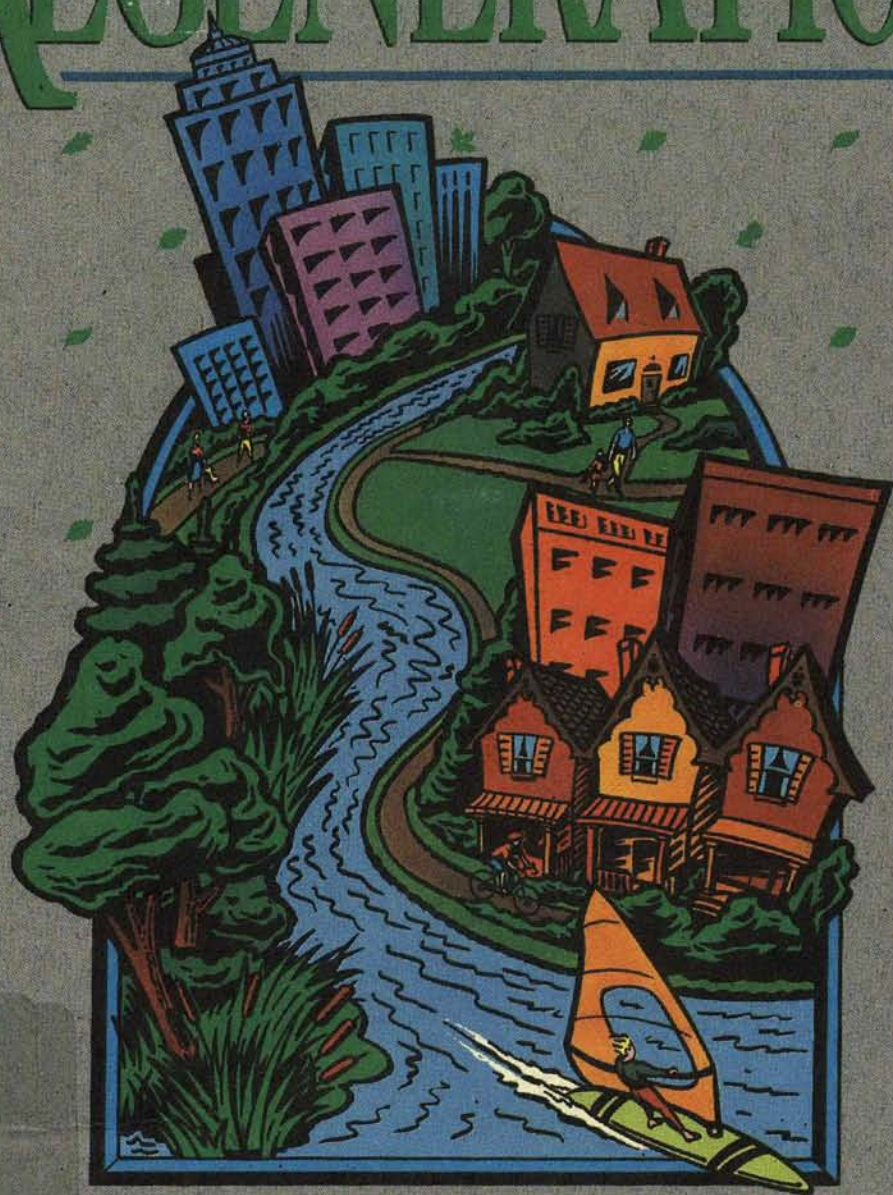




Royal Commission on the Future
of the Toronto Waterfront

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**TORONTO'S WATERFRONT AND
THE SUSTAINABLE CITY: FINAL REPORT**



CANADA



Ontario

**HONOURABLE
DAVID CROMBIE
COMMISSIONER
TORONTO, CANADA**



**Royal Commission on the Future
of the Toronto Waterfront**

Regeneration: Toronto's waterfront and the sustainable city: final report

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Royal Commission on the
Future of the
Toronto Waterfront



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l'avenir du
secteur riverain de Toronto

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Executive Director and Counsel
Ronald L. Doering

Commissaire
L'honorable David Crombie, c.p.

Directeur exécutif et Conseiller juridique
Ronald L. Doering

TO HIS EXCELLENCY
THE GOVERNOR GENERAL IN COUNCIL

MAY IT PLEASE YOUR EXCELLENCY

By Order in Council PC - 1988 - 589 dated March 30, 1988, I was appointed Commissioner to inquire into and make recommendations regarding the future of the Toronto Waterfront. I now beg to submit the attached Report.

Respectfully submitted.

David Crombie
Commissioner

December 1991

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Toronto Waterfront



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Commissaire
L'honorable David Crombie, c.p.

Directeur exécutif et Conseiller juridique
Ronald L. Doering

TO HIS HONOUR,
THE LIEUTENANT-GOVERNOR OF
THE PROVINCE OF ONTARIO

MAY IT PLEASE YOUR HONOUR:-

By Order in Council O.C. 2465/89, dated the 12th day of October, 1989, I was duly appointed a Commissioner under the *Public Inquiries Act*. I am pleased to present to you the attached Report of the Royal Commission on the Future of the Toronto Waterfront.

