the US Coastal Zone Management Program. There is, in essence, no federal leadership.

In terms of the NYS Coastal Zone Management, it has been found that: First, there is no explicit call for an ecosystem approach; Second, there is a strong pro-development bias towards coastal resources that mirrors that of the federal perspective; Third, there is a strong recognition of the coastal zone as a planning unit, but coastal zone management is focussed on a set of disparate municipal initiatives, such as Local Waterfront Revitalization Plans, Harbour Management Plans, Wetland Regulations, Flood Plain Regulations and local ordinances that they are unable or unwilling to enforce; Fourth, there is no evolution of ecosystem approach components in the documents supporting the relevant state programs. The consequence of these findings is little or no state leadership and the sacrifice of non-development related alternatives for much of the coastal zone.

In terms of the municipal response to NYS coastal zone management, it has been found that: First, a pro-development perspective guides the planning and management of water and other coastal resources; Second, a single, competitive community bias dominates all coastal and other forms of planning and management; Third, a paucity of planning guidance in the form of Comprehensive Plans, professional planners, and contemplating consultants exists; Fourth, a paucity of any meaningful municipal environmental policy guidance exists, and the ecosystem approach is largely

non-existent as a guide, except for the St. Lawrence-Massena RAP program. The consequence of these findings is that sensitivity to the ecosystem approach as a planning and management tool or guide for State and municipal decision-making levels appears very, very limited. An ecosystem approach is identified only at the municipal level in the Village and Town of Massena RAP proceedings. Both the IJC and the USEPA have been actively involved in the Massena RAP process since 1990, yet few of the elements of an ecosystem approach have been defined and utilized.

The level of consistency between the ecosystem approach of the IJC and the dedicated coastal management of NYS cannot be measured. Why? Because the IJC's ecosystem approach is poorly defined and the NYS experience neither utilizes the approach nor elaborates on any planning and management components that could serve as surrogate ecosystem approach components. Further, individual municipalities lack the formal planning guidance needed to champion the approach, and possess a pathological suspicion of "planning and planners as regulation and regulators." There is no fertile ground for the seeds of an ecosystem approach to be planted. Therefore, other institutional arrangements need to be added to this challenge. Are there bridging mechanisms that can mobilize perspectives and resources around the ecosystem approach challenge? This question is addressed later in this thesis.

CHAPTER VI

MUNICIPAL PLANNING AND MANAGEMENT ROLES AND THEIR SENSITIVITY TO THE ECOSYSTEM APPROACH

PURPOSE

The purpose of this chapter is to investigate two interrelated research questions:

What perspectives appear to be dominating coastal zone management in Upper New York State, and what is the existing role of members of the planning community in this regard?

As in the previous chapter, the underlying intent is to measure the capacity of municipalities to internalize the ecosystem approach and capture multiple perspectives that, in part, fulfil the obligations of the Great Lakes Water Quality Agreement. Much of this capacity is determined by planners and managers having the opportunity to play a variety of roles. An assessment of the roles planners and managers perform in the municipal decision-making process is undertaken to properly answer these interrelated questions. The exercise, as previously discussed, has its foundation in survey research methodology and the merits of the Long Interview Technique. Twenty-five strategic interviews were held in St. Lawrence and Jefferson counties to explore this theme (Table 3.8).

CONTEXT

The legal foundation examined in the previous chapter establishes rules, provides explicit mandates, and clarifies a number of roles for the governance of coastal resources along the St. Lawrence River of Upper New York State. This foundation includes the Great Lakes Water Quality Agreement (WQA) in which the International Joint Commission proposes and supports the ecosystem approach. The goals of the WQA, it should be mentioned, are in part the result of an extensive public consultation process in which the concerns and shared objectives of many stakeholders within the Great Lakes-St. Lawrence coastal zone were considered. Moreover, the common principles of these goals are echoed in the Coastal Management Policy of New York State (NYS):

It is the expressed policy of NYS that the water, land and air resources of the State be developed and managed 'to the end that the State may fulfil its responsibilities as trustees of the

environment for present and future generations' (Marr 1979: 52).

At the same time, decision-making in NYS is constitutionally based on local laws and local authority, and is rigorously perceived as a right to be defended:

The laws that govern NYS focus power heavily on the Home Rule Law which gives substantial power to the local municipalities to draft their own Laws and Ordinances which, under the state Constitution, are equal in status to State Laws themselves (NYDOS 1996; Mooers 1999 Personal Communication).

The importance of providing a venue in the decision-making process for the voices of the many communities of interest cannot be understated. For example, a number of NYS statutes (Town Law, §263; Village Law, §7-704: 1987) require zoning to be "in accordance with a comprehensive plan". Yet, at the local level, this requirement is perceived as "one of the most fundamental but least easily understood or defined concepts" and the most poorly executed (NYS Legislative Commission on Rural Resources. 1991: 53). Very few municipalities have been motivated to produce a comprehensive plan. In other words, the state government, as previously noted, is providing normative guidance, and even mandating roles to be performed, but it would appear that these are not being implemented.

"Role analysis" has been described as essential to understanding "why people carry out their current practices and how they perceive their environment and the options or choices open to them" (Burton *et al.* 1993: 197). Role analysis can also reveal dominant perspectives, that is, the expression of perspectives, attitudes and values in a dominant view or outlook.

The Theoretical Range of Choice for Effective Municipal Planning

The concept of ranges of choice available for land use planning in coastal zone management has emerged from the natural hazards school which has been investigating this topic since the 1940s (Burby 1998). Research into what is theoretically within the range of possibilities at the local decision-making level led Nelson and Duncan to identify 49 techniques currently in use to manage

municipal growth and development (Burby 1998: 201). The entire list of potential land use management tools is, of course, not for every community and is considered beyond the scope of this research. A selection of 10 planning roles and the legal tools to employ them are considered representative of the particular "theoretical range of choice" and tasks assigned to local planning staff in the St. Lawrence River coastal zone of New York State (Table 1.3).

The Practical Range of Choice

The *practical range of choice (PRC)* of planning instruments involves taking the theoretical range of choice and putting it through a set of general context and constraint filters - technical, financial, legal, institutional (White *et al.* 1968; MacIver 1970; Mather 1986). This range of choice refers to planning instruments which have been drawn up or put together with citizen involvement and relevant to the local level. It is delimited in a number of county and State initiatives involving extensive public consultations, such as the 1991 Governor's Task Force on Coastal Resources and 1993 Blue Ribbon Commission on the Consolidation of Local Governments; the White Papers for a Community Planning and Land Use Retreat held at the Albany Government Law Center in 1991; the 1995 St. Lawrence County Board of Legislators' County Public Policy Guide.

The Actual Range of Choice

Where planning staff do exist, the ten roles that are considered normal planning functions expected of municipal planners elsewhere (the "Theoretical Range of Choice") are often far from those they are actually assigned (the "Practical Range of Choice") and different again from what they are actually capable of performing (the "Actual Range of Choice"). Consequently, planners and managers may have to balance a variety of different roles that include plan maker and technician, to landbanker, advocate, innovator and even sly fox (Getzels *et al.* 1980: 54-58). The present chapter is concerned, therefore, with the often-neglected perceptions, attitudes, values and behaviours of individuals associated with municipal planning and management. The important insight that perspectives and values can contribute to resource management decision-making has been understood for a long time (Sewell *et al.* 1971), yet its application has only recently been restated

(IJC 1999a; USEPA 1999).

In the course of this chapter, the importance of the study of perspectives for the understanding of planning and management of coastal resources becomes apparent.

METHOD

Field studies involved use of the Long Interview Technique, recording and analysing sixteen diagnostic, and twenty-five long interviews of State, County and Municipal participants in planning and management roles (Table 3.6). The intent here was to compare the mandates of the legal foundation with perspectives and actual roles through interviews dealing with actual issues involving the ecosystem approach, planning, planning consulting firms, trust in government, regionalism, regulations, voluntarism, and NGOs in the coastal counties of Jefferson and St. Lawrence, New York State (Table 3-9).

"Le principe fondamental de l'entrevue en recherche qualitative est de fournir un encadrement à l'intérieure duquel les répondants exprimeront leur compréhension des choses dans leurs propres termes" (Deslauriers, 1991: 35).

This process is key to the identification of decision-makers' perceptions, attitudes and values concerning actual Planning Law and Policy, a classification of Municipal Planning Roles, and the analysis of key messages from decision-makers active in these roles.

DISCUSSION OF RESULTS

Perceptions of Planning in the Coastal Zone and of the Capacity to Implement Planning

The functional representation of municipal planning is that the planner is guiding the movement of a municipality from an existing state of affairs to a preferred one by either making plans or trying to implement them (Wellar, 1987; Leung, 1989). In the context of coastal resources management, Mitchell (1997: 240) and Gunton (1984) state that the planner's role is "to move from *normative* planning (what should be done) to *operational* planning (what is to be done)." Yet, research reveals that, from the time the ecosystem approach was proposed in 1978 until now, local planning and

enabling legislation in NYS has been too permissive and managed on an *ad hoc* basis. The possibility of moving from this permissive state to a coastal zone planning and management regime that operationalizes a participatory ecosystem approach as expressed in the Water Quality Agreement, will require innovative measures or mechanisms to advance such an objective. It would, moreover, have to be accompanied by considerable willpower, capacity-building, and support both to overcome initial inertia but also to address the many issues and concerns facing coastal municipalities that are constantly subject to change (Mitchell 1995 and 1997). This support would also be required from a number of levels that include federal, State and municipal. These agencies of "governance" with responsibility as "trustees" of sustainable coastal resource use should be concerned about the impacts of their policies in terms of municipal planning and management capacity in St. Lawrence and Jefferson counties in these turbulent times. On the contrary, rather than providing and coordinating this support, federal and State governments have adopted Devolution, Downsizing and Deregulation (3D's) policies since 1995, policies that appear to be purposefully intended to clip the wings of planning and regulatory agencies, functions and roles.

...downsizing and decreased resources, both human and financial, have been a fact of life for all ..government departments in the last few years... (IJC 1998c).

Perceptions on Economic Growth

Smith (1993: 13) argues that public concern for the environment largely reflects the business cycle, rising in prosperous times and receding when times are bad. If this were true, the implications are that the public will only exert pressure for stringent enforcement of environmental standards during periods of strong economic activity (Smith 1993: 8). This has critical implications for municipal capacity to achieve and maintain both environmental and economic goals for North Country communities. That is, in times of perceived weak economic activity, the public will not exert pressure for enforcement of environmental standards or proper land and resource planning. The importance of an ecosystem approach for the management and conservation of coastal resources and the environment may be further compromised, therefore, by the perception of a weak, and even regressive economy in the North Country. Political will would instead be directed toward job

creation and retention, and a desire by state government to streamline environmental regulations. Any factor which is perceived to limit or slow economic growth and activity thus becomes the target of government action in order to *"give America's taxpayers, America's businesses, and the American economy the tax relief they need and deserve"* (Pataki 2001).

Demographics also exert an influence on the perception of need for planning. Both counties have experienced little or no overall population growth (11% net growth in Jefferson and -2.1% in St. Lawrence 1980-1990) and almost no in-migration is expected. Moreover, the municipal tax base is declining as more and more land is exempted from taxation increasing fiscal restraints (Mooers 1999, Personal Communication). This perspective of decline therefore limits the menu of options available to policy makers. *The people in power are thus progrowth and planners feel at the end of the chain* (Mooers 1998, Personal Communication).

Consequently, all municipal players and decision-makers move quickly to action on opportunities for economic development and growth of the local economy. The updating of "Overall Economic Development Plans" is thus numerous and frequent. While most of these "plans" express concern that the development *not* harm the quality of life and the natural environment that is the pride of North Country residents, very few instruments or staff are available to actually enforce or ensure their protection (Jefferson County Overall Economic Development Plan, 1993). Thus, municipalities advertise at the entrance to the village "Zoning Strictly Enforced," yet planners joke, in fact, about their perceived inability to even mention the "Z"-word for Zoning by-laws or the "R"-word for Regulations in meetings with municipal officials, volunteer Zoning Board of Appeals members and other residents (Zimmerman 2000, Personal Communication). One of the principal barriers identified by Zoning Board of Appeals volunteers and planning staff is contending with a perception that planning is harmful to, or discourages economic growth.

Perspective on Planning

Until very recently, New York State had one of the smallest state planning offices in the United States (Armstrong 1998, Personal Communication). As mentioned earlier in the thesis, this condition is largely a consequence of the public and political perception of land use planning and the

constitutional restrictions in place. In addition, municipal planning offices are also poorly served by professionals and resources.

A not-for-profit planning consultant with considerable experience throughout the North Country of New York State, remarked that "It astounds business owners how a municipality can operate without a plan. A business needs a well-articulated plan to stay efficient, to grow and succeed" (Church 1999, Personal Communication). However, because of the inefficiencies and weakness in enforcement caused by the fragmentation of authority at the local level, a weakness signalled also by the IJC (1980), the role of the State government in providing the example in governance, Burby (1998: 285) insists, is primordial:

..reliance on local jurisdictions for environmental policy development and regulatory control.. being the exception rather than the rule... is due in large part to the narrow geographical and functional scope of concern (IJC 1980: 60).

It is, moreover, clearly within the State's mandate of governance, and even permitted under its Constitution, to legally regulate the Coastal Zone (Street 1999 Personal Communication). How has the State responded to this responsibility? The State has not, as yet, explicitly mandated local coastal governments to prepare Comprehensive Plans, Master Plans, Zoning Ordinances, Subdivision Regulations, Local Waterfront Revitalization Plans, Harbour Management Plans or similar planning tools (Marr 1979: 50). This response is based on a perceived limitation, under Article 9 of the State Constitution, to enact legislation that may be regarded as circumventing local concerns by representing "outside" interests.

It is thus clear, as Sewell *et al.* (1970) have argued, that the study of perspectives is a key variable in understanding the role that planners and managers play in the municipal decision-making process. A case study provided by a local Planning Director presents a clear indication of the influence of such a perception on local planning capacity. The first planner in St. Lawrence County (1971), a dedicated and progressive planner who believed in the watershed as the planning unit, produced detailed maps of the local environment and even a Comprehensive Land-Use Plan as early as 1978. This plan immediately conflicted with a number of private interests with sufficient political

clout and he was shown the door in 1979 (Mooers 1999, Personal Communication). The lesson to be learned with respect to planning roles, Getzels (*et al.* 1980: 27) observes, is that a full-blown plan cannot be foisted upon a community that does not want it when alternative approaches may work just as well.

Thus, any government level that attempts to employ planning tools, even though they can serve a very useful purpose in bringing more uniform rules to the game, is bound to meet resistance in the rural context - particularly local governments that attempt to implement any kind of blanket regulations, such as a written Comprehensive Plan, which is likened to swatting flies with a sledgehammer (Getzels *et al.* 1980: 54). One of the perceived reasons for this is that written plans are not easy to change, whereas Zoning codes, on the other hand, can be changed readily (as often as weekly) by one or two people such as the Mayor, for example (Falton 1998, Personal Communication). Thurow (in Getzels *et al.* 1980: 53) articulates the perspective that is at the basis of this fundamental challenge to planning and management, both locally and State-wide. It is a belief, widely shared in rural America, that zoning is in fact an urban political ideology and an infringement on personal liberties: "You can't tell me what to do with my land. Next you'll want me to have a *permit* to plough my fields" was a sentiment also voiced by research interviewees - a sentiment, Getzels *et al.* (1980: 54) points out, that is related to space. With 21% of the land surface of New York State, but only 2.2% of its population, the North Country of New York State cherishes its sense of space and "living outside the law" (Falton 1998, Personal Communication). Because distance is perceived as a buffer in rural areas, land owners feel generally that conflicts can be dealt with on an *ad hoc* basis. *Ad hoc* solutions are, therefore, more popular as a management option, and *are sometimes* sufficient in rural environments (Getzels *et al.* 1980: 54). One of the principal barriers identified to implementation of an ecosystem approach in coastal management is thus its association with an institutionalized planning process - a process perceived as imposing limitations on private land use by regulatory agencies and decision makers, whether Federal, State or local.

Perspectives on Deregulation

Deregulation policies initiated since 1995, too, are purposefully intended to clip the wings of

regulatory and of planning agencies, functions and roles. There was considerable local support, therefore, for the creation of GORR (the Governor's Office for Regulatory Reform) in 1995, by the Pataki administration of New York State. This measure, based on the widespread perception that measures to protect the physical environment are costly to industry and to the public and thus lead to an economic downturn, has been perceived by many as a reversal of responsible State environmental policy. It is certainly contrary to the results of environmental legislation, programmes and projects over the last 25 years that have been the primary factor in improved Great Lakes water quality (since their introduction). Because federal and State deregulation measures coincide with a period in which so many areas of the Great Lakes-St. Lawrence River basin have been experiencing their most profitable economic cycle of the twentieth century, the Pataki administration has adopted the tendentious perception that downsizing, devolution and deregulation policies contribute directly to economic upturn with the assumption that social and environmental conditions will thereby benefit positively.

They say you can't run a business without taking risks. Six years ago, doing business in New York was the risk. For too long, New York's businesses were over-regulated, over-taxed and under-appreciated. We changed that. We made it clear that the reward for enterprise, ingenuity, risk taking and success should not be more regulations and higher taxes. We cut the taxes that were killing small business, killing investment and killing jobs (Pataki 2001).

Numerous sources and business practices demonstrate clearly that this perception is antiquated (Cropper *et al.* 1992; Schmidheiny 1992; Stead *et. al.* 1996; Xepapadeas 1997: 64). Nonetheless, the perception is prevalent throughout both urban and rural America (Getzels *et al.* 1980; Fischel, 1985). It can, therefore, greatly limit the "actual range of choice" available to municipal decision-makers in the North Country, particularly the capacity to adopt an ecosystem approach.

The Impact of Downsizing, Deregulation and Devolution Policies on Planning Roles

Citizens have a responsibility to hold officials accountable: over time, a community that is not involved in governance may get a government that does not serve its needs." (Policy Guide, 1995:

37). It is practically impossible that such proactive policies as the Water Quality Agreement, the Coastal Zone Management Act, Coastal Management Policy and many others should appear at the federal and state levels without the support of local governments and local citizenry. Yet, it is almost meaningless to have developed dedicated coastal management plans both federally and state-wide, if they are unenforceable because the type of cooperative decision-making called for in an ecosystem approach, and increasingly adopted in other Great Lakes states, is impossible to achieve in New York State municipalities that hold tenaciously to the principle of Municipal Home Rule. While the Albany Law School White Papers (1995) claims that Home Rule is arguably a myth, Meyers (1993: 11) claims that a pervasive "distrust of government" permits some municipalities to carry on without substantive land use controls. The Governor's Task Force on Coastal Zone management (1991) attempted to overcome this polarization of concerns. It involved one of the most extensive consultative processes undertaken in New York State in recent years and identified major hurdles to the application of planning and management in coastal communities (Appendix 6-1). Its first recommendation was to "revise and update the Coastal Management Program (CMP) to reflect demographic, environmental, economic and land and water use trends and priorities, and the conservation and development needs of each coastal region." The consultative process resulted in the Governor's 25-Year Plan for the Great Lakes (1992) a collection of shared goals that revealed a commitment and a concern by the population to preserve and protect their coastline. These goals are: 1) Formulate a "Shared Vision" of the State's coastal resources, 2) Restore the integrity of the waters; 3) Manage water resources; 4) Preserve and improve natural resources; 5) Sustain economic development; and 6) Improve intergovernmental relationships in recognition that:

"At the state level, regulatory institutions provide the primary means for long term influence over growth and development as well as the preservation of coastal resources." There is still a problem of lack of coordination and consistency among federal, state and local agencies on regulatory, funding and program decisions affecting the appropriate uses of coastal resources. Without improvements, ad hoc and often contradictory government actions result in further decline of the coastal environment and increased frustration from the regulated community."

Ad hoc solutions, then, are perceived more and more to be *inadequate* to deal with the challenges that 3D's policies and emerging and recurring concerns present to municipalities, such as in areas which are more prone to development than others, particularly along the waterways (Table 5.2). Seasonal development still occurs along the shores of lakes and rivers in order to build cottages or camps and even second homes. County Planner, Jason Photenhauer, says that it is locational forces, and not planning, that are guiding development. "Everybody wants to have a home by the water. As the population grows, as people move into an area, then someone will have the idea, well maybe we need a repair shop, or maybe we need a hairdresser, or a restaurant in this part of the county. And then, that will start some further development, and then planning" (Photenhauer 1999, Personal Communication).

Growth and development along the waterfront can be controlled both at the local and state levels of government. However, waterfront land owners and developers are motivated to maximize return on their investment, while municipalities often seek development which will generate the highest tax revenues. These two factors make waterfront property attractive for high density development and can generate intense pressures on local governments to allow inappropriate development." (Secretary of State Gail Shaffer, NYSDOS 1989).