Respectfully submitted.

David Crombie
Commissioner

December 1991

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CONTENTS

Preface	xix
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Introduction: The Work of the Royal Commission on the Future of the Toronto Waterfront	1
The First Phase	1
The Second Phase	8
The Third Phase	14
The Final Report	16

Part I: Planning for Sustainability

1. The Ecosystem Approach	19
A Region Under Stress	19
Ecosystems	31
Initiatives	49
Principles for Regenerating the Waterfront	56
Summary	60
2. Planning Practice	63
Context	63
The Nature of the Problem	65
Towards Ecosystem Planning Practice	76
A Suggested Framework for Ecosystem-Based Planning	81

Part II: Environmental Imperatives

3. Water	97
The State of the Lakes	99
Why Is Progress Stalled?	114
The Metro Toronto Remedial Action Plan	130
Action on the Great Lakes	138
4. Shoreline	149
History of Shoreline Modification..	150
A Bird's Eye View of the Shore Today	152
Significance of Shoreline Modification	155
Shoreline Regeneration Issues	156
How Has Shoreline Modification Caused Problems?	166
Why Should We Be Concerned?	169
What is the Problem?	169
What Can Be Done?	169
Desirable Characteristics of a Shoreline Regeneration Plan	170
Implementing The Plan	171
5. Greenways	177
The Benefits of Greenways	181
Implementing Greenway Plans	192

The Provincial Role in Creating Greenways.....	202	11. Scarborough.....	415
The Role of the Federal Government.....	205	<i>Watershed</i> Update.....	421
6. Winter Waterfront.....	207	Planning Initiatives.....	422
Enhancing Winter Waterfront Use.....	207	12. Durham.....	427
Opportunities for Maximizing Year-round Use.....	217	The Region.....	430
Steps to Winterization.....	222	Town of Pickering.....	433
Healing an Urban Watershed: The Story of the Don.....	225	Town of Ajax.....	435
Part III: Places		Town of Whitby.....	439
7. Halton.....	265	City of Oshawa.....	441
<i>Watershed</i> Update.....	269	Town of Newcastle.....	443
Towards a Green Net.....	270	Greenways.....	446
Waterfront Planning Policies.....	272	East of Durham.....	448
Planning Initiatives.....	274	Town of Port Hope.....	448
8. Mississauga.....	277	Town of Cobourg.....	452
<i>Watershed</i> Update.....	281	Part IV: Regeneration and Recovery.....	455
Waterfront Planning Policies.....	282	Epilogue.....	470
Waterfront Greenway and Trail.....	285	Appendices	
Planning Initiatives.....	286	Appendix I: Orders in Council.....	473
9. Etobicoke.....	289	Appendix II: Annotated Bibliography of Royal Commission Publications.....	483
<i>Watershed</i> Update.....	292	Appendix III: Watersheds.....	489
Waterfront Greenway and Trail.....	293	Appendix IV: Illustration Credits....	495
Waterfront Planning Policies.....	294	Selected Bibliography.....	505
10. The Central Waterfront.....	303	Index.....	515
<i>Watershed</i> Update.....	306		
Place and Corridor.....	318		
Humber Bay.....	339		
Garrison Common.....	350		
Toronto Bay.....	363		
Lower Don Lands.....	385		



PREFACE

AN ECOSYSTEM APPROACH TO THE REGENERATION OF CITIES

The city should be regarded as a natural ecosystem, requiring an integrated approach for addressing its problems.

Half the world's peoples will live in urban areas by the end of this decade. Whether we achieve a greater degree of environmental sustainability over that time will therefore be determined largely by our cities. Surely, sustainability is not possible in the long term unless we can soon find ways to regenerate our urban ecosystems, keep them in good health, and adopt more sustainable urban lifestyles.

*But the environmental challenges facing cities receive relatively little attention — as any review of the literature on sustainable development quickly makes clear. Even the United Nations World Commission on Environment and Development (the Brundtland Commission) devoted little to the analysis of what it called the urban challenges. As Michael Hough said in his book **City Form and Natural Process** (1989), "In a world*

increasingly concerned with the problems of a deteriorating environment, be they energy, pollution, vanishing plants, animals or productive landscapes, there is a marked propensity to bypass the environment most people live in — the city itself".

The City as Pestilence

Why do most environmental commentators engage in so little analysis of our urban ecosystems? Perhaps one reason is that many environmentalists continue to see cities as unnatural — or worse. Recently, for example, Canadian geneticist David Suzuki, a widely read analyst of social and environmental issues, offered his perspective on cities around the world:

We can't eradicate cities. Nor would we want to. But we must recognize that cities disconnect us from nature and each other. They exist by draining resources from the planet while spreading toxic materials and debris. And if we regard all living things on earth as an immense supra-organism (which some have called Gaia), then cities must be seen as the Gaian equivalent of cancer (1991).

Dr. Suzuki's view of cities, however harsh, plays to a familiar bias in North American

literature. Cities, in the accepted view, are not good things. ("Pestilential to our future," said Thomas Jefferson.) Bad things happen there. The countryside is a good thing. Good things happen there. "Nature" is at home in the countryside but not in the city, and God is clearly more knowable in the wide-open spaces than on city streets.

City bashing, therefore, is an easy occupation, but it makes the regeneration and renaissance of cities much more difficult for those who, like Lewis Mumford, see the city as a place where "the separate beams of life" are brought together and "the issues of civilization are brought into focus" — a place where ancient connections, origins, and identities merge with overwhelming events that suggest new opportunities, new dreams, and new questions.

The City as Beacon

It has not been all one-sided, though clearly the bashers have had their way. In a valiant brigade, city lovers such as Jane Jacobs, William H. Whyte, Ian McHarg, Tony Hiss, and others have struggled to frame a more positive view of the city, and have offered both philosophical perspectives and practical steps for a more hopeful future.

They are supported, of course, by the millions upon millions of ordinary people who over the centuries have chosen to leave the countryside in order to live in the city. Why do they come? Why have cities grown and grown? Why do people, if they have the choice, decide to live in the "pestilence" and "cancer" of the city?

Cities are desirable and important because they continue to be beacons of hope and freedom to each new generation. Travel on any continent and you will see young people taking the road to town, drawn by the magnetism of cities. Cities are places where fame, fortune, and the future seem ripe for the picking. They are places where you can try to be what you want to be — and where, if you're lucky, you will find a sense of

community that will serve your needs, shape your day-to-day experiences, give focus to your freedom and meaning to your hopes. For these reasons, as the Alberta Environment Council (1988) put it in its publication **Environment by Design**, cities continue to be "the habitat of choice for most people."

The City as Natural Phenomenon

But like us, a city is not separate from nature. Within cities we have vegetation, forests, fields, streams, lakes, rivers, terrain, soils, and wildlife. Hydrology, topography, and climate set the fundamental structure for human habitation and the building of the city itself. As Kevin Lynch (1981) wrote in **A Theory of Good City Form**, "People and their cities are as much natural phenomena as trees, streams, nests, and deer paths. It is crucial that we come to see ourselves as an integral part of the total living community".

Based on this understanding, we must begin the regeneration of our cities and waterfronts over the next decade. Only by understanding the city as a part of nature can we deal with the wounds inflicted on it, mend its ways, and design its form so that it functions sustainably to satisfy needs without diminishing opportunities for future generations.

The Environmental Revolution

There is, of course, no other choice. The Environmental Revolution is already here — as almost everybody knows. It developed out of the perspectives of the conservation movement at the turn of the century, and was quickened by the actions of anti-pollution activists in the last 25 years. As a result, the environmental imperative today is hitting the city with seismic force.

The fact is that, in pursuit of its needs and pleasures, our throwaway society has poisoned the air, polluted the rivers, and contaminated the earth, without worrying or caring to learn about the long-term damage

caused to the environment or about the way we are foreclosing opportunities for future generations. Unswimmable beaches, undrinkable water, unfishable rivers that have become sewers — these are only some of the visible, touchable signposts of environmental carelessness and degradation.

People will no longer put up with it. Environmental consciousness has already begun to reorganize government policies and priorities, recast corporate strategies, and redefine community and individual responsibility and behaviour. And it is raising fundamental questions — spiritual questions — about the relationship of humankind to nature and to God. It has become a force strong enough to change the face, form, and function of cities around the world.

An Integrated Approach to Cities

It is for these reasons, among others, that the idea of using an ecosystem approach to the regeneration of cities has gained increasing acceptance. An ecosystem is composed of air, water, land, and living organisms, including humans, as well as the interactions among them. The concept has been applied to many types of interacting systems, among them lakes, watersheds, the biosphere, and cities themselves.

Traditionally, human activities have been managed on a piecemeal basis, treating the economy separately from social issues or the environment. But the ecosystem concept holds that these are interrelated, that decisions made in one area affect all others. Dealing effectively with the environmental problems in any city requires a holistic or ecosystem approach to managing human activities.

There are certain key characteristics of an ecosystem approach that help illustrate what is required. An ecosystem approach:

- includes the whole system, not just parts of it;

- focuses on the interrelationships among the elements;
- understands that humans are part of nature, not separate from it;
- recognizes the dynamic nature of the ecosystem, presenting a moving picture rather than a still photograph;
- incorporates the concepts of carrying capacity, resilience, and sustainability — suggesting that there are limits to human activity;
- uses a broad definition of environments — natural, physical, economic, social and cultural;
- encompasses both urban and rural activities;
- is based on natural geographic units such as watersheds, rather than on political boundaries;
- embraces all levels of activity — local, regional, national, and international;
- emphasizes the importance of species other than humans and of generations other than the present; and
- 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.

Because all environmental problems (and, in fact, all social and economic problems) cut across disciplines and jurisdictions, the multidisciplinary and multijurisdictional qualities inherent in ecosystem planning make this approach particularly necessary and appropriate.