Alexandria Bay and Clayton, two municipalities that *are* experiencing growth, are therefore, under substantial pressure to expand harbourfront and port facilities. While economic growth is considered necessary and is to some extent desirable, not all types of growth and development are acceptable in these communities. A number of residents are flatly opposed to change while others express that the "T-shirt" type of tourism-driven growth that Alexandria Bay and Clayton are experiencing will degrade the visual, cultural and community dynamics of their villages as well as impact on the water infrastructure and quality (Blodgett 1998, Personal Communication).

Locational forces, planners feel, have been a major stimulus for initiating planning and investing in the development of participatory decision-making (discussed in Chapter 7) on coastal resources in spite of the perceived economic state. Planning Departments continue to express the beneficial

aspects of planning, and State, County and urban departments have recently begun to hire new staff. What mechanisms are at work in this evolution in planning and what roles do municipal planners play in this process?

Municipal Planning Capacity and Ten Roles for the Municipal Planner

The defined roles are sufficiently comprehensive to encompass the full range of functions that practicing municipal planners perform (Table 6.1). Conversely, the ten roles are specific enough to be capable of cohesively organizing the full spectrum of planning instruments available. Because of the nature of Home Rule (Table 3.5), not every municipality will have the full range of planning instruments, as Mitchell (1997: 245) says, "even if a strong commitment exists to deal with environmental problems, governments often find that they do not have the necessary means or tools to implement the most desirable package of activities." The instruments planners theoretically have at their disposal to perform these ten roles are listed in Column 2 (Table 6.1). The use of the ten planning roles as a template representing capacity is based on the planner's perceived capacity derived from interview results. Thus, Column 3 lists the instruments of environmental planning and management St. Lawrence and Jefferson County planners are actually called upon to use (Figure 6.1). From this list, and based on Long Interviews, an approximation of the proportion of roles actually played by planners at the County level can be drawn up (Figure 6.1). It is evident, from this exercise, that certain roles, such as Technician, Developer and even Regulator far outweigh the Plan Maker, Consensus-BUILDER and Land Steward and Fiscal Agent roles, which theoretically are considered principal planning roles. Moreover, the role of advocate, or even radical, such as for promoting the goals of the Great Lakes Water Quality Agreement and the ecosystem approach is little used.

a) The Plan Making Role

A number of municipalities in the study area developed local Comprehensive Plans or Master Plans between 1962 and 1978 under Housing and Urban Development (HUD) Section 701 grants (Table 5.3). These are: the towns of Louisville, Massena, Watertown, city of Ogdensburg, and

villages of Alexandria Bay and Clayton. It is still possible to obtain grants for plan making under this and the State Coastal Management Program (CMP). Until 1995, however, only 13 out of the 21 municipalities had taken advantage of the CMP opportunity. The pattern of empty cells under the Plan Maker role in the instrument matrix (Table 6.2) reveals that the plan making capacity is little used in municipalities of the study area. For example, the Towns of Alexandria, Cape Vincent Clayton and Oswegatchie have not benefitted from the grant programs for development of a Local Waterfront Revitalization Plan and do not have formally written Comprehensive Plans. [NB. The shaded cells of Table 6.2 indicate that these planning instruments exist in the municipality. The empty or non-shaded cells indicate that they do not.] Those municipalities that have local plans that were not approved, or have no technical and informational resources, and no staff planners, are largely unprepared to address development and other planning problems. The hiring of consultants to do the planning is not an option unless this option is funded by the State. Moreover, external planners can be problematic in a number of ways, particularly the lack of *experiential knowledge* (the uncoded knowledge of the public at large) that is becoming increasingly recognized as an appropriate companion and modifier of *expert knowledge* (Friedmann 1993). Noted environmental planner, Ian McHarg, expressed years earlier that the planner without the experiential knowledge gained from residency within the planning area may lack the insight and community connection to be effective. McHarg (1978: 13) argues, in fact, that the "planner who comes from out of town and is prepared to solve problems is a menace." After all, no one can anticipate the nuances and likelihood of particular trends and political idiosyncracies like a resident.

On the other hand, the use of external consultants to formulate plans can minimize the influence of entrenched resident-planners and council-members who regard the planning process as an opportunity to express their own development agenda. The County Planning Department plays a particularly important role in this regard since most municipalities have no planners on staff and inevitably find that development issues and decision-making become politicized with Boards of Trustees or Planning Boards assuming the primary planning role by default. Both Jefferson and St. Lawrence counties have resident planners who are charged with responsibilities allocated to county level government, such as severance and variance reviews, and development proposals that affect

lands covered by State policy statements (Mooers; Armstrong 1998, Personal Communication).

TABLE 6.1 - MUNICIPAL PLANNING ROLES AND INSTRUMENTS

Theoretical Range of Choice in Planning Roles		Actual Range of Choice
Roles	Instruments for Environmental Planning	Instruments for Environmental Planning
1 Plan Maker	Incorporation of environmental paradigms into plans Land uses Vision statements, search exercises Statement of environmental goals and objectives	Community development planning Housing planning Local planning assistance
2 Technician	Environmental inventories Background studies/projections Monitoring	Adirondack issues education Agricultural districts monitoring Geographic information system Grant writing Local government technical assistance Planning board training and technical assistance Rural life Staffing EMC, SLCWQC Zoning boards of appeal training and technical assistance
3 Regulator	By-laws - tree preservation, poop 'n' scoop Zoning control format - Euclidean, flexible, spot Zoning-barter format -- development agreements, linkages Environmental assessment Risk assessment Permits New guidelines or rules Standards and regulations -- septic systems, wells, noise Environmental Bill of Rights	Code enforcement Environmental issues education Floodzone Information Low-altitude military aviation training monitoring Nuisance complaint information and referrals Project reviews Subdivision regulations Water quality monitoring
4 Developer	Identification of community service needs -- road needs studies Infrastructure construction Stormwater management Waste management	Agriculture and agri-business Economic development planning Highway safety monitoring Water systems management Sewerage management monitoring Solid waste management monitoring

5	Consensus Builder	Public education on planning issues -- water conservation Public education on private initiatives -- tree planting, shoreline improvement Public participation Partnerships Co-ordination with other government partners Dispute mechanisms -- mediation, conciliation Advisory committees	Intergovernmental cooperation agreements Liaison with state and federal agencies
6	Advocate	Institutional reorganization Conservation strategies Environmental constraint areas Best management practices Renewed stress on new paradigms	Forestry and forest health monitoring
7	Land Steward or Banker	Land acquisitions Restrictive covenants Conservation easements, Land donations Land swaps Land trusts Site rehabilitation -- containment of toxics, use of biological processes	Hazardous materials monitoring Natural resources management
8	Entrepreneur	Public/private partnerships. Facilitation of development processes Development agreements	Housing Industrial development support Recreation Tourism and recreation planning and development
9	Fiscal Agent	Development impact fees Taxes -- deferred, rebates, preferential assessments Water pricing Penalties Procuring planning and development funds from upper-tier governments Exactions	Census data collection and mapping Energy audits
10	Radical	Overhaul of planning process/Institutional structures Harmonization/integration of existing laws and bureaucracies	

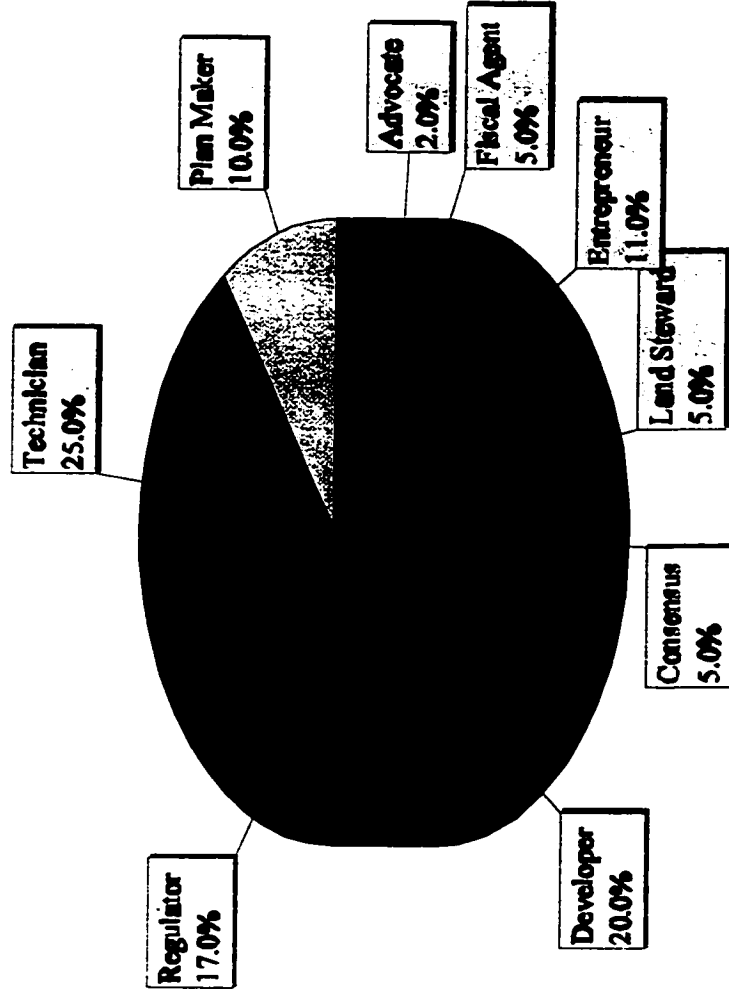


**FIGURE 6.1 - PROPORTION OF PLANNING AND MANAGEMENT
ASSIGNED TO SPECIFIC ROLES**

**TABLE 6.2. MUNICIPAL PLANNING ROLES AND INSTRUMENTS
JEFFERSON AND ST. LAWRENCE COUNTIES, NYS**

Planning Roles			Plan Maker				Regulator					Developer	Consensus Builder	Advocate	Land Banker	Entrepreneur	Fiscal Agent
Planning Instruments			Comprehensive/Master Plan	Written CP is used	Comprehensive Plan (NFW)	Local Waterfront Revitalization Plan	Zoning Regulations	Subdivision Regulations	Site Plan Review	Flood Plain Regulations	Building Code Enforcement	Servicing	Planning Boards	Conservation Easements			
1	Alexandria	Town															
2	Alexandria Bay	Village															
3	Cape Vincent	Town															
4	Cape Vincent	Village															
5	Clayton	Town															
6	Clayton	Village															
7	Hammond	Town															
8	Hammond	Village															
9	Lisbon	Town															
10	Louisville	Town															
11	Massena	Town															
12	Massena	Village															
13	Morristown	Town															
14	Morristown	Village															
15	Ogdensburg	City															
16	Orleans	Town															
17	Oswegatchie	Town															
18	Oswegatchie (Heuv)	Village															
19	Waddington	Town															
20	Waddington	Village															
21	Watertown	Town															
22	Watertown	City															

Sources: St. Lawrence County Planning Office 1998; Jefferson County Planning Office, 1998)
Armstrong 1998, Personal Communications; Montan 1996, Personal Communications; Mooers 1998, Personal
Comm.unications)

Generally, the county planners are key in imparting a sense of continuity and consistency to county-level planning concerns.

While both Jefferson and St. Lawrence counties have few demands to develop Comprehensive Plans, they have both recently increased the number of staff as a response to the increasing number of roles they are asked to assume that include technical assistance for numerous municipal issues (Table 6.1).

b) The Planner as Technician

In this role, the planner operates in support of the plan making function (Levy, 1991; Mooers 1999, Personal Communication). Support functions include: managing and coordinating the taking of the 10-year census, tabulating population and resource projections; working on the municipal or county budget; providing local, volunteer Board members with legal and technical advice on municipal and State regulations; providing annual Local Government Conferences to educate and update new members of local Boards; zoning variance reviews; and preparing GIS databases for numerous municipal applications including planning, transportation, green spaces, tree surveys, among others. These functions, that comprise approximately 25% of the planner's time (Figure 6.1), pertain directly to the decision-making process in many of the 22 coastal municipalities investigated and impact on their coastal resources. At the same time, while this planning process may not appear to be guided directly by an ecosystem approach, it is important to remember that the IJC is concerned about enhanced planning capacity to deal with extraordinary circumstances as they arise.

One such circumstance was the 1984 decision to expand Fort Drum, an active military base. Military personnel would interact with local citizens by being housed off-base in surrounding communities such as Cape Vincent, Clayton and Alexandria Bay. The Fort Drum expansion provided sufficient incentive that all but one municipality, in Jefferson County at least, have developed at least the minimum planning tool necessary, the Zoning Ordinance (Bourcey 1999, Personal Communication). This is not always done professionally or comprehensively, however, and, in the absence of local planners, many variances are simply a decision recorded in the minutes of the local Planning Board meeting. So, sometimes it is even hard to find the applicable Ordinance.

Planners from the County Planning Office are thus called on to provide necessary technical assistance and "institutional memory" to a number of these municipal Boards in developing, updating or locating their Ordinances.

In St. Lawrence County Planning Office has recently provided technical assistance to the Village of Massena in the development of its new Comprehensive Plan county, in accordance with county Policy EN-5 (St. Lawrence County Board of Legislators, 1995: 28) that espouses important components of an ecosystem approach. By providing assistance in plan making, the targets and objectives of the local plan can then embrace the targets and objectives of the county or State policies, and of an ecosystem approach. Because master plans take into account projections based on those objectives, subsequent plan makers can thus judge the accuracy of those projections and benefit from insight gained on the idiosyncrasies of individual municipalities.

c) The Planner as Regulator

In spite of the fact that environmental protection in the U.S. has traditionally involved the use of regulatory sanctions and litigations, New York State is far behind neighbouring states, such as Vermont and Massachusetts, that embrace principles of sustainable development in zoning and land-use management (Falton 1998, Personal Communication). The State Planning agency of New York, which coordinates land use planning and carries out state planning goals, had been closed down for a number of years (NYS Legislative Commission on Rural Resources, 1991: 53). Its regulatory tasks were assigned to the Department of Environmental Conservation which has Conservation Police with full police power to enforce state regulations. There is a perception of support for this in a Town of Waddington survey which showed that 88% of respondents agreed that "land adjacent to the River should be protected" while a small percentage, 16.7% "thought that development should be allowed anywhere in the township, even on prime farmland" (Town of Waddington, 1979). The Village of Clayton LWRP of 1986, too, states that, "if feasible, acquire land and develop public access" to the foreshore. These local examples corroborate Vig's (1997: 10) observation that citizen concern for the protection of quality, quantity and access to coastal resources is very strong. Ensuring protection of this access is, in fact, a fundamental policy component of both the federal

CZMA and the NYCMP (Policies 19 and 20), although, in isolation, neither of these policies has ensured protection of these coastal resources. Local governments must consider it part of their heritage and the public be either involved in, or assured of, this protection. Historical dependency on regulation as a planning tool has tended to overlook innovations in planning practice that are the result of evolving citizen-government relations. The planner is increasingly expected to transact with the public (Sandercock and Forsyth, 1992; Nelessen, 1994), and a diplomatic role in planning is becoming the primary task (Mooers 1998, Personal Communication). The instances where enforcement of regulations have led to contention, even threats, Planning Board resignations or firings, there has been considerable loss of expertise as well as expense in terms of litigation and enforcement costs. Therefore, other factors such as enhanced flexibility, ease (and lower costs) of implementation, and adaptive management are important considerations for planners. Thus, while discussions of planning instruments in American and Canadian planning texts and manuals espouse the centrality of regulation to planning practice and process (ASCE, 1986; Catanese, 1988; Levy, 1991; Hodge, 1991; Eisner *et. al.*, 1994), this regulatory approach in planning works best in areas experiencing substantial growth pressure. Areas of little or no growth pressure (e.g. the entire North Country of NYS) appear better served by bottom-up planning instruments.

Regulatory Planning Tools

1) The State Environmental Quality Review

The State contributes regulatory policy and funding that assists planners who are sensitive to coastal and aquatic ecosystem management issues to raise environmental concerns as part of its departments' technical assistance. For instance, SEQR Policy states that municipalities must complete an EAF (Environmental Assessment Form) as part of the planning process, before the municipal Planning Board can approve the development application. The SEQR EAF is thus considered a "mechanism for approving, modifying or rejecting development proposals in and adjacent to any state or federal significant wetlands" (NYDEC, 1992). A State agency, the St. Lawrence-Eastern Ontario Commission, or SLEOC, which managed the SEQR process for coastal municipalities in Jefferson and St. Lawrence counties, used to provide enormous technical assistance

with this complex piece of legislation and the development of Local Waterfront Revitalisation Programs. Unfortunately, any state regulatory directives meet resistance locally and such is the case with SEQR. SLEOC was disbanded in 1995 as a demonstration of the new State deregulation policy and SEQR was handed to the Department of Environmental Conservation.

2) The State Coastal Management Program

Under the State Coastal Management Program, only 19 out of New York's 55 Great Lakes municipalities became involved in developing LWRPs between 1978 and 1986. The goal of the LWRP is to "enable coastal communities to plan for and regulate land and water uses, guide coastal development and ensure that such development does not adversely affect coastal resources" (Task Force, 1991: 23). Six of these are in St. Lawrence county and six in Jefferson county. In the development of their LWRP, in fact, the Town and Village of Clayton exceeded the efforts of much larger municipalities and were lauded as a model for other municipalities to emulate (NYSDOS, *Your Coast*, 1991). The Village of Waddington has strongly defended public access along the valuable municipal waterfront and has obtained a sizeable Bond Act Grant for improvement of this core. Ogdensburg, too, has been particularly progressive in updating its LWRP (2000) and blending planning and development with a strong voice in municipal decision making. Progressive LWRPs were developed through a participatory process in neighbouring Lisbon and Waddington as well, but only Waddington's Council ratified it, Lisbon's did not. What, then, are the criteria or the mechanisms for achieving more participatory planning and decision-making? Is it, then, entirely the result of progressive Mayors, Planning Board or Council members, or State influence that have led to the formulation of exemplary coastal resources planning through Harbour and Local Waterfront Revitalisation Plans being drafted and ratified by Council?

3) Incentives

Incentives is one of the tools that senior levels of government have at their discretion in order to accomplish their goals and try to encourage coordination and cooperation in resource management. This is just as true in coastal as in non-coastal areas. It has been used in the study area

where Zoning Ordinances have been considered Both federal and State regulations consist, therefore, of encouragements (not requirements) placed on municipalities (cities, towns, villages and counties) to develop formal planning guides (comprehensive plans, comprehensive development plans, master plans, land use development plans) and to utilize specific planning instruments (zoning, subdivision review, site plan review, building permits, and various regulations among others) (NYS DOS 1998a, b and c). Thus, the allocation of State grant monies is contingent on the existence of a Comprehensive Plan (NYSDOS 1996a; NYSDOS 1999). The positive side of this is that the development of the Plan is a participatory process. The negative side, which often prevails, is that the process is relatively complicated and requires technical assistance and thus further grant monies. Consequently, even though there is wide-spread public perception that senior governments have a responsibility to guide and encourage better decision-making, the use of incentives and the allocation of grants are still suspiciously perceived at the local level that *funding interests are not necessarily local interests*. The State dictates what is important, "here are the funds to make plans in accordance with our standards". This perspective does nothing, therefore, to allay the strong distrust of higher levels of government nor an equally strong tendency to preserve decision-making at the local level by applying Constitutional Article 9.

4) The Clean Water/Clean Air Bond Act (1996)

A State regulatory tool that operates on the allocation principle, but which has been somewhat more acceptable to municipal governments, is the Clean Water/Clean Air Bond Act (Bond Act, 1996). Enacted under the previous Governor (Cuomo), it received no funding initially. Disregarding concerns expressed by citizen groups, Governor Pataki immediately implemented this Act which provides funds to municipalities for implementing geographic management plans for clean water projects and Water Quality Agreement Annex 2 projects that use an ecosystem approach. The New York State Environmental Protection Fund (EPF), as well, stands in stark contrast to perceived deregulation, downsizing and devolution (3D's) policies by significantly increasing state investments in environmental protection projects from \$31.5 million in 1994 to \$125 million in 1998 (IJC 1998).

d) The Planner as Consensus-Builder

Planners and planning, Gomes (1991) says, can only be supported in a political environment that desires them (Street, Waterbury, Jones, Hunter and Baxter 2000, Personal Communication). The image of planning and environmental management became tainted under Section 701 of the HUD Program. Private planning firms received grants to develop municipal plans which ended in numerous conflicts, incongruencies, etc. and gave a bad name to municipal planning (Falton 1998, Personal Communication). Impending closure of a number of manufacturers and major employers in the region has increased the sense of hostility on the part of Mayors and Supervisors to regulations, and planning in general is thus perceived as being regulatory or associated with this.