Overcoming Jurisdictional Fragmentation

Unfortunately, most of society is not organized in a way that facilitates this comprehensive approach. In Canada, for example, four levels of government have jurisdiction in the Toronto city region, and more than 100 agencies exercise responsibility

with little effective co-ordination among them. Indeed, in the past, the parochial pressures of bureaucracies and representative governments have almost compelled them to be unresponsive to cross-jurisdictional issues. When everyone is in charge, no one is in charge.

The result is bureaucratic and political paralysis — a situation in which almost any agency can stop projects, and no one can do anything. Because lines of accountability are completely distorted or hidden by this jurisdictional fragmentation, the citizen is left without any means of recourse. The implications for our democracy may be more crucial than we know. The jurisdictional gridlock throughout this region is the single biggest obstacle to its environmental (and economic) regeneration. And this is not a problem unique to the Toronto city region.

The ecosystem approach, then, requires new institutional arrangements. As the Brundtland Commission warned in its 1987 report, **Our Common Future**:

Most of the institutions facing those challenges tend to be independent, fragmented, working to relatively narrow mandates with closed decision processes. Those responsible for managing natural resources and protecting the environment are institutionally separated from those responsible for managing the economy. The real world of interlocked economic and ecological systems will not change; the policies and institutions concerned must.

Common Features to Diverse Solutions

Each city region in the world will have to develop its own institutional adaptations in order to implement an ecosystem approach to planning. Each adaptation will reflect the history, culture, traditions, habits, and customs unique to that city. But it is also possible to see that cities will discover some common features in their new approach:

- the recognition of the primacy of natural boundaries and processes;
- the integration of land use with environmental planning in public process and law;
- the integration of urban and rural planning to link the city with its region;
- the creation of concurrent, rather than consecutive, planning processes;
- the integration of capital budgets of all government departments and agencies to ensure coherence, economies, and financial strength; and
- the recognition of the increasing importance of designing places and spaces that allow people to feel a part of nature while they take advantage of the immemorial human pleasures that only cities can offer.

These kinds of institutional adaptations will help cities develop their potential fully. **Environment by Design** could not express it better than by quoting Claude Lévi-Strauss:

Cities have often been likened to symphonies and poems, and the comparison seems to me a perfectly natural one. . . . By its form, as by the manner of its birth, the city has elements at once of biological procreation, organic evolution and aesthetic creation. It is both a natural object and a thing to be cultivated; something lived and something dreamed. It is **the human invention par excellence.**

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INTRODUCTION: THE WORK OF THE ROYAL COMMISSION ON THE FUTURE OF THE TORONTO WATERFRONT

WE SHALL NOT CEASE FROM EXPLORATION
AND THE END OF ALL OUR EXPLORING
WILL BE TO ARRIVE WHERE WE STARTED
AND TO KNOW THE PLACE FOR THE FIRST TIME.
—T.S. ELIOT. FOUR QUARTETS. LITTLE GIDDING, V

THE FIRST PHASE

On 30 March 1988, the Governor-in-Council, on the recommendation of the prime minister, approved the appointment of the Honourable David Crombie as Commissioner to:

inquire into and make recommendations regarding the future of the Toronto waterfront and to seek the concurrence of affected authorities in such recommendations, in order to ensure that, in the public interest, federal lands and jurisdiction serve to enhance the physical, environmental, legislative and administrative context governing the use, enjoyment and development of the Toronto waterfront and related lands.

More specifically, the Commission was directed to examine:

- the future of the Toronto Island Airport and related transportation services;
- the issues affecting the protection and the renewal of the natural environment insofar as they relate to federal responsibilities and jurisdiction;
- the issues regarding the effective management of federal lands within the Toronto waterfront area; and
- the possible use of federal lands, facilities, and jurisdiction to support emerging issues such as the proposed Olympic Games and World's Fair.

The Commission was initially given a three-year mandate, from June 1988 to June 1991; that was later extended to 31 December 1991, in order to give the Commission time to complete added work requested by the Province of Ontario.

The Government of Canada's decision to establish the Commission was based on

its recognition that the Toronto waterfront was an area offering many opportunities but had, to quote an Intergovernmental Waterfront Committee (IWC) that looked at the situation, “a number of urgent matters that must be studied and dealt with”.

The IWC had been organized informally 18 months before the Commission was established, after the prime minister asked Mr. Crombie, then a cabinet minister from Toronto with a particular interest in urban issues, to make recommendations on the appropriateness of having the Government of Canada, through the Canadian Broadcasting Corporation (CBC) — a Crown corporation — involve itself in urban redevelopment in downtown Toronto.

In the course of discussing this project with representatives of the Province, Metropolitan Toronto, and the City of Toronto, it became evident to Mr. Crombie that there were some common concerns, particularly about waterfront issues and about the jurisdictional gridlock that had developed in dealing with them. This led to a decision to set up the IWC, with then-Premier David Peterson in the chair, and a membership comprising Dennis Flynn, then chairman of the Municipality of Metropolitan Toronto; the then-mayor of Toronto, Art Eggleton; and Mr. Crombie.