Planning Advisory Committees

Planning Advisory Committees, which are appointed by municipal council, have no statutory authority and are thus less likely to be perceived by local decision makers as "too green", but are important elements in planning dialogue when the public has few formal opportunities to comment on planning proposals. Although Advisory Committees are well-represented in larger urban areas, they are equally important in rural or rural-urban contexts (Maclaren, 1993). They are capable of providing the point-counterpoint arguments that drive successful environmental planning, ensuring that environmental concerns are addressed in the planning process. The master plans that exist in the study area (13 out of 22 towns in Jefferson have MPs) do not contain functional examples of this planning instrument in spite of the fact that each County Planning department in the study area provides staff members to a number of advisory committees:

We provide staffing services to the EMC, to the Planning Board, to Agriculture and Farmland Protection Board, to the Fair Housing Task Force, it seems like the list is endless.. to the Complete Count Committee of the Census, the list goes on and on. But, these are all boards that work in one capacity or another for the benefit of St. Lawrence County and they're not really advisory to the Legislature in a real sense. The Legislature never asks for their advice, and when they get advice from these boards,

they very often resent it. So, are they advisory boards? ..yes ..no? They're advisory in that they have relatively little real power. The EMC has no area where it can grant approval. The Planning Board has no area where it can grant an approval.. it has an area where it has a statutory power to make a powerful recommendation for health ..in the Project Review, but a locality can always override the decision of the County Planning Board as an approach. (Mooers 1999 Personal Communication).

This override is less possible, however, simply due to the presence and the make up of Advisory Committees. Advisory Committee membership is clearly pluralistic, providing a variety of perspectives and interests relating to the committee's functions. They are selected from academics, economic development and citizens' groups, and individuals, and are usually appointed by the County Board of Legislators for two-year terms that may be renewed over a number of years. The Jefferson and St. Lawrence County Water Quality Advisory Committees are even linked to the Great Lakes Water Quality Board and the Ecosystem Charter and have the potential to provide a basin-wide, ecosystem perspective to the municipal decision-making process. County Planning Boards also provided members to the Village of Massena Citizen's Advisory Committee (CAC) which was composed of a variety of stakeholders from the St. Lawrence Area of Concern. There was usually a member from the local Mohawk communities present on this Advisory Committee as well. In the absence of a skilled planner or skilled facilitator, and with the perception that senior levels of government or business dominated the consultations, the native participants soon became discouraged and left. Over the years, 1989 to 1995, the number and diversity of participants fell. Most left from *participant fatigue* that resulted from feelings of powerlessness or hopelessness due to a number of factors: slowness of the political or judicial process, duration and complexity of completing a Stage 1 (Condition and Diagnosis) and Stage 2 (Options and Treatment) report, domination by leaders or powerful interests groups. Thus, changes were needed to sustain a Committee of concerned citizens. The 21st Century Project, described in the next chapter, provided a strategic inclusion of members of the region's Foundations, Rotary Clubs, Newspapers, Supervisors, utilities and others and was able to produce the level of pluralism needed to champion

sustainable environmental planning and management. In essence, what was achieved was the *coalescence of disparate agencies and actors* hoped for in an ecosystem approach.

If the work of this Project could be integrated into the proceedings of the various municipal councils, the burden of too few planners performing the consensus building role could be lightened considerably. Since the participants come from the planning functions of all counties involved, it could serve as a leverage point for integration of sustainable planning principles. It would allow access to municipal councils and their decision making processes. The planner's role would be pivotal as a conduit for a wider range of perceptions, attitudes and values. Master Plans, Harbour management Plans and other instruments of planning would be beneficiaries.

A final point concerning the consensus building role involves the possibility of ex-urbanites participating in rural affairs. Some of the literature on rural planning (Constantini and Hanf, 1972; Dubbink, 1984; King and Harris, 1989) suggests that positive environmental change in rural communities is usually initiated and driven by new arrivals from urban areas rather than by long-term residents. The message here is that all points of view are valid and that *length of residency* should not be used in an attempt to influence planning-related decisions or arguments presented to council.

e) The Planner as Advocate

The *planner as advocate* role represents an important contribution to environmental improvement. Advocacy theory in planning recognizes the value-laden nature of the process. The planner as advocate acts as a representative for certain groups (e.g. the environmental lobby or even industry) or conceptual platforms (e.g. sustainable development), recognizing that these groups or platforms may lack the expertise or power to be heard (Levy, 1991). In fact, in the tri-county area, planners have argued that this role is not possible for planners. This might explain why all planners were actively involved in the 21st Century Project which, by its integration of influential people, had this potential.

In 1984, the only professional planners were at the County level, and they helped municipalities write their ordinances. Since 1984, 20-30 communities have written Site Plan Reviews. It was the

first time people realized “what was important” for them in their area. Planners are presently assisting communities to write their Master Plans and Harbour Management Plans, and, in so doing are able to be advocates for greenways systems, water-dependent land uses, environmentally sensitive areas, wetlands and areas of natural and scientific interest. Moreover, by providing Local Government Conferences, planners are able to educate and advocate through the demonstration of case studies of municipalities where benefits have been gained from the healthy blending of development and coastal resource protection. While there is a wealth of options for improved community growth contained in the Federal and State Coastal Management Acts, there is a dearth of advocacy instruments available for planners who are sensitive to the principles of sustainable development or an ecosystem approach. After all, since there is such little development pressure throughout the study area, municipal councils should realize that targeting future growth into areas of environmental sensitivity (particularly water resources) cannot be justified, even though the short-term tax benefits of *carte blanche* approvals may appear to be the path of least resistance.

f) The Planner as Land Banker or Steward

In the *land banker/steward* role, the planner identifies and facilitates land transfer and tenure options to protect environmentally sensitive areas and to ensure that surface and ground water quality are not adversely compromised by existing and future land uses (Steiner, 1991). The St. Lawrence County Public Policy Guide of 1995 states that, “many people.. are committed to being good stewards of the land,” and the “sentiment against additional government land acquisition should not be seen as callous disregard for the natural environment”, but rather concerns “about loss of ‘local control’ and threats to the property tax base.” Thus this policy reflects the commitment of the County Board of Legislators that “economic development and environmental conservation need not be incompatible” and that the “lack of employment opportunities in a community may lead to short-term decision making that compromises long-term environmental values” (Policy Guide, 1995). In these circumstances, therefore, few instances of conservation easements, restrictive covenants or land swaps are given consideration by private individuals or institutions. In the Tug Hill area, in Watertown and in some of the coastal municipalities with full-time planners, some

mention of public/private partnerships has been made. The planner cannot be the land steward if the stewardship role is left to other public or private interests. The Tug Hill Tomorrow foundation has, however, been instrumental in public education about managing such trusts as conservation easements, which contributes to their being considered by others as well. For instance, although the State is responsible for protecting wetlands, in the event that a municipality overrules the State's decision, the stewardship role could be assumed by a number of big national NGOs such as Audubon or Ducks Unlimited (Falton 1998, Personal Communication). It is not known yet whether or not local municipalities have explicit rehabilitation strategies for landfills, contaminated sites or derelict lands but, these do exist at the county level (St. Lawrence County Board of Legislators, 1995: 32).

g) The Planner as Fiscal Agent

The Planner as fiscal agent role is often overlooked by decision makers. Fiscal instruments like development impact fees or tax-based incentives like rebates or preferential assessment for alterations to existing land uses are seldom explored in the study area, despite their popularity across the U.S. Given budget constraints, however, the potential of user fees is being explored, but to what extent for funding environmental remediation strategies, is unknown (Ibbitson, 1995).

When behavioral changes concerning land use or transportation are desired, alterations to public perceptions and attitudes may not be required. For example, transportation research has revealed that "commuters' choices [between cars and public transit] are based on comparisons of cost and convenience, not on abstract values. It is not attitudes that must be changed, but the relative service and cost of options offered to commuters" (ULI, 1989). This suggests that fiscal instruments, particularly user fees and development fees, may be an important component of the planning arsenal. The Planning Departments of Jefferson and St. Lawrence counties are looking at such options with the proposed interstate artery along the St. Lawrence River.

Local municipalities also need to recognize that planners, as well as engaging in traditional planning roles (e.g. regulation and infrastructure staging), can serve the community by securing federal and state funding. For example, they can develop LWRPs and Comprehensive Plans, but

also help in affordable housing, infrastructure improvements, health care, and economic and resource development.

h) The Planner as Developer

The predominance of a pro-development, anti-regulatory perspective in the North Country of NYS has countered a great deal of the social and health benefits to be derived from planning. For example, the building of infrastructure for water and sewage only took place in the 1990s. It was a combination of locational forces and the Development Authority of the North Country (DANC), a quasi-state agency that is able to use development incentives as a leverage, that was able to overcome the prevailing inertia to change and implement a policy that was a State priority. A principal locational force in this case was the decision to proceed in 1984 with the long-delayed Fort Drum expansion, a decision that led many communities to the realization that perhaps things don't always remain the same (Comprehensive Report for the Expansion of Fort Drum, 1984).

Although it is not a planning department, the DANC is able to initiate *planning with objectives* (Sauter 1998, Personal Communication). They are able, for instance, to provide extremely low/reduced mortgage rates, affordable and adequate planned housing, developed in accordance with community social and environmental goals since they are perceived as a regional development agency and not a planning body. As a quasi-State agency, their ability to obtain grants has allowed them to achieve a number of cooperative multi-community joint ventures in housing and water quality protection through the initiation, funding and care of a regional infrastructure. In this way, DANC is directly involved in increasing municipal capacity in coastal zone decision making.

Another municipality that demonstrates the role of the Planner as Developer is the City of Ogdensburg. It is also an example of the use of incentives in a positive manner to achieve goals within the mandate of the NYS Coastal Management Program. Ogdensburg is a municipality that has invested in a planner with responsibility for both planning and economic development. This role does not conflict with the pro-development, anti-regulatory perspective. Under present economic circumstances, the Director of Planning and Economic Development, who is just under the Mayor and City Manager, is powerful in terms of both authority and capacity to enact and to enforce

policies that capitalize on incentives (Figure 6-2). If this person is a leader with integrity, he/she can be a positive catalyst in terms of resource planning and management. Thus, the Director of Planning and Economic Development of the City of Ogdensburg has been a key mover in the update of both its LWRP and its Comprehensive Development Plan, which includes a much-desired revitalisation of the port and surrounding waterfront (Murphy 1999, Personal Communication). The City conforms with the State SEQR regulations and conducts a review of any major project in cooperation with both State and federal responsible authorities. In the planning capacity, the planner is strategically linked to agencies who provide grants. In the development capacity, he is able to provide very attractive incentives with the potential to entice new businesses to a risk-free business environment with improved amenities that include infrastructure, port facilities, a greenbelt, a scaled 10-year tax exemption, deferred interest payments on business grants and loans, employee skills training, feasibility grants, and many others. In terms of bridging mechanisms, this person is also very well linked, having been a regular participant in Local Government Conferences and other economic/ecological initiatives for the North Country through the North Country Alliance that include environmentally-linked projects such as the "passport" for eco-tourism on the estuarine reserve and the St. Lawrence River Aquarium.

The combined planning and economic development role can be, therefore, be a very effective bridge between the theoretical and the actual range of choice. A comparison with two other municipal types using the institutional analysis model described in Table 3.7, reveals that, while the list of planning tools available to the planner in Ogdensburg may be less than in the other two municipal types - the Town of Clayton, for example, has, with assistance from the County Planning, progressively developed its own Harbour Management Plan - yet, the number of roles available is greater in Ogdensburg because of the ability of the Planner as Developer to enlist municipal support and initiate very important fiscal incentives to attract entrepreneurial ventures (Table 6.3). All three municipalities have, however, combined planning with environmental protection in the development of recent municipal plans, and Clayton and Massena have chosen to have public input as an integral part of the planning process as well.

i) The Planner as Radical

The *Planner as radical* role tends to be viable in communities that are either experiencing exponential growth or are facing collapse. Neither extreme is prevalent in Jefferson and St. Lawrence counties where the socio-economic context of continued low-growth is anticipated. Resident planners have the experiential knowledge to understand that, within this context, if planners were to attempt to autocratically impose the plan-making function, it could set the planning process back years (McClendon 1991: 205). A planner as radical role is not a solution in this context where recent progress is evident. A County Board member recently stated, "In Franklin County we don't *plan*, we *act*" quickly adding that, "I'm Republican, but I'm not against zoning and planning, in fact, I would like to get a County Planning Board in Franklin County" where there simply is none. It would appear, then, that resistance to planning does not derive so much from ignorance of the potential benefits of land use planning, a barrier that can be overcome by public education campaigns, nor is it from the power of purely negative voices which are present in every community. Rather, at the first level, it reflects a perception of a lack of expertise and confidence at the decision-making level. This lack of confidence can result in "hedging" which, like the "precautionary principle" in the face of uncertainty, can lead to resistance or to inaction (Mitchell 1997). Moreover, "by inaction.. a path is chosen which can result in the loss of many of the state's most viable and irreplaceable resources" (NYSDOS, 1989). It would appear, therefore, that there is not so much disagreement on the benefits of "co-operative" ventures between municipalities that will actually save them money (including the use of zoning and planning), but rather a widespread resistance to loss of local and individual autonomy. Perhaps, then, the planner does not so much have to be a radical as a diplomat and consensus-builder.

There are a number of reasons to be optimistic. Economic conditions fluctuate as do political support and influence. Thus, while the State has cut regulatory agencies and staff, it has also begun to reinvest in its once-defunct planning service and functions. A number of support documents have recently been updated and published by the State Planning Department in the James A. Coon Local Government Technical Series (1998). Locally, both St. Lawrence and Jefferson counties have been hiring additional planners to meet the increase in demand for their services - services which digress

**TABLE 6.3 - ASSIGNED PLANNING AND MANAGEMENT ROLES OF NEW YORK STATE
COASTAL MUNICIPALITIES**

Criteria	Town - Clayton	Village - Massena	City - Ogdensburg
1. Context "Power and Authority Hierarchy"	Town Board enacts and administers the ordinances	Village Board adopts Code ZBA "power" to determine and "vary" Code application	City Board enacts and adopts
2. Legitimization or Legal Standing	Town Law, Municipal Home Rule Act, Town Code - full range planning tools	Town Law, Municipal Home Rule Act, Village Code - full range except LWRP	City Law, City Code - full range planning tools
3. Municipal Structures	Joint Village/Town Planning Board - Enforcement by Code Officer and Supervisor	Village Planning Board - Enforcement by Code Officer and Mayor	Mayor, City Manager, Director Planning and Economic Development
4. Functions, Roles and Responsibilities	Technician; Land Steward; Developer / Entrepreneur; Consensus Builder; Fiscal Agent.	Technician; Land Steward; Plan Maker; Developer/Entrepreneur of "Gateway to 4th Coast" program; Consensus Builder	Technician; Land Steward or Banker; Plan Maker; Developer/Entrepreneur; Consensus Builder; Fiscal Agent; Radical
5. Processes, Mechanisms Utilized	1- zoning ordinance - public health; establish land-use choices 2- subdivision reg. - provide orderly growth, infrastructure adequate 3- LWRP- protect/enhance local resources in regs. framework 4- Harbour Management Law- protect health, regulate water-based activities 5- Harbour Management Plan- provide integrated framework and provide local/State coordination	1- zoning ordinance - regulate and provide for location buildings and population density 2- Comprehensive Plan. - plan development districts; greenbelt 3- RAP process uses ecosystem approach in CAC 4- Restoration Council	1- zoning ordinance - regulate and provide for location buildings and population density 2- Comprehensive Plan. - plan development districts; waterfront revitalization. 3- LWRP- protect/enhance local resources in development framework
6. Perspectives in Role Assignment	County Planners identify State and federal agencies to help implement local plans	RAP process- collaborative partnership IJC, federal, State, industry, municipal	Dir. Planning and Economic development able to initiate economic incentives; tax exemptions from real property tax; business assistance resources; low interest or deferred interest payments; grants for feasibility studies and employee skills training; reduced electric, gas and phone rates; zoning allowances.

Source: Adapted from Mitchell, 1997: 257

somewhat from the traditional planner's roles (Table 6.1). In addition to County Planning's Project Review responsibility, however, there have been proactive community development initiatives, such as resurrecting and publishing the *Guide to Financial Services* to provide advice for entrepreneurs thinking of establishing businesses within the county (Mooers 1999 Personal Communication). County planners have established a reputation of empathy and innovation with communities having hard economic times and are even hoping to be more involved in guiding development in a manner that fulfils the ecosystem approach (Photenhauer 1999; Bourcey, 1998 Personal Communication). Of the list of roles performed by the County Planner (Table 6.1), no single planner is assigned all tasks. They are divided and shared among the staff who meet regularly to discuss them.

KEY RESIDUAL MESSAGES

Chapter 6 has assessed the perspectives that appear to be dominating coastal zone management in Upper New York State, and what the existing roles of members of the planning community are in this regard. Field research and examination of the guiding documents indicate that the capacity of decision makers to utilize planning tools to manage resource use is considerable within the "theoretical range of choice" available in Jefferson and St. Lawrence municipalities (Tables 6.1 and 6.2).

In contrast to this theoretical appreciation, however, interviews revealed that municipal planners believe that the possibility of the planning function becoming the primary guiding process for local land and water-use decision making is remote. Planners have a selection of roles and instruments from which to choose, such as plan maker, technician, developer and regulator, yet a number of factors have limited their practical application. These include perspectives of economic stagnation or decline that have led to the encouragement of economic growth and the adoption of policies of downsizing, deregulation and devolution of planning and management functions and roles. Consequently, a number of potential roles for the management of land and water resources and the inclusion of an ecosystem approach are constrained or impossible (Table 6.2). Planners and decision makers have had to embrace non-regulatory tools that work within the context of each municipality. Each municipality has its own distinct personality and municipal planners work quietly in the

background in roles such as consensus-builder or advocates of non-intrusive approaches. "Holistic Community Development" is one such approach. This is a surrogate term for an ecosystem approach, but it does not produce local resident's fury, and it is more acceptable in order to enlist citizen and political support (Zimmerman 2000, Personal Communication).

Chapter Seven looks at a number of innovative means or "bridging mechanisms" that exist presently in the study area that contribute to this potential to move beyond perceived limitations and even to facilitate the implementation of components of an ecosystem approach of most benefit for effective municipal decision-making.

CHAPTER VII

EVIDENCE OF INNOVATIVE PARTNERSHIPS AND BRIDGING MECHANISMS IN UPPER NEW YORK STATE MUNICIPALITIES

PURPOSE

The purpose of this chapter is to answer the fourth Associated Research Question. It is:

What bridging mechanisms, if any, have been developed to assist municipalities, planners and publics in planning and managing their environments?

It focusses attention on the investigation of "bridging mechanisms", that is, innovative institutional arrangements that ***are successfully providing*** rural municipalities with human, technical and informational resources. These resources help fill voids and help overcome barriers to knowledge, communications and information-sharing. The bridging mechanism can lead to the creation of effective partnerships and to the development of innovative solutions to coastal and other land and resource-use problems. Discussion attempts to probe for answers to such questions as: ***What bridging mechanisms*** exist in St. Lawrence and Jefferson counties? ***What roles*** do these bridging mechanisms play? ***To what extent*** do they increase the capacity of municipal planning and management to ***integrate the ecosystem approach*** and capture multiple perspectives? What are ***their characteristics*** and, ***what accounts for any success*** achieved? ***How do they bridge*** any municipal planning barriers?

The chapter provides a typology of "bridging mechanisms" in Jefferson and St. Lawrence counties, NY, and identifies their key attributes - attributes that make these bridging mechanisms important to the achievement of coastal and other management goals in the spirit of an ecosystem approach.

CONTEXT

An ecosystem approach is considered "fundamental to the management of marine and terrestrial ecosystems and their coastal interface." It continues to receive support in this respect at the international and national/federal levels (Thornburn 1999, Personal Communication; Environment

Canada 2000; Gourd 2001, Personal Communication). Yet, as was demonstrated in Chapters 5 and 6, the formal municipal planning process in Upper New York State demonstrates no sensitivity to its use in either land use planning or coastal zone management. Municipalities have been heavily committed to pursuing a short-term, pro-development perspective within a "narrow geographical and functional scope of concern" or their own interests (IJC 1980b: 60). This perspective necessarily excludes the broader issues and mandates of coastal zone protection and management such as the Great Lakes Water Quality Agreement with its ecosystem approach and its pluralistic process of coastal zone decision-making. In addition, Federal and State governments, since 1995, have been challenged by budget and tax cuts, downsizing, deregulation and downloading of responsibilities to municipalities and "a general withdrawal of political will to deal with environmental issues" (IJC 1990: 199). The challenge has greatly weakened public belief that senior levels of government are serious about environmental quality and commitment to the Great Lakes Water Quality Agreement. In addition, it has created a feeling or sense that senior levels of government are not terribly concerned with the impacts of "loss of capacity" by local actors and agencies at the local level (IJC 1990: 199). Who or what is going to champion municipal capacity-building to utilize the ecosystem approach in coastal zone management?