The IWC met over the next several months to identify common concerns on which concerted action might be taken, work that proved to be the foundation for tasks eventually assigned to the Royal Commission.

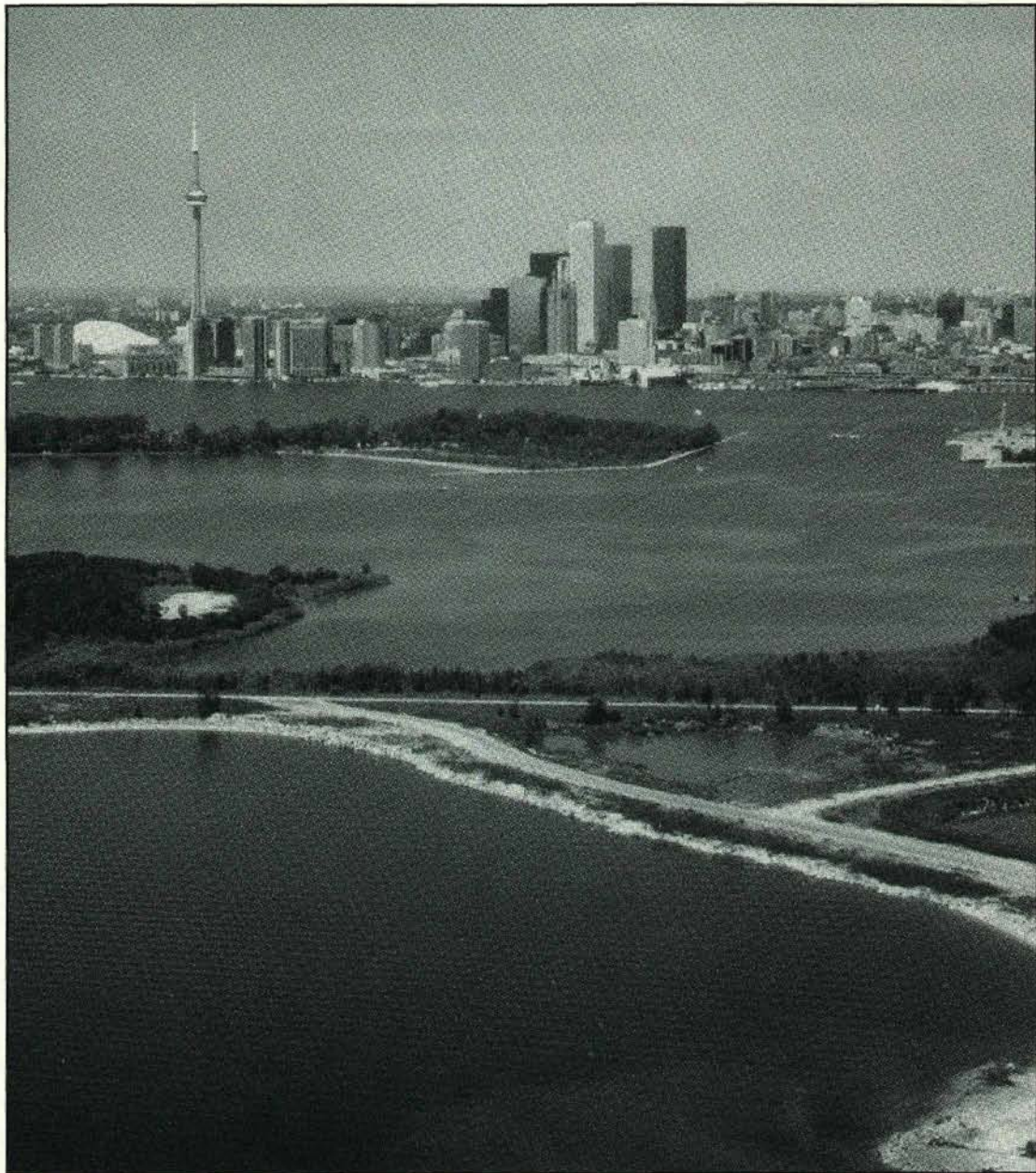
The Commission began by organizing five work groups that would look at broad waterfront issues, and planned a series of public hearings for the spring of 1989. In addition, Commission staff and experts

under contract began to analyse the port, airport, land-use, and development activities of federal agencies on the waterfront.

From the beginning, the Commission conducted open inquiries, seeking to consider all perspectives and listening to all points of view. Openness included invitations to federal, provincial, and municipal governments to participate in the Commission’s work groups and studies, alongside representatives of the private sector, labour, and academia. The Government of Canada, the Province of Ontario, and other invited participants accepted willingly and worked co-operatively from the start. Initially, however, municipalities were wary, fearing that the existence of the Commission might be an attempt by the federal government to extend its jurisdiction on the waterfront. As it became clear that this was not the case, and that the Commission intended to respect existing jurisdictions at all levels, a very high degree of intergovernmental co-operation was offered in every aspect of the Royal Commission’s work.