The Water Quality Board (WQB), the principal advisory board to the International Joint Commission (IJC), actively addresses its own mandate to "keep informed regarding programs and other measures taken with respect to, or relevant to, implementation of the Agreement and [addressing] the adequacy and effectiveness of such programs" (IJC 1998). In this regard, it is very sensitive to the implications of inadequate municipal capacity and how this state impacts its role in carrying out responsibilities for Great Lakes-St. Lawrence River basin management. The WQB has specifically noted its own *"loss of intellectual capability as a result of resource cuts. As research and surveillance and monitoring positions are eliminated, it will be difficult to regain such expertise and intellectual capability in the near future. For example, it often takes ten years to train and develop effective researchers"* (IJC 1998c).

To be effective in its tasks, therefore, the IJC and its Boards, too, are constantly seeking

innovative ways and mechanisms whereby programs under the GLWQA, and the ecosystem approach, can be delivered in more effective ways. The IJC recognizes, moreover, that municipal "capacity building" is an undeniably essential element in this process - a process that is to embody "integrative approaches such as sustainable development and the ecosystemic approach" (IJC 1994: 48). Thus, in spite of obvious weaknesses in sufficiently defining the concepts identified in Chapter 4, there is recognition that such integrative approaches contain elements considered vital to the many stakeholders who wish to be involved in the process of decision-making affecting their coastal communities - elements such as meaningful public participation, cooperation, coordination and communication among the stakeholders, and the "nesting of economic and environmental decisions within the joint pursuit of long-term economic, environmental and social sustainability" (IJC 1994: 17).

It is in the process of examining municipal capacity and capacity-building to deal with coastal management issues that one realizes that municipalities have considerable creative ability to address these problems locally. There are a great number of civic groups that work within and among the communities in St. Lawrence and Jefferson counties. These groups effectively perform a number of important capacity-building roles.

METHOD

The Long Interview and Participant Observation methods, as discussed in detail elsewhere, necessitate personal interaction with research subjects in their environment. Planning community members, strategically placed non-governmental organization representatives, and academics at regional universities were each consulted in relationship to the structure, functions, processes and mechanisms, and perspectives of bridging mechanisms identified within the study area. The researcher/participant observer obtained this personal interaction by being an active participant in four Local Government Conferences. It was only because of this involvement that the researcher was exposed to bridging mechanisms neither identified nor discussed in government publications, academic or other literature.

ANALYSIS OF RESULTS

Municipal planners and decision makers in Jefferson and St. Lawrence counties have identified a number of the factors that limit the capacity of their municipal offices to deal with the multiple tasks assigned them (Chapter 6). Planners, for example, are assigned a great many roles and tasks that are oftentimes unrelated to landuse planning and management. These include: delivering hot meals during ice storms and other crises; serving as community resource persons for low income housing claimants; serving the needs of local Council Members who can call upon them for any task; and providing staff to support a variety of local Action Committees ranging from Right-to-Life campaigns to library fund-raising drives (Fulton 1998, Personal Communication). Planners are also assigned to burdensome grant writing, and to administering grant programs of the Federal and State. According to key planners, very little time is left for planning itself (Fulton 1998; Street 1999, Personal Communication). Many bridging mechanisms have emerged, therefore, to fill the voids in planning and management. In essence, they are doing planning and management tasks that have been taken away from professionals in the community.

TPOLOGY OF BRIDGING MECHANISMS

Organizational Rationale

Bridging mechanisms serve a variety of purposes within and among communities. For example, bridging mechanisms have been initiated at the State level with State-led goals, while others link national or international goals and perspectives, and still others have regional objectives or perhaps very specific local ones (Table 7.1). As a consequence, their organizational structures and life-spans are quite individualistic. Two bridging mechanisms, the Tug Hill Commission and Local Government Conferences have been identified by key planners and managers as being among the "most influential" and can be used to illustrate the most important attributes of bridging mechanisms. As shown below, they are drawn from different places in the classification of seven types. These are:

Type I- Quasi-State Institutions: These institutional arrangements have a State constitution and periodic, re-authorized State funding. They employ local staff and seek to harmonize local and

TABLE 7.1 - TYPOLOGY OF BRIDGING MECHANISMS IDENTIFIED

INSTITUTIONAL STRUCTURE:	CONTRIBUTION of BRIDGING MECHANISMS
I- Quasi-State Institutions Tug Hill Commission * Development Authority of the North Country Soil and Water Conservation District New York Rural Development Council	Local Government Conference in Watertown: a) provides training/updates, introduces concepts/solutions b) provides case studies that demonstrate benefits of cooperation Circuit Riders Program: a) facilitates communication within the entire Tug Hill region b) provides continuous update and institutional memory c) provides cost-effective local expertise/less consultant dependency Tug Hill Tomorrow: a) provides for land trusts
II- Academic Institutions Cornell Cooperative Extension William Mervin Rural Services Institute * St. Lawrence University, Canton. Clarkson University, Potsdam.	Local Government Conference in Potsdam: a) builds network and cooperation based on success stories b) facilitates introduction of innovative local solutions c) links university/community resources and strengths
III- Municipal Institutional arrangements Akwasasne Environmental Services Division County Planning Departments Environmental Management Council	a) environmental monitoring programs b) facilitates capacity-building c) provides technical assistance to County Board of Legislators, to County Planning Board and to municipalities d) monitors local/State progress e) custodians of community interests
IV- Partnerships Citizen's Advisory Committee Massena Area of Concern Restoration Council Local Waterfront Revitalization Plans North Country Alliance St. Lawrence County Water Quality Advisory Committee	a) ensures citizen input in remedial action decision-making b) ensures citizen monitoring of pollution cleanup activities c) facilitates review of community and State coastal management goals d) seeks and encourages cooperation for economic development e) monitors federal, State and local policies, programs and projects with respect to coastal environment

V- Non-Governmental Organizations (NGOs) 21st Century Project * Great Lakes United League of Women Voters Save the River Trout Unlimited	a) 8 Key Performance Area Working Groups in municipal development b) forms coalition of concerned citizen's groups basin-wide c) ensures citizen input at all levels d) monitors federal, State and local policies, programs and projects with respect to coastal environment e) habitat rehabilitation programs
VI- Non-Profit and Not-for-Profit firms The New York Planning Federation Adirondack North Country Association St. Lawrence Leadership Institute New York Main Street Alliance	a) provides technical assistance and workshops in capacity-building b) facilitates the forming of public/private partnerships c) assists with writing of proposals for grants for local initiatives d) provides workshops, certificates in municipal leadership and cooperation
VII- Foundations A.C. Walker Foundation The Nature Conservancy of NYS Ducks Unlimited, NYS Chapter	a) provides funding for community socio-economic development ex. North Country Research Fellowship Program b) encourages sustainable development initiatives

* - elaborated upon in text

State goals for a specific region (Quinn 1999; Sauter 1999, Personal Communication).

Type II- Academic Institutions: These institutional arrangements have long been involved in providing public assistance to some of the 800 local government units in upper New York State. They share academic resources, such as students, faculty, equipment and physical facilities, in such a way that local government Boards and Councils become more effective, efficient and do what they do better (Chugh 1999, Personal Communication).

Type III- Municipal Institutions: These institutional arrangements provide professional expertise and guidance on a variety of landuse and resource use issues and problems. As municipal agencies, they must implement the public policy expressed by Councils and other elected officials.

Type IV- Partnerships: These institutional arrangements link public and private stakeholder groups and interests, for example, in the Jefferson and St. Lawrence County Water Quality Advisory Committee; in the Massena Area of Concern Restoration Council and Local Waterfront Revitalization Plans (LWRPs); and in the North Country Alliance (NCA).

Type V- NGOs: These institutional arrangements are the fora of the "Third Sector." They often emerge because some aspect of human activity has been perceived as in need of improvement, or is perhaps intolerable, and there is no institutional arrangement that is able to, or willing to, make the desired changes. A great number of these link to national or international NGOs for greater lobbying power and can develop sizeable legal status or funding in order to purchase and protect heritage resources such as wetlands and other environmentally significant areas.

Type VI- Non-Profit and Not-for-Profit Organizations: These institutional arrangements may emerge because an individual or a group of individuals possess a particular expertise and wish to provide it to the municipality or other client.

Type VII- Foundations: These institutional arrangements often emerge because philanthropic individuals or a group of individuals possess a particular funding source and wish to provide needed services to the municipality. These are key funding sources for many community development projects.

The following section briefly discusses two of the most widely-recognized bridging mechanisms operating in St. Lawrence and Jefferson counties.

QUASI-STATE - LOCAL GOVERNMENT PARTNERSHIPS

Local Government Conferences

a) Context

The North Country Local Government Conference continues, after 12 years, to be an extremely important bridging mechanism. They are strongly supported by the resident academic institutions, by citizen volunteers, by State departments, by Non-Profit Organizations, NGOs, economic development interests and others. The Conferences have as their mission municipal capacity building. Why? Because rural governments are known to be under-funded and under-staffed. This is accomplished by providing a forum which strengthens municipal employees' understanding of municipal issues and problem solving. Training sessions and workshops are the key instruments used.

The first Local Government Conferences (LGC) was organized locally by the Cooperative Tug Hill Commission. It was recognized as so simple and yet so effective that the NYS Department of State, Office of Planning, adopted the model in 1998 and now offers them in other parts of New York State. The first LGC was initiated because, among the six counties within the North Country of New York State, of which two are in the Tug Hill plateau, there are over 800 local governments including school district, fire district, villages, towns, counties, etcetera. The numerous small units represent a very complex and expensive way of managing and providing services to residents - residents that also expect their municipal councils and staff to perform a variety of tasks requiring a great deal of labour and expertise. As a consequence, voluntarism has become a necessity, and

volunteers or the “Third Sector” has become organized in a variety of institutional arrangements. These institutional arrangements themselves have become bridges among these many units.

b) Structure

The North Country Local Government Conferences (LGC) are actually a union of stakeholders - academic, municipal representatives and folks from senior governments (Chugh 1999, Personal Communication). Both the Jefferson and St. Lawrence County Conferences provide workshops on different topics that are designed to enhance local capacity at low cost (Table 7.2). Although NYS DOS became a partner in 1998, the conference themes are decided upon by a volunteer Coordinating Committee composed of local government officials and local government planning groups.

c) Functions, Processes and Mechanisms

A new role is now being performed by the Local Government Conferences. They are beginning to share the experiences of local and state-wide initiatives and their creative solutions to municipal problems. This sharing serves at least two significant purposes. First, it provides concrete evidence of how cooperation and the use of planning tools applied elsewhere in the State have been beneficial to municipalities in the three sectors that are of most concern: the environmental, the social and the economic. Second, it is the basis for stimulating further innovative action through demonstration projects or cases (Chugh 1999, Personal Communication).

d) Perspectives

There are a number of distinct signs that these conferences are considered important and consequently continue to receive support. One is the variety and number of participants from Mayors and Supervisors to Clerks and interested citizens, particularly regulars, who return because they gain new and useful information. Another is the profile of influential people who speak at the Conferences and demonstrate by their presence and their words the important role the conferences play.

TABLE 7.2 - LOCAL GOVERNMENT WORKSHOP PROGRAM, SUNY Potsdam

Tuesday, October 3, 2000

Managing Local Government: Tradition! Transition! Transformation!

8:00 - 8:45 Registration and Coffee - Maxcy Hall
 8:45 - 9:15 Welcoming Remarks - Ruth Garner, Mayor of Potsdam
 - John Falton III, President, SUNY Potsdam

9:30 - 10:45 Session I Workshops	Junky Yards and Junk Yards Room 102	E-Government to Government: Making Your Job Easier Room 104	back to Basics for Village and Town Clerks Room 101	State Coastal and Inland Waterways Programs: What They Mean... Room 220	Historic Preservation: Using the Foundations of the Past Room 224	2000 Real Property Tax Legislative and RPS Version 4 Update Room 221
10:45 - 11:00	Break - Coffee and Snacks					
11:00 - 12:15 Session II Workshops	Working with PILOTS To Encourage Business development	Cooperative Municipal Investing in New York - an Update Room 104	Legal Issues for the Municipal Clerk Room 101	Planning and Zoning Board Refresher Room 220	Restoring and Revitalizing Downtown Areas Room 224	Annual Reassessment - Where Are We Now? Room 221
12:15 - 1:30	Lunch - Music Provided by Crane School of Music - location : College Gymnasium Keynote Speaker - Robert Gorman, Assistant Managing Editor, Watertown Daily Times					
1:45 - 3:00 Session III Workshops	Local Government Questions and Answers Room 102	Conflicts of Interest: Avoiding Headaches & Headlines Room 104	NYS Dept. of Health: Vital Records - Births, Deaths & Marriages Room 101	Lessons in Community Economic Development Room 220	E-The People: Government... for the Future Room 224	Utility Valuation in Light of Deregulation Room 221

NB : All Workshops Will be Held in Maxcy Hall
Between sessions, Take the Opportunity to Visit a Variety of Exhibits in the Hall (or in the Gym)

QUASI-STATE - LOCAL GOVERNMENT PARTNERSHIPS

The New York State Cooperative Tug Hill Commission (THC)

Plan Making That has Succeeded - The Tug Hill Model

a) Context

The Tug Hill Commission was formed because of three principal forces. *First*, the threat of an imposed model. Development pressures and recreational needs in the highly-urbanized and politically-powerful south east NYS began to threaten the natural resources base in the rest of the State, including the Adirondacks, the Catskills and the Tug Hill Plateau. Tug Hill is a 2000-square-mile plateau rising from the eastern shore of Lake Ontario to the Adirondack mountains. It includes numerous lakes, wetlands and rivers, and forest and farm land along the Black River on the north and east. Some areas receive the largest snowfall in the East (as much as 20 feet). Its economy and population of slightly more than 100,000 relies on forestry (mostly privately-owned), farming, and tourism (especially the world class fishery on the Salmon River). Many residents commute outside the region. Most of the population is concentrated in villages and towns in four counties (Jefferson, Lewis, Oneida and Oswego), near Watertown, Syracuse, Utica and Rome bordering the plateau. In many respects the Tug Hill Region's socio-economic and environmental profile mirrors that of the north shore and the United Counties of Ontario.

This threat resulted in the creation of the Adirondack State Park, largest in the eastern United States. It engulfed most of the Adirondack mountain area and imposed strict land-use policies. The State Commission appointed to manage it offered little input from the existing local governments or property owners. In essence, public opinion in the Tug Hill region responded that, "We don't want such a creature imposed on us" (Street 1998, Personal Communication). *Second*, local concerns related to the state of anarchy in landuse and natural resource management. In essence, public opinion in the Tug Hill region can be summarized by the statement, "We want land and resource development in our own terms. We want to maintain the character of the Tug Hill Plateau" (Quinn 1999, Personal Communication). *Third*, development pressures arising from non-residents wishing to establish housing developments, trailer parks, seasonal hunting and fishing amenities, and increased demand for services in the Tug Hill. with the State led to a Cooperative model that

satisfied the majority of both State and local requirements. In essence, public opinion in the Tug Hill region was that, “We don’t want to become a recreation resort. We want to conserve our natural resource base” (Falton 1998, Personal Communication).

b) Structure

The Tug Hill Commission was originally legislated into being in 1972 by State Law (Chapter 972), amended in 1992 and 1998. Chapter 561, Laws of 1992 state, “The purpose of the commission shall be to enable local governments and private organizations, and individuals to shape the future of the Tug Hill region” with its programs including “conservation and protective use of natural resources” and “strengthening of the long-term economy.” This broad purpose statement is addressed in its structure: Its nine Commissioners, appointed three each by the Governor, State Senate and State Assembly are Tug Hill residents with expertise in four domains: environmental protection and land use planning; community and economic development; technical assistance, training and technology; and information sharing through “Councils of Governments” (COG’s) in each member county. There are presently five Councils of Government that provide the institutional fabric needed to retain municipal character and promote municipal cooperation and resource sharing - the Cooperative Tug Hill Council, Northern Oneida County Council of Governments, North Shore Council of Governments, River Area Council of Governments and Salmon River Local Government Service Cooperative. The Tug Hill Commission coordinates communication through a Circuit Rider program and Local Government Conferences.

The circuit rider concept traces its origins back to the depression years in the United States. Considerable trauma was experienced at this time by rural communities and the agricultural sector. Circuit riders were technically-trained professionals hired by federal and state agencies to be “officers of educational outreach.” They would consult with individuals and groups experiencing technical and financial difficulties, and would help design appropriate courses of action. Today, the Circuit Rider Program has been developed to address the municipal capacity issue and many of the concerns of the Tug Hill region. Rural municipalities, as stated earlier in the thesis, generally lack “in-house” professional planning expertise. Circuit riders in the Tug Hill are local residents working through their Councils of Governments to achieve capacity goals. Perhaps one of the most important

of these is the creation of a volunteer network in the Tug Hill region.

c) Functions, Processes and Mechanisms

The key attributes of the Tug Hill Commission are:

1) It represents local interests

Since its creation in 1972, this institution has demonstrated its sensitivity to local goals and objectives as well as to the provision of technical assistance landuse planners and developers.

2) It is cost-effective in the poorest part of the State

The Tug Hill Commission initially had a staff of 28. Today there are twelve employees, including three planners, two Geographical Information Systems operators, Community Development Coordinator, and four "Circuit Riders." The Circuit Rider in Oneida has two assistants.

Its governing body, the Tug Hill Commission, meets monthly. It hires the Executive Director of the Commission and makes key financial decisions. Funding is by "state appropriation" and the annual budget of \$760,000 is modest and in keeping with its location in the poorest part of the State.

3) It is communicative

Its permanent staff is closely linked to the Circuit Riders. They meet continuously with staff and monthly with the Commission. In addition, the "Riders" have been proactive through the use of an e-mail listserve so that both clients and the Commission are constantly aware of developments, needs, and innovative solutions used in other Council areas. Their phones are always open in order to be responsive to their Councils, and this sometimes includes during vacations as well.

The THC has produced more than thirty Newsletters, which also serve as its Annual Report, as well as monthly and quarterly reports to the State government, and the weekly Tug Hill Times.

4) It is non-threatening

The Tug Hill Commission, must provide a progress report to the Governor of New York every three years. The report must reflect upon progress made in achieving locally defined goals and objectives. The Tug Hill Commission is largely a facilitator of projects that are based on local municipal needs and objectives - not those of the state government. As a consequence, considerable time is spent canvassing local opinion, monitoring the reaction of Circuit Riders to community issues and events, and being proactive in holding public meetings and workshops.

5) It can be ended if no longer necessary

The Constitution of the THC contains a mandatory "Sunset Clause." It was necessary for local government acceptance at the outset. That is, if the Commission is successful in its role of providing State support and municipal capacity-building, it would eventually no longer be needed and would be discontinued. Throughout its 29 years, the THC has been instrumental in training local officials. But, the high turnover rate among local officials and municipal staff members has continued. The THC serves, therefore, as "the institutional memory" for the four counties, and the centre of long-term planning and management.

6) It serves as a catalyst for local and regional initiatives

Finally, in cooperation with local and County Planning Boards and educational institutions, the THC is a key catalyst, supporter and contributor to the highly-successful, annual Local Government Conference in Jefferson County where all levels of government are able to play a small, but important role. Even today, **the state is not ready to support state-wide municipal capacity building**. Yet the THC is able, through its communication network and the Local Government Conferences, to provide this. Its legacy of cooperation still serves St. Lawrence and Jefferson counties.

KEY RESIDUAL MESSAGES

This chapter has identified a lattice of 27 "bridging mechanisms" so-named because they are able to bridge many of the normal barriers to effective decision making within the complex, multi-jurisdictional coastal environment of St. Lawrence and Jefferson counties. These mechanisms complement the municipal decision-making framework by adding institutional structures and functions, processes and mechanisms with key attributes that are lacking in the municipal framework. Noteworthy attributes include cost-effectiveness, a rich human resources pool, with a participatory and communicative planning philosophy, a locally-driven agenda and an extremely positive outlook.

They have been classified into seven types based on an analysis of their institutional structure, functions, legitimization, processes and philosophical elements. Two bridging mechanisms have been presented in more detail to expose their contributions to municipal capacity building.

They have been selected, and their successes and effectiveness measured, against an important standard, local acceptance. Local municipal councils have lauded the accomplishments of the Tug Hill Commission and the Local Government Conferences for their innovative municipal projects in the study area.