It soon became evident to the Commission, as it had been to some others, that waterfront problems were both broader and deeper than the list of issues included in the Commission’s federal mandate. They stemmed from historical forces related to the way society and the economy had evolved over the past 200 years, and to the impact each had on the waterfront and on the local and regional environment of which the waterfront is a part.

The public, ahead of governments, was aware of the nature of the problem. In the Commission’s first sets of hearings, dozens of deputants delivered the same message: by all means sort out the issues of Harbourfront and the Harbour



Toronto Skyline, view from the Toronto Islands

Commissioners, but help us find out how to make our lake publicly accessible, fishable, drinkable, and swimmable. This cannot happen while the rivers that empty into the lake are contaminated, the air that connects to it is dirty, the groundwaters polluted, and the soils through which they pass contaminated.

During this first phase of its work, the Commission published seven major reports, as background for the public hearings and as the basis of its analysis of waterfront needs and opportunities: *Environment and Health: Issues on the Toronto Waterfront*; *Housing and Neighbourhoods: The Liveable Waterfront*; *Access and Movement*; *Parks*,

Pleasures, and Public Amenities; Jobs, Opportunities, and Economic Growth; Persistence and Change: Waterfront Issues and the Board of Toronto Harbour Commissioners; and The Future of the Toronto Island Airport: The Issues.

Fortunately, the Commission had not been given specific boundaries as part of its original mandate. Therefore, work groups were encouraged to draw whatever boundaries they felt were necessary in considering the issues placed before them. The limits turned out to be broader (and vaguer) in some instances (e.g., environment and health) and narrower and more specific in others (e.g., housing and neighbourhoods).

However, at this stage of the Commission's existence, its principal geographic focus was the waterfront of the Regional Municipality of Metropolitan Toronto, including the three local municipalities of Etobicoke, Toronto, and Scarborough. In many instances, the word *Toronto* came to be used as shorthand for all the communities in the region, defining the sense of place. In fact, a study conducted for the Commission in 1991 reveals that, rather than naming the individual municipalities in which they live, seven of every ten area residents think of themselves as coming from Toronto.

By the end of the first year of operations, the Commission had reached its first set of conclusions, which it conveyed to the federal government and the public through its first interim report, in August 1989. It summarizes the first phase of the Commission's work, which had focused on the waterfront in the context of Toronto's history, values, and contemporary issues:

Toronto was born on the waterfront. Long before the Simcoes. Long before the Town of York. Deep in the

mists of aboriginal time, the Toronto Carrying Place was a centre of trade, stabilized by community and endowed with spiritual significance.

When Toronto embraced the Railway Era in the 1850s, there were few hints of the City that would emerge, the City the railways would help to create. And if the City was cut off from its waterfront by dozens of sets of tracks flowing in and out of each other in the new lands south of Front Street — and it was — it is also clear that the City and its people benefitted mightily. Having secured a major share of a new technology, and established a formula for economic success that remains potent to this day, Toronto drew hundreds of industries to its shores over the years. And as energetic cities do, it began to attract people from other parts of Canada and from all over the world: creative people, people with dreams and ideas, people seeking freedom and better prospects, people whose children and their ensuing generations would keep Toronto vigorous. And the City prospered.

But as railways and then expressways cut people off from their waterfront, as people looked elsewhere to live, work, and play, and as our economic drive brought greater prosperity to more and more people, our perspective changed dramatically. The significance of waterfronts was lost and their importance diminished; the great contribution of our river valleys was no longer understood or taught and, save for a few hardy souls, the essential role of Nature in the City was all but forgotten. Progress meant industry and industry

meant railways. Railways required land for track and cities agreed to separate themselves from their waterfronts in order to capture the opportunities the railways offered.

But in our time the railways have become more interested in profit from the land than in service from the tracks; ships have changed their technologies and their trade routes; the economic base of cities is being changed and there has been a significant shift in human values. People are coming back to our waterfronts for pleasure and solace in a way that their great-grandparents would have understood.

This is dramatic, powerful, and far-reaching historical change. The people of Toronto

understand this. Time and again, they have expressed their belief that

Toronto's way of doing things, its

values, its civic traditions could and should be used to deal with the forces that affect the future of the waterfront and the city.

Three words define the values of Toronto at its best: opportunity, tolerance, and orderliness. With a few pauses, Toronto has been a place at the cutting edge, a magnet for new ideas, and a resource in realizing them. In Toronto, as in all vigorous cities, opportunities beget opportunities.

Moreover, there has always been an ongoing opportunity to affect the course of the city itself — a sense that Toronto is a work in progress and that its directions can be changed. People

who have been in Toronto for a while begin to develop a feeling of what they want it to be, what of its many facets would benefit from change, what should stay the same.

Tolerance has meant the near-total absence of violent confrontation. There are forums where people grapple with ideas, interests, and beliefs. When compromise is possible, compromise is made, but even when it is not possible, "losers" are left with the knowledge that, next time, they could just as easily be "winners": an idea has been rejected, not the person who proposed it. This climate of tolerance has also meant that sooner or later, "New Torontonians" (new arrivals or new generations, or

both) will have their ideas and aspirations brought to the City's and the public's official attention and they will be given respectful considera-

tion. Tolerance means that everybody learns that everybody counts.

Orderliness has been important in the building of Toronto. With all the transformations the City has experienced and all the conflicts it has had to resolve, nothing has ever truly gotten out of hand. That discipline (a better word, maybe, than orderliness) has been here from the beginning — a lingering legacy, no doubt, of Governor Simcoe's garrison days. It is a value, or a virtue, that has been drawn upon by each succeeding wave of New Torontonians, reinterpreted on occasion and adapted to specific circumstances, but always enriched along the way.

Toronto has been a place at the cutting edge, a magnet for new ideas, and a resource in realizing them.

Toronto continues to recognize that freedom remains alive only in an atmosphere of order, that life here is played by a set of rules, and that the rules are meant to work for everybody. From this comes the assurance that nothing will ever get out of hand or out of control; that the City will never grow beyond its ability to solve its problems; that, when things start to go wrong, order will be restored and the right thing done.

Well, that's the faith. Easier to say than to do. Forging consensus rooted in these core values is the dull, hard work of democracy — an unrelenting, never-ending task that requires the energies, interests, and imaginations of many people over long periods of time. Sometimes their voices are not heard. Sometimes the thread is lost — or their visions are blocked. And sometimes the soul-numbing experiences of day-to-day battle create a tempting cynicism that obscures the progress being achieved.

Indeed, the values that we call opportunity, tolerance, and orderliness work best when people believe they themselves can make a difference; when they feel that their dreams can expand their realities; and when they feel that Toronto holds its own unique promise for them, a promise that can be fulfilled by their efforts, both individually and in community with others.

Armed with this appreciation of Toronto's core values, the Commission turned its attention to a first set of recommendations. The Commission had already

decided to make interim recommendations that would facilitate the ongoing process of analysis and help forge a consensus on required courses of action. It would make final recommendations on issues it felt capable of dealing with as early as possible in its mandate, in hope of obtaining early agreement and response from the community and from the governments involved.

The Commission made more than 60 recommendations in this first interim

report, more than half of which dealt with environmental issues. Most of these suggestions were directed in the first instance to the federal government,

but a number were generic and applicable to two or more levels of government. True to its mandate, the Commission was seeking the concurrence of affected authorities.

The single most important recommendation of the interim report was the proposal that a watershed approach be adopted to protect Toronto's vital ecosystem. The report said:

To begin, a broad evaluation is needed to ensure that sufficient open space is maintained and that its environmentally significant features are preserved. Across the entire watershed, a "green" strategy [should] be devised to preserve the waterfront, river valley systems, head-waters, wetlands, and other significant features in the public interest. Such a strategy would physically link the waterfront to the river valley systems, which, in turn, would be linked by the preserved headwater areas. A

In the first interim report the most important recommendation was the proposal that a watershed approach be adopted to protect Toronto's ecosystem.

continuous trail system would guarantee public access to these natural and open spaces.

Major elements supporting the green strategy were the Commission's proposals that the Rouge River Valley be protected as a natural heritage park, Humber Bay Park East be protected as significant regional urban space, and the Leslie Street Spit be recognized as an urban wilderness park. The Commission defined "urban wilderness" as an extensive area in which natural processes predominate; there is public access without vehicles; and there are low-key, low-cost, unorganized recreation and contacts with wildlife.

The environmental recommendations made by the Commission in the report included proposals for:

- improving public access to the entire waterfront and extending public ownership;
- imposing a moratorium on lakefilling until a comprehensive lakefill policy is developed;
- establishing a waterfront-wide heritage policy;
- protecting all natural areas and wildlife along the waterfront, and rehabilitating and maintaining river valleys such as the Humber, the Don, and the Rouge;
- creating a watershed greenbelt;
- strengthening and more closely integrating the Ontario Planning Act and the Environmental Assessment Act, as well as strengthening the federal environmental review process; and
- controlling over-development, including high-rises, on the waterfront to prevent visual or physical barriers.