CHAPTER VIII:

CONCLUSIONS AND RECOMMENDATIONS

This chapter returns to the central research question and provides an answer to the municipal capacity question. It also presents a set of recommendations to three stakeholders in the New York coastal zone: the International Joint Commission and other agencies and actors attempting to provide normative policy guidance; Municipalities attempting to enhance planning and management capacity in order to deal with coastal, environmental, natural resource, and other community problems; and Non-Governmental Organizations and other bridging mechanisms that are attempting to mobilize human, technological and other resources. Finally, the Chapter ends with a prescription for future research along three lines of inquiry.

RESEARCH DYNAMIC ONE: AN ECOSYSTEM APPROACH

What perspectives are contained within the Ecosystem Approach of the International Joint Commission (IJC)?

Content analysis of IJC documentation *specifically* reveals:

- *Normative discourse* related to the ecosystem approach and its components has evolved considerably over the 22-year period;
- *Appreciable attention* throughout this period, both explicitly and implicitly, has been *afforded administration and implementation components*. Moreover, the ecosystem approach has consistently been referred to as the preferred framework for improved decision-making from both strategic and operational perspectives;
- *Definitional stagnation* of ecosystem approach components has persisted throughout the study period, and particularly for the municipal level;
- *Economic development issues* continue to dominate all planning and management experience, and other dominant perspectives. An ecosystem approach needs to be defined

as a framework that makes economic decision making more effective, not more restricted.

A fundamental need remains. It is to have an ecosystem approach translated into operational terms for municipalities and other action sites. Particularly within the last two research years 1997-1999, IJC discourse has evolved considerably with reference to mechanisms for facilitating its comprehension and implementation. If an ecosystem approach is to be involved in the decision-making process in Jefferson and St. Lawrence counties, the impact of this last component on municipal capacity must continue to be explored.

RESEARCH DYNAMIC TWO: DEDICATED POLICY AND PRACTICE

What is the level of congruency between the Ecosystem Approach of the IJC and the dedicated coastal management experiences of New York State?

Unfortunately, any reference to the binational Water Quality Agreement (WQA), or the ecosystem approach that it embodies, is not included in either the State, federal or local policies and laws. In addition, select interviews reveal that, the ecosystem approach has not gained widespread recognition. In other words, an ecosystem approach is absent in the discourse of local decision-makers in Jefferson and St. Lawrence counties.

RESEARCH DYNAMIC THREE: MUNICIPAL PLANNING CHANGES

What perspectives appear to be dominating coastal zone management in Upper New York State, and what is the existing role of members of the planning community in this regard?

A number of key residual messages aggregate to form an answer to this question:

The Planning and Management Functions

- *Municipal planning experience is both short in history and in application;*
- *Municipal planners in Towns and Villages are largely non-existent;*
- *Municipal Planners in the counties perform traditional planning roles (developer and regulator) with few planning powers;*
- *Municipal planners in Cities perform select roles, often related to providing necessary government services, and not those related to planning;*
- *Municipal Planning Boards in the Counties perform an advisory, review function, in the land use planning process;*
- *Municipal Planning Consultants from the private sector are rare and are considered “odious”.*

These functions are closely linked to economic development and competition with adjacent municipalities.

The Planning and Management Reality

- *Home Rule is considered paramount and is energetically defended;*
- *Individual property rights are considered sacrosanct;*
- *Municipal independence and individuality are considered essential but costly;*
- *Intermunicipal cooperation is difficult to achieve and is only undertaken if financially justifiable;*
- *Suspicion exists of all regulatory authority and "top-down" planning and management;*
- *Suspicion exists of State motives and authority;*
- *Suspicion exists of all planners and planning consultants;*
- *Suspicion exists of both the “regulatory” planning process and product;*
- *North Country economic state is the dominant decision-making force, and a pro-development philosophy has predominance.*

What bridging mechanisms, if any, have been developed to assist municipalities, planners

and publics in planning and managing their environments?

Municipalities in Upper New York State possess a great deal of potential for innovative problem solving. The Tug Hill Commission and the Local Government Conferences are among the most successful bridging mechanisms that have emerged within Jefferson and St. Lawrence counties. These mechanisms complement the municipal decision-making framework by adding institutional structures and functions, processes and mechanisms with key attributes that are lacking in municipalities. Noteworthy attributes include a rich human resources pool, a participatory and communicative program philosophy and a locally-driven agenda, and an extremely positive outlook.

RECOMMENDATIONS

To the International Joint Commission

The International Joint Commission (IJC) is actively attempting to provide normative policy guidance in relation to an ecosystem approach in the Great Lakes basin. Some success has been achieved because of its recognized role as a scientific advisor, independent observer, and influential mediator between and among Great Lakes stakeholders. But, the Commission must continue to invest in several management domains if the ecosystem approach is ever to catch hold as a municipal planning and management guide. More specifically, *the IJC must formalize its monitoring of program and project success and failure, particularly in the context of the individual RAP programs*. It is only through this “planning window” that problems with ecosystem approach implementation can be analyzed and understood.

The Commission must also continue to champion initiatives associated with its mandate of monitoring progress on the Great Lakes Water Quality Agreement. The development of indicators working groups is one such initiative. An important example is the “Indicators of Societal Responsibility” working group. It addresses institutional “change” at the municipal level, in particular, and change needed to enhance municipal capacity to deal with complex water quality and quantity issues. This initiative has the potential to offer the Commission necessary feed-back. There

does not appear to be another institutional arrangement at any government level doing this monitoring task.

Finally, the Commission needs to be more visible at the rural, municipal level. Jefferson and St. Lawrence counties, as previously indicated, support annual “Local Government Conferences.” Yet, the IJC voice has never been heard in these gatherings. *The IJC must seek out and participate in such fora. The IJC must become its own missionary for an ecosystem approach, and it must develop a municipal partners network. It must be prepared to present the benefits and costs of such an approach in a language meaningful to municipal planners and managers.* The Commission should, for example, more actively seek out the participation of municipal politicians, planners and managers in its own State of the Lakes Ecosystem Conferences.

To the Rural Municipalities in the Great Lakes-St. Lawrence River Basin

The planners and managers of rural municipalities must be allowed to play a variety of professional roles. Perspectives that dominate are those associated with the “developer” and the “regulator,” and the economic argument makes all others subservient. Particularly important would seem to be roles as advocates and facilitators. In this context, municipal Councils must afford professional planners and managers the licence to champion alternative ways and means of developing land and water resources.

The ecosystem approach will not germinate at the municipal level without this liberty. Concomitantly *municipal Councils must be receptive to advice and argument for the re-introduction of “comprehensive land use and resource planning.”* Without the guidance provided by both dedicated and documented policy (municipal plans) and professional planners and managers, neither economic nor the ecological rewards will be effectively and efficiently realized within rural municipalities.

To Partnerships and Institutional Bridging Mechanisms

The rural municipalities of Jefferson and St. Lawrence counties are similar to others in Upper New York State and elsewhere. They have developed individual personalities based on a recipe of

politics, economics and tradition. As discussed earlier, rural municipalities are extremely proud, independent and suspicious of senior government. “Home Rule” elements of the State Constitution reinforce these traits. Public and Private sector partnerships that build trust and understanding among municipalities and competitive politicians need to do more in the realm of environmental planning and management. They need to do more to enhance the capacity of municipalities to make land and resource-use decisions that are sensitive to both the concern for economic development and environmental conservation. In this context, *bridging mechanisms, such as the Tug Hill Commission and the Local Government Conferences, must be more pro-active by:*

- *Developing demonstration projects that reveal the benefits and costs to individual property owners of integrating development and environmental planning and management;*
- *Developing demonstration projects that reveal the benefits and costs to individual municipalities of integrating development and environmental planning and management;*
- *Developing demonstration projects that reveal the benefits and costs to all municipalities of integrating development and environmental planning and management; and*
- *Developing demonstration projects that reveal the benefits and costs of partnerships and Bridging Mechanisms and their transferable procedures and practices.*

Finally the chapter ends with avenues for future research. They are expressed as a set of research questions.

AVENUES FOR FUTURE RESEARCH

What progress has been made in other institutional/environmental contexts to define the ecosystem approach and its components in Normative, Strategic and Operational terms? Case studies focused on the experience of other remedial action plan areas and from municipalities coalescing around watershed planning and management may be fruitful in this regard.

What progress has been made in other institutional/environmental contexts to develop alternatives to the ecosystem approach? Case studies from the Atlantic Canada and the Community Accords initiative, and from the national Model Forests Program may be fruitful in this regard.

What evidence and testimony can be brought forward to support the contention that the ecosystem approach is not the most appropriate resource management approach for rural municipalities? Constructive criticism of the ecosystem approach and its applicability needs to be better analyzed. Perhaps, hybrid or alternative approaches need to be championed for rural municipalities.

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APPENDIX 3.1 - ASSURANCE OF ETHICAL REVIEW AND CONFIDENTIALITY

Hello, my name is David Allen Burhoe. I am a researcher on a project entitled:
**MUNICIPAL CAPACITY TO IMPLEMENT COASTAL ZONE MANAGEMENT
IN THE ST. LAWRENCE RIVER BASIN OF NEW YORK STATE**

This research is part of a Master's Thesis sponsored by the Geography Department of the University of Ottawa.

The project supervisor is Dr. Roger Needham and he can be contacted at this phone number should you have any questions: (613) 562-5800 ext. 1052, or E-mail at rdnad@uottawa.ca.

Thank you for your willingness to participate in this research project. Your participation is very greatly appreciated. Just before starting the interview, I would like to reassure you that as a participant in this project you have several very definite rights.

First, your participation in this interview is entirely voluntary.

- You are free to refuse to answer any question at any time.
- You are free to withdraw from the interview at any time without risk of prejudice.
- The text and tapes of this interview will be available only to the investigator and research supervisor. Tapes will be kept under lock in the office of the research supervisor for five years after completion of the thesis and then erased or destroyed.

Excerpts of this interview may be made part of the final research report, appear in articles and/or a monograph, but, subject to the following conditions, your name or identifying characteristics will not be included in this report.

Conditions of publication:

I, the undersigned, will:

- 1) ☐ accept to be cited but without my name being attached; or
- 2) ☐ accept to be cited, but only if a pseudonym is used; or
- 3) ☐ accept to be cited with my name included.

(Signed)
(Printed)
(Date)

As a respondent, please send me a report on the results of this research project. (Circle one)

YES NO

address for those requesting research report

APPENDIX 3.2

LIST OF INSTITUTIONS AND LAWS APPLYING TO THE ST. LAWRENCE COASTAL ZONE

COASTAL ZONE MANAGEMENT ACT - 1972 led to the creation of the	NYS DOS
GREAT LAKES WATER QUALITY AGREEMENT - 1974 (revised in 1978)	IJC
WATERFRONT REVITALIZATION COASTAL RESOURCES ACT -1981	NYS DOS
NYS COASTAL MANAGEMENT PROGRAM - 1982	NYS DOS
LOCAL GOVERNMENT WATERFRONT REVITAL. PROGRAM	DOS, local
FRESHWATER WETLANDS ACT - in process 1991	NYS DEC
COUNCIL OF GREAT LAKES GOVERNORS	IJC
GREAT LAKES CHARTER -1909	IJC
CLEAN WATER ACT - 1972	US ACE
OIL POLLUTION CONTROL ACT - 1990	NYS DEC, CG
WETLANDS CONSERVATION PLAN - (in process 1991)	NYS DEC
COASTAL EROSION HAZARD AREAS ACT	NYS DEC
CLEAN AIR BOND ACT- 1997	
WATERSHED AND FLOOD PREVENTION ACT	US Min Int
FLOOD CONTROL ACT	US ACE
SOIL AND WATER CONSERVATION ACT	DOA
RIVERS AND HARBOURS ACT	US Min Int
RESOURCE CONSERVATION AND RECOVERY ACT	US DOT
RAP	IJC

AGENCIES WITH JURISDICTION IN THE CZ:

From 1972 until 1995, this coastal zone was managed under a number of state agencies, the Department of Environmental Conservation (DEC), the Department of State (DOS) through a commission called the St. Lawrence-Eastern Ontario Commission (SLEOC), the Department of Agriculture, Department of Forests, Department Of Health (DOH), OPRHP, Office of Goods and Services (OGS), and the Army Corps of Engineers (ACE). Each agency had its own boundaries and economic interest. The SLEOC who was responsible for the coastal zone, for instance, had, as landward boundaries, one Town deep. This is essentially the coastal zone boundaries considered in this study.

There is a plethora or duplicated efforts, inspectors, regulations, and restrictive policies. Thus applicants for variances (or changes in zoning laws) in the coastal zone were required to perform a SEQR EAF, meet deadlines for this, change or modify the project, repeat the process, and so on.

A number of complaints were registered with the Governor: Thus, Task Force Recommendation number 1 was to "revise and update the CMP to reflect demographic, environmental, economic and land and water use trends and priorities, and the conservation and development needs of each coastal region."

The goals of the August 1992 Governor's 25-Year Plan for the Great Lakes were: 1) Formulate a "Shared Vision", 2) Restore the integrity of the waters; 3) Manage water resources; 4) Preserve and improve natural resources; 5) Sustain economic development; 6) Improve intergovernmental relationships.

APPENDIX 3.3

UNIVERSE OF CONTENT FOR CONTENT ANALYSIS (INTERNATIONAL JOINT COMMISSION DOCUMENTS REVIEWED)

-1	-2	-3
		1972-1978 Reauthorization Period
Reviewed but not included in analysis results	1972	GLWQA of 1972
Reviewed but not included in analysis results	1973	First Annual Report: GL Water Quality, July 1973. Est. formation WQB, RAB, dredging committee, a regional office.
Reviewed but not included in analysis results	1974	Second Annual Report: GL Water Quality (Municipal Infrastructure Development U.S., Can.; Industrial Pollution Abatement efforts; Monitoring and Surveillance).
Reviewed but not included in analysis results	1974	The Annual Report of the IJC
Reviewed but not included in analysis results	1975	3rd Annual Report
Reviewed but not included in analysis results	1976	4th Annual report
Document 1	1977	Fifth Annual Report: GL Water Quality (Ecosystem Approach, art. 9)
Reviewed but not cited	1978	Sixth Annual Report: Great Lakes Water Quality
Document 2	1978	Annual Report of the GL Research Advisory Board to the International Joint Commission , Presented July 1978 Windsor, Ontario
Reviewed but not included in analysis results	1978	Amendments to the GLWQA of 1972
Document 3	1978a	Sixth Annual Report: Great Lakes Water Quality
Document 4	1978b	GL Research Advisory Board. The Ecosystem Approach: Scope and Implications of an Ecosystem Approach to Transboundary Problems in the Great Lakes Basin, Special Report to the International Joint Commission. Windsor, Ontario, July 1978
		1979-1982 Reauthorization Period
Document 5	1980a	IJC. Seventh Annual Report: Great Lakes Water Quality.
Document 6	1980b	IJC. 1980. Pollution in the Great Lakes Basin from Land Use Activities.
Document 7	1981	IJC. 1981 Report on Great Lakes Water Quality. Great Lakes Water Quality Board Report to the International Joint Commission. Presented November 1981, Cleveland, Ohio.
Reviewed but not included in analysis results	1982	First Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Reviewed but not included in analysis results	1982	Addendum to First Biennial Report

Document 8	1983	IJC. 1983 Annual Report of Aquatic Ecosystem Objectives Committee of the Great Lakes Science Advisory Board to the International Joint Commission.
		1984-1987 Reorganization Period
Reviewed but not included in analysis results	1984	Second Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Document 9	1985a	IJC. 1985a. Edwards, Clayton J. and R.A. Ryder, (Eds.) A Conceptual Approach for the Application of Biological Indicators of Ecosystem Quality in the Great Lakes Basin. A Joint Effort of the Great Lakes Fishery Commission and the Science Advisory Board of the International Joint Commission. Windsor, Ontario, March 1985, 169 pp.
Document 10	1985b	IJC. 1985b. Annual Report of the Great Lakes Science Advisory Board to the International Joint Commission. Presented June 1985, Kingston, ON
Document 11	1986	Third Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Document 32	1987a	November 1987 Protocol Amending the 1978 GLWQA
Document 12	1987b	IJC. 1987 Report of the Great Lakes Water Quality Board to the International Joint Commission.
Document 13	1987c	IJC. 1987 Report of the Great Lakes Water Quality Board to the International Joint Commission. Appendix A: Progress in Developing Remedial Action Plans for Areas of Concern in the Great Lakes Basin.
Document 14	1987d	IJC. 1987 Report of the Great Lakes Science Advisory Board to the International Joint Commission. Presented November 1987, Toledo, Ohio.
		1988-1989 Reorganization Period
Document 15	1988	Fourth Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Document 16	1989a	IJC. 1989. Living with the Lakes: Challenges and Opportunities, A Progress Report to the International Joint Commission. Submitted by the Project Management Team.
Document 17	1989b	IJC. 1989 Report of the Great Lakes Water Quality Board to the International Joint Commission. Including Appendix A: Progress in Developing Remedial Action Plans for Areas of Concern in the Great Lakes Basin.
Document 18	1990a	Edwards, Clayton J. and Henry A. Regier (Eds.). An Ecosystem Approach to the Integrity of the Great Lakes in Turbulent Times, Proceedings of a 1988 Workshop. Supported by the Great Lakes Fishery Commission and the Science Advisory Board of the International Joint Commission. Ann Arbor, Michigan, July 1990. (Great Lakes Fishery Commission Special Publication 90-4)
Reviewed but not included in analysis results	1990b	Fifth Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Document 19	1991	Council for Great Lakes Research Managers. (July 1991). A Proposed Framework for Developing Indicators of Ecosystem Health for the Great Lakes Region. Report to the International Joint Commission
Document 33	1992	Sixth Biennial Report under the Great Lakes Water Quality Agreement of 1978.
		1993-1997 Reorganization Period
Document 20	1993	Allen and Bandurski: The Ecosystem Approach
Document 21	1994a	Gilbertson: Applying Weight of Evidence: Issues and Practice: A Report on a Workshop

Document 22	1994b	7th Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Document 23	1995a	1993-95 1995-97 Priorities and Programs under the Great Lakes Water Quality Agreement
Document 24	1995b	Practical Steps to Implement an Ecosystem Approach in Great Lakes Management
Document 31	1996a	Indicators to Evaluate Progress under the Great Lakes Water Quality Agreement
Document 25	1996b	8th Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Document 26	1997a	The IJC and the 21st Century
Document 27	1997b	1995-97 1995-97 Priorities and Programs under the Great Lakes Water Quality Agreement
Document 28	1997c	Water Quality Agreement 25 Years
Reviewed but not included in analysis results	1997d	Report from the Great Lakes Water Quality Forum, Windsor, ON.
Document 29	1998a	9th Biennial Report July 1998.
Document 30	1998b	IJC. 1998c. Review of Government Resources and Changing Program Thrusts as they relate to delivery of programs under the Great Lakes Water Quality Agreement. Great Lakes Water Quality Board
Reviewed but not included in analysis results	1999	Report from the Great Lakes Water Quality Forum, Milwaukee, Wisc.
Reviewed but not included in analysis results	2000a	1997-99 Priorities and Programs under the Great Lakes Water Quality Agreement
Reviewed but not included in analysis results	2000b	10th Biennial Report July 2000.

(1) The "File" column differentiates between IJC documents examined for mention of an ecosystem approach and those actually subjected to a full content analysis because they contained explicit or implicit reference to elements of the ecosystem approach (Documents 1 - 33);

(2) The "Date" column reveals the date of publication by the IJC and also in which reauthorization period it was produced;

(3) The "Document" column identifies the title and author of the document.

APPENDIX 3-4

UNIVERSE OF CONTENT FOR CONTENT ANALYSIS GUIDING DOCUMENTS OF ST. LAWRENCE and JEFFERSON COUNTIES COASTAL ZONE, NYS

(1) File	(2) Date	(3) Document
		1972-1978 Reauthorization Period
Document nys 1	1970	Louisville, Town of. Summary Master Plan, Vol. 6, June 1970. Prepared by Russell Bailey & Assoc., Ithaca under HUD & Comprehensive Planning Assistance Program, Section 701 of the HUD Act of 1954. No. NY P-15GL.
		Amendments to the GLWQA of 1972
Document nys 2	June, 1978	St. Lawrence County Planning Board. St. Lawrence County Comprehensive Land Use Plan. St. Lawrence County Planning Board, Potsdam, NY. Financed in part under Section 701 of the Federal Housing Act of 1954, HUD.
Document nys 3	1982 and 1986	NYS Department of State. Final Environmental Impact Statement and the New York Coastal Management Program. Albany, New York: New York Department of State. Washington, D.C. : Office of Coastal Zone Management, National Oceanic and Atmospheric Administration.
Document nys 4	June 25, 1987.	Ogdensburg, City of. 1986. Local Waterfront Revitalization Plan (LWRP) accepted by City of Ogdensburg City Council, Sept. 8, 1986. 4 ayes, 2 nays (Councillors McKee & Baltradis). Approved by Sec. of State Shaffer, Mar 27, 1987 & by the US Office of Ocean & Coastal Resource Management
Document nys 5	1987	NYS Department of State. 1987. Local Government Handbook, Ed. IV. New York State Department of State, Albany, New York. Sec. of State Gail S. Shaffer.
		1988-1992 Reauthorization Period
Document nys 6	March 1988	NYSDEC. 1988. Coastal Erosion Management Regulations, 6 NYCRR Part 505 as amended March 1988. Statutory Authority: Environmental Conservation Law Article 34.
Document nys 7	Dec 16, 1988	Waddington, Town of. Town of Waddington LWRP Consistency Law. enacted under authority of the Section 10 of the Municipal Home Rule Law and the waterfront Revitalization and Coastal resources Act of the State of New York (Article 42 of the Executive Law).
Document nys 8	1989	NYS Department of State. The New York Coast, 'Your Coast, Your Choice, Your Future', Proceedings of Five regional Conferences. Albany: Division of Coastal Resources and Waterfront Revitalization, Department of State.
Document nys 9	Dec. 1, 1989	Fort Drum Steering Council. Final Report Local Government and Management Study. By William R. Dodge, Strategic Planning Consulting.
Document nys 10	1989	Massena. General Code Publishers Corp. Zoning Chapter 85 from the Code of the Town of Massena, County of St. Lawrence, NYS. Rochester, NY. 3-14-1990 as L.L. No. 1-1990.
Document nys 11	1990	NOAA. Amendments to Coastal Zone Management Act of 1990. A Summary. Coastal Zone Information Center, Office of Ocean and Coastal Resource Management.

Document nys 12	November 1990.	NYS, Department of Environmental Conservation. St. Lawrence River at Massena Remedial Action Plan. Stage I
Document nys 13	1992	NYS, Department of Environmental Conservation. St. Lawrence River at Massena Remedial Action Plan. Stage II
Document nys 14	1990	NYS Department of State. Land Resource Preservation. Local Government Technical Series. Governor Cuomo & Sec. of State Gail S. Shaffer.
Document nys 15	July, 1991	Alexandria Bay , Village of. Master Plan with the assistance of Jefferson County Planning Department.
Document nys 16	1990s	St. Lawrence County Water Quality Advisory Committee. "St. Lawrence County Water Quality Strategy." Prepared by St. Lawrence County Water Quality Advisory Committee.
Document nys 17	Nov., 1991	NYS Department of State. 1991. Interim Report of the Governor's Blue Ribbon Commission on Consolidation of Local Governments. Sec. of State Gail S. Shaffer. New York State DOS, Albany, New York.
Document nys 18	1991	NYS Department of State. 1991. Now and for the Future - A Vision for New York's Coast. Recommendations of the Governor's Task Force on Coastal Resources. Albany: Office of the Lieutenant Governor, State of New York.
Document nys 19	1991	United States Department of Commerce. 1991. Final Evaluation Findings: New York State Coastal Management Program from July 1987 through November 1990. Washington, D.C. : National Oceanic and Atmospheric Administration., National Ocean Service, Office of Ocean and Coastal Resource Management,
Document nys 20	January 10- 11, 1991	White Papers for A Community Planning and Land Use Retreat held at The Government Law Center, Albany Law School by The NYS Legislative Commission on Rural Resources. Senator Cook, Chairman.
Document nys 21	1992	NYS Department of State. "New York's Coastal Program: A Report. Your Coast, Your Choice, Your Future". Governor's Task Force on Coastal Resources. New York State Department of State, Albany, New York. Sec. of State Gail S. Shaffer.
		1993-1997 Rules and Regulations
Document nys 22	Dec. 12, 1994	Study Document for A St. Lawrence County Public Policy Guide .
Document nys 23	1995	St. Lawrence County Environmental Management Council. Draft Environment and Natural Resources Section of St. Lawrence County Policy Guide. St. Lawrence County Environmental Management Council, Courthouse, 48 Court Street, Canton, NY
Document nys 24	1995	Massena , Town of. Subdivision and Land Use Zoning, Chapters 77 and 85 from the Code of the Town of Massena. Last amended May 10, 1995 by L.L. No. 3, 1995. General Code Publishers Corporation, 72 Hinchey Road, Rochester, NY 14624.
Document nys 25	February 27, 1991. Updated 1995	Ogdensburg , City of. 1991. Zoning, Chapter 221. From the Code of the City of Ogdensburg. Superseded by Amendments made in ORD #4, 1994. Includes waterfront conservancy district, Article X, and environmental quality review, Article XIV of State Environmental Quality Review Act (SEQR). Article 8 and Part 617 of Title 6 of the New York Code of Rules and Regulations (NYCRR) as adopted City Hall, 330 Ford St., Office of Planning and Development, Martin Murphy, Director. .
Document nys 26	September, 1996	NYS Department of State. Zoning Board of Appeals. James A. Coon Local Government Land Use Technical Series. Governor Pataki & Sec. of State Alexander F. Treadwell
Document nys 27	September, 1996	NYS Department of State. Guide to Planning and Zoning Laws of New York State. James A. Coon Local Government Technical Series. Governor Pataki & Sec. of State Alexander F. Treadwell
Document nys 28	May 1996	Tug Hill Commission. Adopting and Amending Zoning by Local Law. Local Government Topics, Technical Assistance Service.

Document nys 29	Nov. 1997	NYS Department of Environmental Conservation. Conserving Open Space in New York State 1997. Draft State Open Space Conservation Plan and Draft Generic Environmental Impact Statement. The Office of Parks, Recreation and Historic Preservation.
		1998-2000 Reauthorization Period
Document nys 30	June, 1998	NYS Department of State. . Adopting Zoning for the First Time: James A. Coon Local Government Land Use Technical Series. Governor Pataki & Sec. of State Alexander F. Treadwell
Document nys 31	September, 1999	NYS Department of State. . Guide to Planning and Zoning Laws of New York State. James A. Coon Local Government Technical Series. Governor Pataki & Sec. of State Alexander F. Treadwell

- (1) The "File" column identifies documents pertaining to the St. Lawrence River coastal zone of NYS examined for explicit or implicit reference to elements of the ecosystem approach (Documents 1 - 33);
- (2) The "Date" column reveals the date of publication by the responsible agency and also in which reauthorization period it was produced;
- (3) The "Document" column identifies the title and author of the document.

APPENDIX 3.5

LONG INTERVIEW RESPONDENTS ADDRESSES ST. LAWRENCE AND JEFFERSON COUNTIES, NYS

(1) No.	(2) Respondent	(3) Date	(4) Contact Address
	International Joint Commission (IJC)		Ottawa, ON
1	Mr. Geoffrey Thornburn Annex 2 Advisory Committee International Joint Commission Canadian Section	May 20, 1999 Aug., 1999	100 Metcalfe Street, 18th Floor Ottawa, Ontario K1P 5M1 Phone: (613) 995-0433 FAX: (613) 993-5583 E-mail: thornburng@ottawa.ijc.org
	Jefferson County Planning Department		
2	Mr. Bruce Armstrong Director of Planning	April 9, 1998	Jefferson County Department of Planning 175 Arsenal Street Watertown, NY 13601 Phone (315) 785-3144 Fax (315) 785-5092
3	Mr. Dan Cantrell Assistant Director of Planning	Sept., 1999	Jefferson County Department of Planning 175 Arsenal Street Watertown, NY 13601 Phone (315) 785-3144 Fax (315) 785-5092
4	Mr. Mike Bourcy Community Development Coordinator	April 9, 1998; Sept., 1999	Jefferson County Department of Planning 175 Arsenal Street Watertown, NY 13601 Phone (315) 785-3144 Fax (315) 785-5092 e_mail: planl@mailrelay.sunyjefferson.edu
	City of Watertown Planning Department		Watertown, NY
5	Ms. Patricia Falton Planner	August, 1999	City of Watertown Planning Department Room 302, Municipal Building 245 Washington Street Watertown, NY 13601 Phone (315) 785-7730 Fax (315) 782-9014
	Cooperative Tug Hill Commission (THC)		Watertown, NY
6	Mr. Robert (Bob) Quinn Executive Director	Sept 14, 1999	Dulles State Office Building 317 Washington Street Watertown, NY 13601-3782 Phone (315) 785-2380/2570 Fax (315) 785-2574 E-mail: bob@tughill.org
7	Mr. Phil Street, Planner, THC	August, 1999	" "
8	Ms. Jean Watenbury, Planner, THC	August, 1999	" "
	Cooperative Tug Hill Commission		Watertown, NY

Oct 5, 1999	Monthly Staff Meeting with Circuit Riders	Oct 5, 1999	
9	Phil Street, Planner, THC	Oct 5, 1999	" "
10	Ms. Jane Z. Jones Coordinator Cooperative Tug Hill Council	Oct 5, 1999	P.O. Box 12 Redfield, New York 13437 Phone (315) 599-7724
11	Mr. Paul Baxter Municipal Management Consultant North Shore Council of Governments Salmon River Local Government Services Cooperative	Oct 5, 1999	30 Birch Lane West Munroe, NY 13167 Phone: (315) 668-8945 E-mail: PaulBaxter@aol.com
12	Mr. Stephen Hunter Local Government Advisor North Oneida County Council of Governments	Oct 5, 1999	10408 Hinman Road Holland Patent, NY 13354 Phone (315) 865-4475 E-mail: hunnr@borg.com
	NYS Department of State, Coastal Resources Division		
13	Mr. Tom Cutter Coastal Resources Specialist	Sept 14, 1999	Department of State Division of Coastal Resources Dulles State Office Building 317 Washington Street Watertown, NY 13601 Phone (315) 785-2443 Fax (315) 785-2574 E-mail: tcutter@dos.state.ny.us
14	Mr. Jeffrey Beach Coastal Resources Specialist	Dec 15, 1999	Department of State Division of Coastal Resources 41 State Street Albany, NY 12231-0001 Phone (518) 473-2472 Fax (518) 473-2464 E-mail: jbeach@dos.state.ny.us
	Development Authority of the North Country (DANC)		Watertown, NY
15	Mr. Thomas R. Sauter Director of Project Development	Sept 14, 1999	Dulles State Office Building 317 Washington Street Watertown, NY 13601 Phone (315) 785-2593 Fax (315) 785-2591
	Local Government Conference, Participant Observation	Sept. 22, 1998	Maxcy Hall, SUNY Potsdam, NY
	Local Government Conference, Participant Observation	April , 1999	Jefferson College Watertown, NY
	Local Government Conference, Participant Observation	Sept. 29, 1999	SUNY Potsdam, NY
	Local Government Conference, Participant Observation	Oct. 3, 2000	SUNY Potsdam, NY

	St. Lawrence County Planning Department		Canton, NY
16	Mr. Richard E. Mooers Director	Oct. 19, 1999	St. Lawrence County Planning Office Courthouse 48 Court St. Canton, NY 13617 Phone (315) 379-2292/2281 Fax: (315) 379-2252
17	Mr. Keith Zimmerman Deputy Director	Oct 19, 1999	St. Lawrence County Planning Office Courthouse 48 Court St. Canton, NY 13617 Phone (315) 379-2292/2281 Fax: (315) 379-2252
18	Mr. Jason Pfotenhauer Planner II	Oct 19, 1999	St. Lawrence County Planning Office Courthouse 48 Court St. Canton, NY 13617 Phone (315) 379-2292/2281 Fax: (315) 379-2252 E-mail: jpfotenhauer@co.st-lawrence.ny.us
19	Mr. Jon Montan Planner I	Apr. , 2001	St. Lawrence County Planning Office Courthouse 48 Court St. Canton, NY 13617 Phone (315) 379-2292/2281 Fax: (315) 379-2252 E-mail: slcplan@northnet.org
	Merwin Rural Services Institute (MRSI) SUNY		Potsdam, NY
20	Dr. Ram L. Chugh Director MRSI SUNY Distinguished Service Professor	Oct 19, 1999	Economics Department State University of New York College at Potsdam Potsdam, NY 13676-2294 Phone (315) 267-2397 Fax: (315) 267-3151 E-mail: chughrl@potsdam.edu
	City of Ogdensburg		Ogdensburg, NY
21	Mr. Martin Murphy, AICP Director of Planning and Development	Dec 10, 1999	City Hall 330 Ford Street Ogdensburg, NY 13669 Phone (315) 393-7150 Fax: (315) 393-1136 E-mail: mmurphy@ogdensburg.org
	21st Century Project		
22	Ms. Ruth-Ellen Blodgett Executive Director North Jefferson Health Services, Inc.	April 9, 1998	800 Starbuck Ave., Suite 322 Watertown, NY 13601 Phone (315) 779-8469 Fax: (315) 779-8472
	NYS Department of Environmental Conservation (DEC)		
23	Dr. Jay Bloomfield Chief: Lake Services Citizens Statewide Lake Assessment Programs and Other Volunteer Monitoring Management Plans	Dec 15, 1999	Albany, NY

	New York Planning Federation (NYPF)		
24	Mr. David Church, AICP Executive Director New York Planning Federation	Dec 15, 1999	44 Central Ave., 2nd Floor Albany, NY 12206-3002 Phone (518) 432-4094 Fax: (518) 427-8625 E-mail: nypf@wizvax.net
	League of Women Voters		
25	Ms. Mildred Whalen	April, 1999	brief phone int.
	Environmental Services Division St. Regis Mohawk Tribe		St. Regis Indian Reservation, NY
	Mowhawks (Mr. Ken Jock, Mr. Francis Jock)	April, 1999	protocol delayed possibility
	Massena Planning Board		Massena, NY
	Mr. Ron Johnson, Chair, Town of Massena PB Director of Planning and Development	Oct 3, 2000	declined politely

- (1) The "No." column is an interview identifier, but is not a chronological ordering of interviews.
- (2) The "Respondent" column identifies the interview respondent and his/her title.
- (3) The "Date" column identifies date interview or interviews were held.
- (4) The "Location" column signifies interview location.

APPENDIX 4.1

CONTENT ANALYSIS RESULTS DEFINITIONS ECOLOGICAL COMPONENTS

	Document 1 - no definition
1978	Annual Report of the GL Research Advisory Board to the International Joint Commission , Presented July 1978 Windsor, Ontario
Doc 2 p.20	The ecosystem approach proposed by the Board is based on a man-in-a-system concept rather than on the system-external-to-man concept inherent in the 1972 GLWQA. Incorporation of this approach within the advisory and management functions of the Commission and Parties, respectively, necessitates political recognition of the interacting elements of water, air, land and living organisms, including man, within the Basin.
20	It further necessitates explicit recognition of exchange of materials such as atmospheric pollutants into and out of the Basin, in biospheric perspective.
20	It (ecosystem approach) relates the biological and technological activities of man to the carrying capacity of the Ecosystem, linking the human body to the biosphere... This necessary integrative framework is an ecosystem approach.
19	"the 'ecosystem approach' may have significant benefits for the long-term management of the GL, by placing it in a wider context and providing a framework for assessing the real impact and significance of changes within the GL system." Fifth Annual Report on GL Water Quality
	Document 3 - no definition
1978	GL Research Advisory Board. The Ecosystem Approach: Scope and Implications of an Ecosystem Approach to Transboundary Problems in the Great Lakes Basin, Special Report to the International Joint Commission. Windsor, Ontario, July 1978
Doc 4 p.vii	- the "necessary integrative framework for the linking" of Implementation and Administrative Components 2 *the 1909 BWT; the GLWQA; new environmental legislation; dialogue on mutual benefits to water quality and fishery programs of GL surveillance; research linking environmental quality to human health; implications of land-use activities to other parts of the GL Basin Ecosystem.
3	- "the examination of the Basin as an Ecosystem, simultaneously relating events within the the Ecosystem to those surrounding areas in biospheric perspective."
15	- "improved attitudes, perceptions and behaviour will not automatically result from adoption of an ecosystem approach in the Basin" - "the primary significance of the concepts of "ecosystem" and "biosphere" is "that they provide the essential condition permitting such changes to come about.. and remove the aggravation of concepts like "water quality" and "environment" that imply "man-out."
17	- "the profound difference between the present <i>modus operandi</i> of the Parties and the Commission..." which "approach is man-centered and reductionist" while the EA is "Ecosystem-centered and holistic."
28	- "utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment."
	Document 5 - no definition
1980	IJC. 1980. Pollution in the Great Lakes Basin from Land Use Activities.
Doc 6 p-52	An ecosystem approach to environmental management means recognition of the unity and the complexity of interconnections within the ecological system of which man is a major component.
52	of components of the overall strategy.. as a planning and management framework.. in descending order of generality are: An Ecosystem Viewpoint is the need for a comprehensive, basin-wide perspective.

53	it is important that, to the extent possible, all probable impacts of actions are assessed. This approach should be applied to actions capable of causing major social or environmental change so that informed and rational decisions can be made and, if necessary, approached with caution.
53	While it has become clear that such an approach is required for major development or resource management decisions, it applies also to the area of nonpoint pollution and control strategies.
1981	IJC. 1981 Report on Great Lakes Water Quality. Great Lakes Water Quality Board Report to the International Joint Commission. Presented November 1981, Cleveland, Ohio.
Doc7 p-1	The ecosystem concept is frequently a misused and misunderstood phrase.
1	Simply stated, it is a way of thinking which broadens man's understanding of how he and his environment interact.
1	It is not a finite object, program, or activity.
	Document 8 - no definition
1985 a	IJC. 1985a. Edwards, Clayton J. and R.A. Ryder, (Eds.) A Conceptual Approach for the Application of Biological Indicators of Ecosystem Quality in the Great Lakes Basin. A Joint Effort of the Great Lakes Fishery Commission and the Science Advisory Board of the International Joint Commission.
Doc 9 p-144	Appendix II- Glossary of Terms - Ecosystem Approach: One of the many holistic, interdisciplinary, top-down methods of treating ecosystems as "black boxes". Emphasis is placed on specific output properties as related to quantifiable inputs without the need for detailing all component parts of the system nor all the intervening pathways. Modern ecosystem approaches regard man as an integral part of the system.
4	the ecosystem approach was described as "based on a man-in-system concept rather than on the system-external-to-man concept inherent in the 1972 GLWQA" (RAB 1978).
4	Finally, an ecosystem approach was defined as "the view of the Great Lakes Basin as an ecosystem, in biospheric perspective; encompassing all interactions within this ecosystem and transport of materials in and out via air as well as waters, by migratory species and by international transport."
12	In order to best utilize biological indicators as a methodology within the context of the ecosystem approach concept (RAB 1978), it is most appropriate to avoid undue dissection of the system in favor of a holistic application dealing primarily with system emergent properties.
1985 b	IJC. 1985b. Annual Report of the Great Lakes Science Advisory Board to the International Joint Commission. Presented June 1985, Kingston, ON
Doc 10-25	Adoption of an "ecosystem approach" for dealing with Great Lakes water quality and related issues requires a more "holistic" systems perspective to guide research and management.
10b- 25	successful implementation of any ecosystem plan will depend upon some form of consensus management, because no single agency or institution has either the responsibility or the authority for the whole ecosystem.
1986	Third Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Doc 11 p2	The ecosystem approach, which recognizes that the various parts of the natural and human systems are all linked together and must be understood in concert, has helped us begin to trace the various linkages involved in the toxics issue, conceptually and in practice*.
	Documents 12, 13 - no definition
1987 d	IJC. 1987 Report of the Great Lakes Science Advisory Board to the International Joint Commission. Presented November 1987, Toledo, Ohio.
Doc 14a p.1	At its meeting in Nov. 1986, the Board examined obstacles to implementing an ecosystems approach under the 1978 Water Quality Agreement. The major conclusions: While there is a growing consensus on the need for an ecosystems approach, there is a major communication problem between the various publics and even among institutional groups with respect to a common understanding of what constitutes an ecosystems approach.

1	The public needs some agreement on this definition before it can be expected to support broad policy decisions affecting all levels of society. There is a lack of comprehension of the ecosystem concept, a lack of ecological perspective, and differences of opinion among professional communities regarding the implications of an ecosystem approach.
1	Integrity implies wholeness (integer), the creation of an original whole (integrate), and systemic behaviour (integrity).
1	Ecosystem implies an ecological system, the concepts and methods of general systems theory and a focus on organizational, particularly self-organizational, phenomena. In this Report, the Board describes courses that aim to clarify the practical, operational meaning of these terms.
8	The process of developing remedial action plans may in fact constitute a first and necessary step in implementing an ecosystems approach.
	Document 15 - no definition
1989 a	IJC. 1989. Living with the Lakes: Challenges and Opportunities , A Progress Report to the International Joint Commission. Submitted by the Project Management Team.
Doc 16a p.9	It is argued in this study that the Great Lakes-St. Lawrence River Basin is an ecosystem , which has to be approached as a functional whole, recognizing its high diversity, its interconnectedness and interdependence, its high rates of change and the need for integration of conflicting forces. Only recognition of these factors will allow for effective public policy.
47	The term "ecosystem" itself establishes a context whereby value-driven tradeoffs between human and natural systems are brought into focus. Its use assumes the continued existence of a measure of equilibrium among the parts of the system and a concern for the overall welfare rather than the predominant welfare of any one part.
47	"Ecosystem integrity" not only emphasizes the wholeness of the system, but also introduces a further dimension of wholesomeness and inviolability.
47	Terms such as "ecosystem" and "environmental integrity"..., along with assertions related to inter-generational equity and joint trusteeship of the ecosystem, create a conceptual base for future government action.
9	The approach taken here is often called a systems approach... There are four characteristics of a Systems Approach: 1) Wholeness; 2) Interconnectedness; 3) Complexity and Irreducibility; and 4) Synergy.
9	In adopting a systems approach to this study, the Commission echoes a need expressed in many previous studies for what has been called an "ecosystem approach".
47	Studies have identified as many as 650 government units and 1300 organizations.. Effective ecosystem management will have to relate to and integrate this present diversity of approach. Indeed, the very concept of an ecosystem approach to the water levels issue of the Great Lakes-St. Lawrence River Basin has to take into account the historic governing traditions of the nation state, for which all government activity in North America has been designed.
1989 b	IJC. 1989 Report of the Great Lakes Water Quality Board to the International Joint Commission. Including Appendix A: Progress in Developing Remedial Action Plans for Areas of Concern in the Great Lakes Basin.
Doc 17- p.xiii	The multimedia approach is important in ecosystem management; for example, to adequately address the issue of contained sediments, contaminant sources for land runoff, airborne deposition, groundwater, and point sources that must be controlled.
50	Fisheries, waterfowl and botanical interests which transcend regional or national institutions need to be considered, consistent with an ecosystem management approach.
62	The evolution of RAPs toward integrated resource management is positive and consistent with the ecosystem approach.
1990	Edwards, Clayton J. and Henry A. Regier, (Eds.). 1990. An Ecosystem Approach to the Integrity of the Great Lakes in Turbulent Times , Proceedings of a 1988 Workshop. Supported by the Great Lakes Fishery Commission and the Science Advisory Board of the International Joint Commission.
Doc 18- p.5	With the 1972 Amendments...we have.. a water pollution control law that takes a holistic view of the aquatic ecosystem... the objective is the restoration and maintenance of ecological integrity, not the perpetuation of someone's notion of best use.

6	the 1972 Act contains a basic philosophical shift in water management from one of standards (technological approach) to one of integrity (ecological approach).
18	Ecosystemic practices apply where "the ecosystem involves both the cultural and natural attributes of a region."
18	Our interest is in the preservation of the biota including man. The biota is dependent on the physics and the chemistry of the environment and affects both. In this case, all is one and one is all. A dissection is inappropriate.
19	Use of the term integrity in the.. 1972 and 1978 GLWQAs was intended to relate primarily to the interactions between the cultural and the natural. Integrity ..should be apparent within the cultural subsystem, the natural subsystem, and the whole basin ecosystem.
20	In the ecosystem approach, "man is an integral, if dominant, part of the structure and function of the biosphere."
173	"Integrity" in the broadest sense refers to wholeness, diversity, or degree of connectedness within a biotic community and can be viewed as an emerging property of ecosystems, one that is clearly within the mandate of the IJC/WQB.
1991	Council for Great Lakes Research Managers. (July 1991). A Proposed Framework for Developing Indicators of Ecosystem Health for the Great Lakes Region. Report to the International Joint Commission
Doc 19a-p.5	- the Ecosystem Approach mandates the development of ecosystem as well as chemical-specific objectives, the former being clearly stated ecosystem conditions, primarily biological, that are to be attained and maintained under the revised Agreement (1978 GLWQA).
5	- as the "ecosystem approach" to management merges with the concept of sustainable development,... it is clear that a critical step towards addressing the emerging goal of sustainable development will be the adoption of a broad view of the concept of "man-within-the-system".
	- the 1978 GLWQA, however, addressed the limitations of the sole reliance on chemical-specific objectives.. and emphasized a broader "ecosystem approach".. Which recognizes the interrelatedness of biotic and abiotic ecosystem components, including humans, and the relationship between the lakes and their surrounding watershed.
1993	Allen and Bandurski: The Ecosystem Approach
Doc 20-23	- the ecosystem approach is a process that keeps identifying problems of various sorts and puts pressure on them so as to improve the situation.
4	- the Ecosystem Approach "insists upon rigorous definitions of ecosystems". - it also "demands unambiguous linking of various ecosystem conceptions of different types and sizes, all explicitly defined"
5	- there is not one ecosystem to address, but rather we choose an operational ecosystem for the question at hand.. In the ecosystem approach, the effort is to achieve appropriately expansive questions so that the system becomes defined to be particularly inclusive.
14	- "only orchestrated sets of different points of view can capture its richness adequately," thus public involvement is part of the agenda of the ecosystem approach.
41	- it embodies an ethic of self-conscious reflection that we, as individuals behave responsibly as members of society that plays a proper role in the biosphere.
29	- a willingness to accept different types of system, each with its own purpose...
4041	- it emphasizes breadth of vision... the breadth of vision recommended by the ecosystem approach tends to lead to a contextual approach to problem-solving.
35	- it must be systematic
39	- it must be comprehensive
10 & 41	- requires a flexibility of thought and action that is absent in the hard science, discipline-restricted approach to problem solving that has prevailed before now. - richness of definition means the EA must be flexible enough to define the ecosystem operationally, to change type and scale of the ecosystem as new problems arise

20L-4	management of the lakes should evolve in response to a growth in understanding of the factors that influence the quality of the environment within the Great Lakes Basin" and that it should "determine the quality of the waters that unify the ecosystem and define its boundaries.
	Document 21 - no definition
1994	7th Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Doc 22-p.35	As with the Remedial Action Plans and other Agreement initiatives, the Commission believes that meaningful participation by all interests throughout the process is essential to achieving a comprehensive ecosystem approach...
45	Ecosystemic approaches to research and decision-making must be premised on including the entire system of relevant interrelationships in the analysis, at least initially.
17	modern economies and lifestyles, raise the need for a very basic reassessment of our production, consumption and investment processes. This review also requires a deliberate analysis of, and consensus on how to restructure economic activity and decision-making from something that has been largely isolated from environmental realities to one that embraces a new relationship between economic activity and the rest of the ecosystem.
17	sustainable development... is based on a concept of nesting economic and environmental decisions within the joint pursuit of long-term economic, environmental and social sustainability. Essentially, it too is an ecosystemic approach.
45	Traditionally, economists and ecologists have not taken account of the essential linkages between their models. Limitations in natural resources have not been factored into classical economic analysis, and ecologists have generally ignored the role of human activities in the functioning of ecological systems. As a result, economic policy and environmental policy are separated by an enormous gulf. Ecosystemic approaches, and the newer concept of sustainable development, require a merging of these areas of discourse.
48	adequate understanding of their interface and how to merge data across the biophysical and socio-economic data sets. This is needed to measure progress through integrative approaches such as sustainable development and the ecosystem approach. Only through that integration can governments and others sufficiently understand the Great Lakes Basin Ecosystem.
52	Senior government officials allow Remedial Action Plans to be community led rather than dominated by regulatory agencies. To be successful, RAPs must integrate the efforts of all agencies, stakeholders and concerned community members towards restoration of beneficial uses within a comprehensive ecosystem approach.
1995	Priorities and Progress 1993-95
23a	Toward the GLWQA goal of pollution prevention, the ecosystem approach can also be perceived as a strategy for the "Industrial ecosystem", where practical steps can be taken at the different scales in that "ecosystem": Macroscale or large-scale ecosystems (ex. looking at Lifecycle redesign; Flows of materials in regions and countries, and relationship with the biosphere); the Mesoscale: looking at Redesigning processes, facilities and their operation; and the Microscale: looking at product development and benign molecular pathways (green chemistry).
1995	Practical Steps to Implement an Ecosystem Approach in Great Lakes Management
Doc 24a-p.4	An ecosystem approach is a process framework endorsed by many researchers, planners, and managers to account for the interrelationships among land, air, water, and all living things, including humans, and to involve all user groups in comprehensive management.
5	an ecosystem approach is a tool to help comprehensively and systematically address root causes of environmental problems.
11	The ecosystem approach is used in decision-making to account for system-level effects from the interactions of all ecosystem components (e.g. nutrients, primary production, forage fish, predatory fish, habitat, chemical contaminants, climate, and human use)
4	An ecosystem-based process framework is based on adaptive planning and management that recognizes the uncertainties and imperfect knowledge of the interrelationships and interdependencies of economy, society, and environment.

10	An ecosystem approach can be symbolized as a circle with three equal compartments representing social, economic, and environmental interests (Hartig et. al. 1989). Dashed lines between the segments show that the inner circle (an ecosystem) and its parts are open to exchange of information, energy, and matter with neighboring areas. The outer circle, representing the biosphere (i.e. the relatively narrow band around the earth within which life is possible), is closed. The operating principle of an ecosystem approach is that no segment of the circle can be sacrificed and all are essential to maintain a functional and sustainable ecosystem.
	The basic intent of ecosystem-based management is similar to place-based and watershed management. What comprehensive watershed planning and management and ecosystem-based management are trying to accomplish is to comprehensively address contaminant (e.g. point and nonpoint sources), physical (e.g. flow augmentation, streambank stabilization), and biological (e.g. stocking/harvesting, food web manipulation) management alternatives that will achieve locally- established, ecosystem goals and objectives
11	The essence of an ecosystem approach is that it relates people to ecosystems that contain them, rather than to environments with which they interact. Stated another way, an ecosystem approach views social, economic, and environmental issues within the context of nature and relates political systems to larger ecological systems that contain them, rather than as interacting entities among themselves
11	Criteria developed to assess when a set of measures constitutes an ecosystem approach include: a focus on integrated knowledge; a perspective that relates systems at different levels of integration; and actions that are ecological, anticipatory, and ethical in respect to nature
12	Ecosystemic approach to 12 perceived problems (Vallentyne et al 1987) 1- Transmission of disease - Preventive, rehabilitative 2- Organic waste - Energy recovery 3- Eutrophication - Nutrient recycling 4- Acid rain - Recycle sulfur 5- Energy shortages - Inverted rate schedules 6- Toxic chemicals - Design with nature 7- Greenhouse effect - Carbon recycling 8- Pests - Integrated pest management 9- Traffic congestion - Public transportation 10- Demotechnic growth - Conserver society 11-Attitude to nature - Respect 12-View of future - Emergent, evolving
1996	8th Biennial Report under the Great Lakes Water Quality Agreement of 1978.
Doc 25a-p.24	Canada and the United States presented a draft strategy in August 1995 at a Stakeholders Workshop in Windsor, Ontario... The emphasis on partnerships and specific products involving state, provincial and local governments as well as other basin stakeholders, helps to ensure ecosystem thinking and improvements.
26	We encourage the Governments to include broader representation from interest groups outside of government including labour, business and nongovernment organizations, in future.. reports... The resulting report serves as one basis for the Commission, the public and governments to assess progress in the ecosystem.
1997	IJC and the 21st Century
Doc p.1	Environmental degradation and resource scarcity are the underside of globalization. They are threats to human security that respect no boundaries. Faced with this kind of threat, the old approaches will not be sufficient. And finding new approaches will not be easy or non-controversial. (Lloyd Axworthy, Cdn Govt., 1997) All other IJC boards with responsibilities in the Great Lakes region, including the control boards, the International Air Quality Advisory Board and the Health Professionals Task Force, would be directed to adopt an ecosystem approach and to cooperate and work together to the maximum extent possible within their mandates (p.33).
1	of the Commission's recommendations.. perhaps most important of all, the implementation of an ecosystem approach to stewardship of the resource, have contributed much to the joint mission of Great Lakes restoration.
13	Among the Continuing Activities of IJC Control and Pollution Boards (1997), the IJC's contributions have been particularly critical in promoting an ecosystem approach to one of the world's most sensitive and critical ecosystems, the Great Lakes.
1997	Priorities and Progress 1995-97
Doc 27-p.27	the Hamilton Harbour RAP has taken a watershed approach.

1997	WQA 25 Years
Doc 28-p.?	The 1978 GLWQA is unique for its inclusion of the ecosystem concept. The Great Lakes Basin Ecosystem is defined in the Agreement as "the interacting components of air, land, water, and living organisms, including man, within the drainage basin"
28b-9	The ecosystem perspective broadens the understanding of how humans and the environment interact. It provides both a philosophical framework and a scientific rationale for the notion that "everything in the basin is related to and affects, to some degree, everything else in the basin". It recognizes that no one factor was responsible for systemic ecological decline in the region, and that existing problems cannot be addressed within strict jurisdictional, geographic or disciplinary boundaries.
	Documents 29 - no definition
1998	IJC. 1998c. Review of Government Resources and Changing Program Thrusts as they relate to delivery of programs under the Great Lakes Water Quality Agreement. Great Lakes Water Quality Board
P.1	12 documents have been cited that describe IJC programs or reports within the Great Lakes involving an Ecosystem Approach.
1996	Indicators to Evaluate Progress under the Great Lakes Water Quality Agreement
16	Ecosystemic approaches deal with space-time (spatiotemporal) relationships.
17	The Task Force utilized methods consistent with a systematic, ecosystemic approach to analysis..: the methods of community ecology, landscape ecology, process-function ecology and population ecology.. in developing suites of indicators.. comprehensive in scope. Each is useful in linking existing environmental-related data to policy and management needs.
16	a comprehensive ecosystemic approach addresses a set of consciously chosen indicators that reveal a full set pf representative characteristics of that system's parts, as well as the emergent properties of that system as a whole.
16	An ecosystem approach consists of eight essentials: 1. acknowledgement that ecosystems are life/environs systems couched in.. different observational "criteria" as landscape, community, organism, process-function and population... 2. Recognition that each type of ecology.. identifies ecosystems entailing many spatiotemporal scales of structures and processes... 3. A cohesive intellectual framework for applied ecology... which must be made known to stakeholders in the planning process... 4. Use of ecological boundaries.. to define.. planning, assessment and management units. 5. Systematic investigation of pertinent ecosystem types, using systems analysis... 6. Comprehensive characterization of the kinds of relationships that are essential to ensure the integrity of the system's parts... 7. Use of adaptive management strategies, based on feedback/feedforward from new information... 8. Enfranchising interested and/or affected entities (stakeholders in the widest sense) to the degree possible in planning and decisionmaking which affect the subject ecosystem.
	Document 32 - GLWQA 1987 - no definition
	Document 33 - no definition

APPENDIX 4.2

EXTRACT OF CITATIONS FROM CONTENT ANALYSIS ON COMPONENTS OF AN ECOSYSTEM APPROACH

Table a: Content Analysis Results THE ECOSYSTEM APPROACH AND ITS COMPONENTS		
IJC Document - sample extracted from a number of IJC documents analyzed		
Theme: Ecological Components	Page Policy type	Citation
1 Definition (What is it?)	1997c : 9	The ecosystem perspective broadens the understanding of how humans and the environment interact. It provides both a philosophical framework and a scientific rationale for the notion that "everything in the basin is related to and affects, to some degree, everything else in the basin". It recognizes that no one factor was responsible for systemic ecological decline in the region, and that existing problems cannot be addressed within strict jurisdictional, geographic or disciplinary boundaries.
	1994b : 45	Ecosystemic approaches to research and decision-making must be premised on including the entire system of relevant interrelationships in the analysis, at least initially.
2 Ecological Principles and Relations	1994a : 26	- precautionary inference in (the field of causal linkages between the environment and health) relies on a holistic evaluation of an integrated body of evidence from laboratory experiments, wildlife studies and epidemiological investigations.
	1994b : 21	if a community-based ecosystem approach is to become a reality, our children must develop the knowledge, values and instincts to understand the inescapable links between environmental and human health in all its forms...
	1997b : 64	While not precisely defined, integrity is generally understood to include health of constituent populations of the ecosystem, biological diversity of ecological communities, and the ecosystem's ability to withstand stress or adapt to it.
3 Ecological Variables	1994b : 3	an ecosystemic approach to achieving the Agreement's objectives... requires attention to many complex and dynamic components that must be understood and incorporated into an effective plan to achieve the objectives of the Agreement. These interrelated components include the atmosphere, the surrounding land, a wide variety of biological species and their interrelationships and, of course, human activities.
	1997b : 26	Progress in some RAPs may be constrained by "highly variable sources (e.g. sewage treatment plant effluents, combined sewer overflows), by continuing population growth within the RAP areas..." and by lack of knowledge of status of present and historic sources of persistent toxic substances.
4 Ecological Stresses and Problems	1997c : 2	An initial action was to define the airshed of the boundary ... Pollutants entering the Great Lakes from the air are of particular concern and constitute part of the ecosystem approach espoused in the Great Lakes Water Quality Agreement.
	20	Persistent toxic substances such as DDT and metabolites, dieldrin, PCBs, dibenzo-p-dioxins and dibenzofurans are both embryotoxic and structural and functional teratogens.

		1994: 8	The characteristics of persistent toxic substances make them much less amenable to traditional pollution control efforts such as discharge limits to set acceptable levels in the environment, end-of-the-pipe technology and disposal regulations. The idea of a non-zero "assimilative" capacity in the environment or in our bodies (and hence allowable discharges) for such chemicals is no longer relevant. The Great Lakes Water Quality Board supports this view, concluding that there is no acceptable assimilative capacity for persistent, bioaccumulative toxic substances. It states, therefore, that the only appropriate water quality objective is zero, even though interim objectives may be needed... The production and release of these substances into the environment must, therefore, be considered contrary to the Agreement legally, unsupportable ecologically and dangerous to health generally. Above all, they are ethically and morally unacceptable.
5	Boundaries	1986: 3	The water resources of the basin transcend political boundaries within the basin, and should be recognized and treated as a single hydrological system. In managing the GL basin waters, the natural resources and ecosystem of the basin should be considered as a unified whole
		1978: 20	...the ecosystem approach takes account of transboundary injury to health or property mediated by vehicles other than water, such as the atmosphere or introduced species.
		1997b : 33	Basin governance must overcome the incongruency between geo-political and hydrologic boundaries -- a formidable challenge in an expansive, binational setting where the magnitude and complexity of the physical ecosystem is rivalled by that of the institutional ecosystem.
		1997b : 29	The Hamilton Harbour RAP used a watershed approach... The Detroit River RAP has defined a scope based on political, rather than watershed boundaries. As a result, broader ecosystem, including foodweb, impacts resulting from local air emissions and cumulative effects may be overlooked or underestimated. This may limit the utility of the "ecosystem approach" as envisaged under Annex 2 of the Agreement
6	Ecosystem - economy linkages	1994a : 36	I am concerned that the economists are not developing the science of economics to deal with environmental issues, or if they have, it is not widely used... in preparing a risk-benefit or a benefit-cost analysis (as a regulator), the environment always ends up looking as though it has no value.
		1994b : 17	modern economies and lifestyles, raise the need for a very basic reassessment of our production, consumption and investment processes. This review also requires a deliberate analysis of, and consensus on how to restructure economic activity and decision-making from something that has been largely isolated from environmental realities to one that embraces a new relationship between economic activity and the rest of the ecosystem.
		1994b : 45	Traditionally, economists and ecologists have not taken account of the essential linkages between their models. Limitations in natural resources have not been factored into classical economic analysis, and ecologists have generally ignored the role of human activities in the functioning of ecological systems. As a result, economic policy and environmental policy are separated by an enormous gulf. Ecosystemic approaches, and the newer concept of sustainable development, require a merging of these areas of discourse.
		1997b : 10	Ecological Economics as an Emerging Issue The SAB recommends: The Parties commission a study, using the methods of ecological economics, to evaluate the practical value of utilizing the ecological economics approach

7	Stakeholders and their Perspectives	1997b : 1	Recognizing the need to secure the views and opinions of basin stakeholders, IJC also engages in a variety of public consultation activities. The information received from this broad-based consultation contributes significantly to the insight, advice and recommendations that IJC provides to governments through its biennial reports.
		1996a : 14	Since the GL ecosystem can be conceived and perceived from a variety of perspectives, it is not just one ecosystem. There is no generic "Great Lakes ecosystem." ..It is imperative that the ways of conceiving and perceiving the GL ecosystem be clearly understood and communicated. Otherwise, stakeholders may misconstrue the type and scale of the system under consideration.
		1997b : 29	A positive, trust-based relationship was evident in Hamilton among government agencies, university researchers, members of the general public and other interested stakeholders. This relationship appears to be central to the development of consensus about the importance of individual sources and the urgency of remedial measures.
8	Relationship to Watershed Approach and other Conceptual Constraints (Evolutionary)	1994b : 17	sustainable development... is based on a concept of nesting economic and environmental decisions within the joint pursuit of long-term economic, environmental and social sustainability. Essentially, it too is an ecosystemic approach.
		1994b : 21	For more than two decades, the Agreement and the ecosystem approach have served as international models. Aspects of the Agreement have been recognized as a model in discussions in several United Nations fora.. The designation clearly demonstrates the links between the Agreement and sustainable development frameworks.
		1995: 15	Participants recommended the following overall goal to help ensure land-use planning encompasses an ecosystem approach: "to streamline and better coordinate land-use planning decisions, from plan development to plan approval, relevant to watershed issues on a watershed basis."
9	Constructive Criticism	1994a	further workshops on weight of evidence definitions require that industry be present or results will be virtually worthless.
		1985b : 25	A major weakness of past strategies that the ecosystem approach attempts to rectify is to incorporate socio-economic considerations into all appropriate activities.
		1988: 47	The recognition of the need for an ecosystem approach.. indicates the realization that narrow analyses, without considering their overall context and the variety of linkages within the ecosystem, will no longer be adequate.
Theme: Implementation and Administration Components (Doing the Work)			
1	Implementation Framework or Guide (How is it done?) "recipe"	1997b : 66	...some impairments in Areas of Concern like fish consumption advisories cannot be solved by RAPs alone and will require whole lake action through LaMPs); and such a meeting/forum would serve as a good mechanism to celebrate successes and measure incremental progress (using a common set of indicators) consistent with practical application of an ecosystem approach and watershed management.
		1994b : 18	the basic Agreement provides a sound and comprehensive framework to address the problems of the Great Lakes ecosystem. The focus of attention should be on implementation of what the Governments of Canada and the United States have already agreed on, rather than on new undertakings. This conclusion remains valid, even in the face of new knowledge and understanding about the dynamics of the Great Lakes Basin Ecosystem...

		1994b : 39	Chapter seven: Remedial Action Plans: Ecosystem Approaches in Action The Commission has... strongly encouraged and supported the RAP process throughout the basin, especially encouraging a broadened understanding of what it means to "embody a systematic and comprehensive ecosystem approach" as required by the Agreement, the need to forge links to other local planning processes, and the value of meaningful public involvement.
		1989: 50	there are regional institutions and organizations (within the GL) set up as multi-jurisdictional management structures. These are largely confined to co-ordination, research, planning, monitoring, surveillance, advisory and recommendatory functions.
2	Governance	1989: 40	In this study, we refer to the patchwork of decision-making activities by governments and other entities as the "governance" of the Basin.
		1978: 21	The GLRAB recommends.. 1. that the Parties and the Commission explicitly recognize as policy the need for an ecosystem approach to problem identification, research and management in the GL Basin; and 3. that the Parties, the State and Provincial Governments, the Commission, and the people of the Great Lakes Basin demonstrate by example their ability to apply the ecosystem approach to one or more transboundary problems of common and current concern...
		1989: 44	Two much older values of governing, which do not seem to have declined in importance even though concern for the environment has grown,... are the furtherance of the economic well-being of the people and the preservation of national sovereignty... These values underlie the policies governing day-to-day decisions of government. (IJC 1989: 47) ...the very independence of the bodies making decisions allows for varying interpretations of vulnerability and, of course, political pressures can bring about unplanned development even in the face of regulations.
		1994b : 50	The Great Lakes Water Quality Agreement wisely sets out a rigorous standard for behaviour: the protection of the integrity of the waters of the Great Lakes Basin Ecosystem, which includes important links to human activities and well-being. Governments must ask whether we can afford to take the risk of not exercising sufficient caution.
3	Jurisdictional Powers and Responsibilities - Municipal - State/Provincial - Federal - International "allocation", rationalization"	1997c : 8	Under the terms of the Great Lakes Water Quality Agreement, the two federal Governments are expected to implement programs and report on their progress in restoring, preserving, and protecting the Great Lakes. The International Joint Commission (IJC) has been charged with reviewing and evaluating these programs and progress. In Canada, Environment Canada leads delivery on the Agreement, while the U.S. Environmental Protection Agency spearheads the United States efforts. Both work in partnership with provincial, state, and municipal governments. Canadian federal-provincial commitments are coordinated through the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem.
		1994b : 37	The role of the federal governments in these connecting channel RAPs has been minor and should be increased. An increased federal involvement may provide opportunities for more joint activities and breaking down the interjurisdictional barriers to an ecosystemic approach. Specifically, federal agencies should lead in the development and conduct of binational monitoring programs to track restoration of impaired uses in each connecting channel.
4	Coordination	1997c : 9	The 1978 Agreement was amended [1987] by Protocol to incorporate new concepts of ecosystem-based management ... for greater coordination among various jurisdictions in developing remedial measures through the use of RAPs for the most polluted areas of the lakes (AOCs) and through LaMPs.
		1980b : 60	Potential coordinating agencies also exist at the local level... however, reliance on local jurisdictions for environmental policy development and regulatory control has generally resulted in uneven application of environmental standards of behaviour, with effective controls or even consideration of ultimate environmental consequences being the exception rather than the rule.

		1978b : 32	it is essential that the Commission "demonstrate its ability in coordinating the ecosystem approach for the Basin as a whole."
5	Co-operation	1980b : 59	While a high degree of coordination is important, it will also be necessary to instill the need for active cooperation between agencies, and for the understanding and recognition of conflicting needs. The issuing of formal policy statements to this end does not always result in their implementation at the field level.
		1989b : 110	Another important finding was that the spirit of mutual cooperation was critical to arriving at a decision that was better than what either industry or government would/could have done alone.
		20: 35	- the Parties, in cooperation with State and Provincial Governments, shall ensure that the public is consulted in all actions undertaken pursuant to this Annex (1978).
6	Communication	1994b : 25	Organizations whose mission is to inform and activate the general public should strive to broaden their membership and audience, by improving their media and public affairs approaches and the coordination among organizations to ensure consistent, accurate messages.
		1980a : 65	(though) support for an extensive environmental mapping effort.. is not unanimous... around competing priorities for the limited research and operating funds in the agencies concerned., the Commission still believes that such a program would be valuable tool in producing an understanding of the dynamics and flexibility of the GL System to incorporate many uses within constraints, and in communication between scientists, resource managers, elected officials and the general public.
7	Economic Costs "translation"	1994a : 5	Economically and practically, it is far easier to regulate contaminants at the source of production, than to react after their release into the ecosystem. We should not wait for damage to occur and then try to fix the situation. Instead we should use appropriate strategies to prevent the damage from occurring in the first place... I think that ethical issues are too often subservient to legal and economic issues. To protect human health we need to consider what is ethical rather than what is legal or least expensive.
		1994a : 20	three years of intensive study -- and the costs -- approaching \$3 million -- which are necessary to do a thorough job, just at one site. Plus the fact that there is a continuing monitoring effort at the site. However, these costs are modest in comparison to capital costs associated with further mill process changes, or the social and economic costs associated with a possible mill closure were it based on assumptions that the discharges were dangerous or causing environmental impacts.
8	Institutional and Other Perspectives "Control, Transparency"	1994a : 5	In environmental decisionmaking, it is preferable to have lots of data, but in the end we have to use experience... Contrary to present administrative practice, in environmental decisionmaking it would be preferable to take action aimed at protecting or restoring a resource based on an erroneous causal relationship than to delay the decision for one or two decades and thereby risk losing the entire resource.
		1991: 5	The potential for conflicting goals associated with each of these aspects of sustainability demands that, from a management perspective, the goals be considered together.
		1994b : 53	No efforts of governments to virtually eliminate the discharge of persistent toxic substances, and few of the Remedial Action Plans to remediate Areas of Concern, will succeed without the full participation of business and industry.
9	Constructive Criticism	1993: 37	"without a procedure and a framework for considering policy-relevance and system-wide impacts, the ecosystem approach becomes an unfocussed assessment criterion or a shroud for research practices to continue under the guise of ecosystem relevance"

		21st Cen: 25	Fragmentation of jurisdictions exacerbates the problems resulting from down-sizing, devolution and deregulation.
		1994b : 5	New networks and structures to manage and coordinate efforts among the various jurisdictions, primarily under the institutional umbrella of the International Joint Commission, have been created. Since the 1987 Protocol, however, these activities have come under bilateral rather than Commission auspices and have somewhat diminished in intensity.
Theme: Facilitating Processes and Mechanisms Components (Capacity Building)			
1	Public Education and Human Resource Development	8th Bien: 29	"Capacity building" was identified in Agenda 21, a product of the 1992 United Nations Conference on Environment and Development, as an essential element of sustainable development. Efforts to share success stories among Area of Concern groups to this end should be encouraged, and we urge the jurisdictions to support progress to restore Areas of Concern in this and other ways
		1995: 4	the need for multi-media, comprehensive, environmental management increases, greater emphasis is being placed on cooperative approaches to management which stress incentives and education.
		1995: 4	Proponents of this shift from a command-and-control, regulatory approach to a cooperative, ecosystem-based approach argue that, although regulatory activities are still important, education and incentives are now more important in achieving further reductions in loadings and improvements in the environment.
2	Multiple Perspectives "Capture, Pluralism" (Public Participation, Advisory Committees, etc.)	1997c : 3	the International Joint Commission is responsible for evaluating progress. Central to the Commission's evaluation is the advice and insight provided by the public. Ongoing consultation occurs in a variety of ways and for the current biennial cycle, will culminate in a Great Lakes Water Quality Agreement Public Forum.
		1989: 49	This recognition of public involvement in matters related to the management of natural resources will increasingly become the basis for future decision-making.
		1989: 42	There are approx. 7M acres of federally-recognized reserve lands in the Great Lakes-St. Lawrence River Basin System... in a way of life that is informed both by a marginal relationship with the industrial, urban society of the Basin and a traditional relationship with the natural system... and are more concerned about water quality and balance in the ecosystem. They feel that there should be a Native Peoples representative on any taskforce dealing with lake levels.
		1997c : 4	The (GL) Forum permits Canada and the United States to report on programs and progress in fulfillment of their Agreement obligations. In an effort to enhance public awareness and encourage feedback, the Commission's WQB, SAB, International Air Quality Advisory Board, and CGLRM will also present issues that they believe are of interest. The public will be encouraged to express their views on Agreement progress. The advice received through expanded consultation will provide a broad basis for the Commission's 9th Biennial Report to Governments
3	Technical Support and Enrichment	1995a : 6	The Pollution Prevention Act has elements that are near universal throughout the U.S. and Canada, namely a call for: iv) performance of outreach and facilitation of the adoption of source reduction techniques by the private sector through various support mechanisms, including technical assistance (guidance documents, workshops and other training devices), information clearinghouses, and grant programs;
		1980b : 61	The rationale for.. the selective approach .. -since technical and financial resources will likely be inadequate to solve all problems simultaneously, there is a need to establish priorities...

		1995c : 25	Greater use of economic and technical assistance incentives will also be needed.
4	Information Sharing "Freedom of Information"	1996a : 16	Information collection, analysis and interpretation are linked to environmental decisionmaking processes at several levels. For instance, information generation and use is driven by the statutory and regulatory framework (e.g. policy goals).
		1996a : 69	(To be effective and relevant to decisionmakers, there is a need to) circulate workshop results to participants and other key players to.. arrange a meeting involving these key players to get their input.
		1996a : 44	The Commission's evaluation of Agreement progress depends on the timely receipt of accurate, consistent and pertinent information.
5	Monitoring and Assessment "Feedback" "Evaluation"	1997c : 4	Under the Canada-United States Great Lakes Water Quality Agreement, the International Joint Commission is required to monitor and assess progress made pursuant to the Great Lakes Water Quality Agreement, in particular the adequacy of actions by the two federal governments, the province of Ontario, and the eight Great Lakes states. The Commission fulfills this responsibility in part by reporting every two years.
		1997c : 6	[RAPs must include] a description of surveillance and monitoring processes to track the effectiveness of remedial measures and the eventual confirmation of the restoration of uses
		1998a : 13	A commitment must be made to compatible, long-term monitoring, which is crucial for assuring that data are available to identify, characterize and quantify not only emission sources but also deposition loadings and loading trends. This information will gauge the effectiveness of and response to source controls.
		1998a : 20	Surveillance and monitoring provide information about the status of the Great Lakes environment and progress toward achieving the Agreement's purpose. It is the basic tool that informs decision-making. These programs provide data and information that identify problems, describe the present status of the Great Lakes basin ecosystem and track progress to restore and protect beneficial uses. Surveillance and monitoring provide the evidence of success or failure of a completed cleanup effort.
6	Continuous Research	1997b : 85	all successful RAPs have strong research programs as part of the foundation for implementing locally-designed ecosystem approaches for restoring beneficial uses. Indeed, research for RAPs has proven to save money while achieving positive ecosystem results
		1998b : 46	Research has helped to identify the deterioration of ecosystem integrity, and science has helped us improve some aspects of the Great Lakes.
		1998b : 46	.. politicians respond to public demand, but the public and some government decision makers generally do not understand the value of research. Simply put, scientific study helps us properly manage current problems and respond to new concerns. With ongoing cuts to research funding, the gap between what our scientific community can afford to research and the information many of us require to assess, repair and protect the ecosystem is widening.
		1998b : 46	Having had experience with Great Lakes management and clean up initiatives, my bias is toward applied research that will assist in strengthening management decisions. This is a sampling of subject areas for which, I believe, the citizens of the Great Lakes basin should demand more research and action.
7	Voluntarism (Labour)	1997c : 2	RAPs focus on the 43 (now 42) geographic Areas of Concern, take an ecosystem approach, and draw upon broad local community involvement.

		1994b : 25	The voluntary sector is a key component in broadening Agreement awareness and involvement. This sector needs to be encouraged within the Great Lakes institutional mosaic. The voluntary sector is a key component in broadening Agreement awareness and involvement. This sector needs to be encouraged within the Great Lakes institutional mosaic, but the organizations and movements involved, while enthusiastic, are often stymied by lack of scientific data and interpretive skills. The Commission's Great Lakes Science Advisory Board has emphasized that empowerment, participation and involvement of the entire Great Lakes community in the achievement of the goals of the Agreement is vital to its success.
8	Voluntarism (Action/Behaviour)	1998b : 37	The last decade has experienced.. multiple developments.. greater demands and roles expected of local governments, increased emphasis on voluntary compliance and less-prescriptive means, fiscal constraints, downsizing, local community empowerment and watershed-based institution building.
		1998c : 4	support from local governments, RAP groups, and other organizations which would have an impact on certain indicators. Such partnerships with outside organizations are a good example of capacity building and may offset any funding reductions at the state/provincial/federal level that may have occurred. In fact, such partnerships may indeed increase overall resources. It should also be recognized that resource reductions may reflect more efficient or streamlined practices and, in some cases, resource reductions have been the catalyst for innovative approaches and partnerships.
9	NGO Involvement	1999 Forum	To me, the Commission is the conscience of the governments with respect to their obligation under the Great Lakes Water Quality Agreement. You, the public and the members of the non-governmental organizations, are the keepers of that conscience. Especially, the eloquent manifestation of your role as keepers of the conscience is your presence here and the concern expressed by that presence.
		1994b : 24	Several governmental institutions have evolved to address Great Lakes ecosystem issues. This phenomenon has included a refocusing of the Great Lakes Commission, the Great Lakes Fishery Commission and the Council of Great Lakes Governors. A number of nongovernmental and municipal organizations also have involved interested citizens and specific interests. These citizens and organizations tend to begin at a nontechnical level, but become increasingly more sophisticated in knowledge and approach. A wide range of organizations fit this description, such as Great Lakes United, the Council of Great Lakes Industries and the International Great Lakes-St. Lawrence Mayors' Conference, to name only a few examples.
		1998a : 40	The formation of environmental non-governmental organizations (ENGOS) has led to a shift in responsibility whereby the latter assumed from governments the advocacy role for environmental protection. In the present context of governments embarked in a "3-D" process, ENGOS have become more important than ever. Yet, even though the public still holds the environment as a major concern, support for ENGOS has been wavering.
		1996b : 29	The successful Areas of Concern initiatives are those with strong local institutional structures and government support to drive broad and meaningful public participation, implementation and monitoring, and to demand accountability for progress. Also needed are mechanisms to secure financial commitments. One option is the development of local, nonprofit organizations to focus action plans, funding strategies, public participation and political support. Excellent examples exist of innovative ways to develop this capacity in the Great Lakes basin. These include the experience of the Waterfront Regeneration Trust -- whose mandate was originally focused on the Toronto region and now spreads across much of the Canadian shore of Lake Ontario -- and the development of a nonprofit foundation in Astabula, Ohio.

10	Constructive Criticism	1998b : 47	The notorious chemicals, such as PCBs, DDT and other pesticides, mercury and others, cannot be controlled by local actions alone
		1998b : 19	The Commission perceives a continuing gap between the research undertaken by the scientific community and the information required by decision-makers to strengthen and underpin actions to evaluate, restore and maintain the Great Lakes. In addition, scientists are often not connected to the regulatory, policy and jurisdictional arenas.
		1998b : 6	The "3 D" approach transfers environmental stewardship to those closer to local issues but without transferring the accountability. Furthermore, local authorities are not parties to the Agreement and therefore bear no obligation to fulfill its purpose. Moreover, the resource pie to be shared is smaller, adversely affecting the ability to monitor and clean up. The "3-D" approach also results in the loss of the broader perspective required to understand issues and meet goals, objectives and requirements on a basin-wide or international scale.

APPENDIX 6.1

PERSPECTIVES AND ATTITUDES OF PUBLIC ON FEDERAL AND STATE COASTAL MANAGEMENT SUPPORT IN NYS

desire for private and municipal control	desire for federal/state support
- State assistance for water supply systems is not needed. - COMMUNITIES ARE CAPABLE OF SOLVING THEIR OWN PROBLEMS." - Home rule is important in land use management. How are the land use proposals in the Plan to be reconciled with this? - State interference in land use policies for flood hazard areas is not needed. Flooding and erosion are dealt with in the Coastal Erosion Hazard Act - Enhanced wetland protection will place an undue financial and regulatory burden on farmers." - The focus of state agencies should not be on the generation of new laws but on finding ways to improve technical and financial assistance to local governments. No new laws should be created except as needed to coordinate with other states and provinces. No new bureaucracy should be created, the program should be administered by each affected municipality. - Five regional conferences in NYS's 25-Year Plan demonstrated that many towns, such as Kendall, Carleton and Yates found themselves frustrated and unprepared for the flood of tourism creating development pressures with no approved local plans, no technical assistance, no guidance, and no increased staff while they had already submitted proposals for funding under the Local Waterfront Revitalization Program - There was concern from local governments that plans for regionalizing the CMP would weaken the current state-local coastal program by leading to the establishment of regional coastal agencies, thus adding another government layer. - overwhelming suggestion that LWRPs be kept voluntary with increased incentives for LWRP preparation - some comments suggested (public) access recommendations were an infringement on private property rights, and concerns about liability.	- COORDINATION WITH OTHER GREAT LAKES STATES AND PROVINCES IS IMPORTANT. NEW YORK COULD SUFFER ECONOMIC DISADVANTAGE IF WE GO IT ALONE ON MANY ISSUES. - State and federal authorities should work with local governments rather than simply directing actions. - New York should provide leadership to other Great Lakes states on Great Lakes issues. - Is Ontario doing anything like the 25-Year Plan? This will affect the success of many of New York's efforts. - New York needs to take a leadership role and set examples in such forums as the Council of Great Lakes Governors, EPA, the Clean Water Act, the Great Lakes Water Quality Initiative and the IJC water levels study. - Outreach and technical assistance are needed. - The donation of property through conservation easements should be encouraged in order to increase protection of high quality wetlands. - Carrying capacity may be a very difficult concept for local officials to deal with . - The real issue is the effects of development. - The workbook seems to skirt issues of land development, urban runoff, and erosion which have significant impacts on water quality. - Zoning is the key to all land use management. DEC's power in these areas is limited. - The state must consider the impacts of regulations and requirements on local governments. - Planning for the Great Lakes was done 25 years ago and nothing happened. The State should have the authority to implement the plan so that everything is handled under one jurisdiction., creating financial disincentives for non-participating LWRP communities. - The Plan needs a major effort at prioritizing actions and more selectiveness in deciding what is important.

Source: 1990-91, the Governor's Task Force on Coastal Resources conducted regional conferences to determine the public's vision for its 25-Year Plan. The above table identifies a select number of comments recorded.