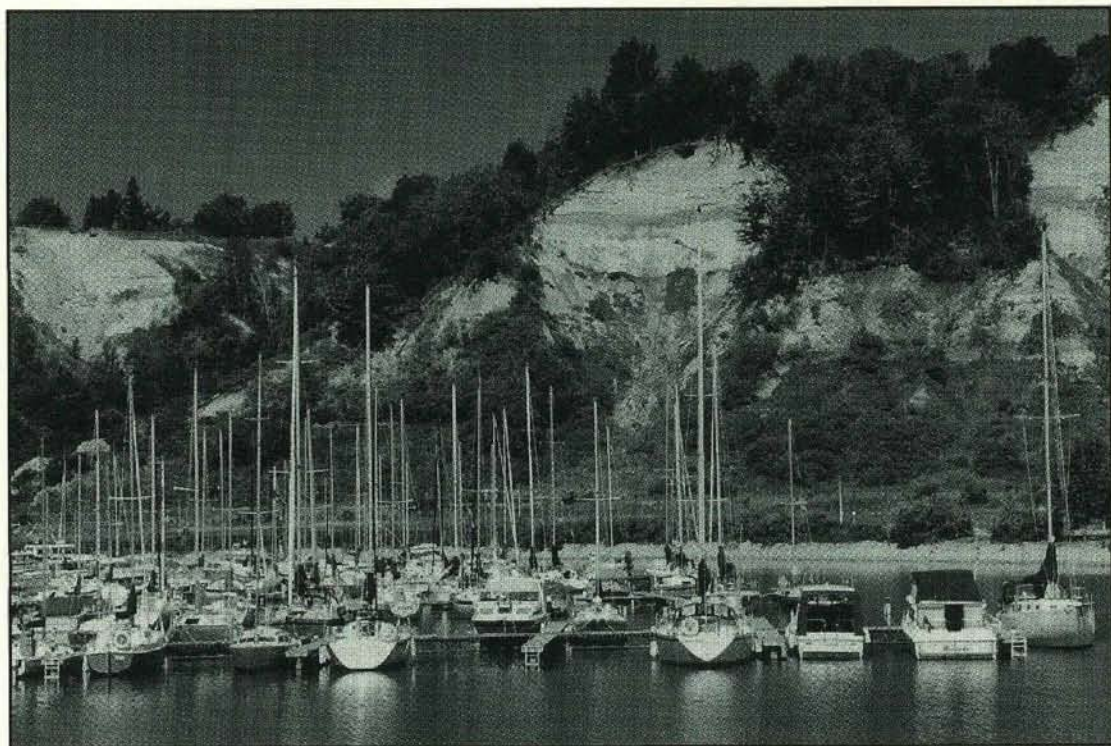
All these issues and recommendations were to be more fully analysed and considered in subsequent phases of the Commission's work.

In the same interim report, the Commission also made its final recommendations on the Toronto Island Airport and on Harbourfront, as well as its fundamental recommendations about the Board of Toronto Harbour Commissioners. They are summarized here and discussed in greater detail in Part III of this report.

The Commission recommended that the federal government terminate the Harbourfront Corporation and create a new entity, the Harbourfront Foundation, giving it a mandate to continue providing Harbourfront's wide variety of cultural, recreational, and educational programs, which would be supported by an endowment from the Harbourfront assets. The Commission suggested that lands not needed to endow the foundation should be disposed of, subject to negotiations with the City of Toronto; furthermore, the Commission felt that urban design improvements were also needed, to achieve the best physical integration of the Harbourfront area with the surrounding city and the water.

In considering the Toronto Island Airport, the Commission concluded that it should continue its dual role as part of a regional airport system. Within this system, it should serve general aviation and limited air commuter operations, in accordance with the terms and conditions of the 50-year Tripartite Agreement signed in 1983 among the City of Toronto, the Toronto Harbour Commissioners, and the federal Minister of Transport.

The Commission also recommended that a new airport plan be prepared, one



Bluffer's Park Marina, Scarborough

that would reflect that dual role and ensure that the airport would remain at its existing scale, be cleaner and quieter, and become more sensitive to the needs of its users. It also found a need for management improvements, including a new financial and accounting base, and improved public and user consultation processes.

The Commission recommended that the mandate of the Toronto Harbour Commissioners (THC) to operate the Port of Toronto be separated from planning or developing lands that do not serve the port function. The THC should retain its authority to operate the Port (and the airport) on behalf of the City of Toronto but should be limited to that task. The Commission suggested that, in addition to the proposed changes to the THC's mandate, greater local control of waterfront planning and a better system of accountability were needed.

The Commission indicated it would conduct studies during the next phase of its work, to evaluate how much land was needed for the port operation and which lands could be transferred to another body. It also recommended that an environmental audit of the entire East Bayfront/Port Industrial Area be carried out before there was further action to develop lands in those areas.

THE SECOND PHASE

On 30 August 1989, the same day the Commission's report was released, then-Treasury Board President Robert de Cotret responded on behalf of the Government of Canada:

The government is in substantial agreement with the Royal Commission's recommendations on Harbourfront, is generally supportive of the recommendation

that the airport continue to serve general aviation and limited commuter traffic, and is open to discussions with the City of Toronto regarding the recommendation to transfer management of lands no longer required for port purposes from the Toronto Harbour Commissioners to another body.

Shortly thereafter, on 17 October 1989, the Province of Ontario also acted: then-Premier David Peterson announced broad provincial measures to ensure that Toronto's waterfront is preserved, protected, and used prudently as an accessible and attractive place for people.

These measures included:

- endorsing the Royal Commission's report;
- providing an additional, complementary mandate to the Commission, asking it to report to the Province on waterfront development issues along the entire western basin of Lake Ontario, from the eastern boundary of Durham Region to the western boundary of Halton Region;
- agreeing to join the environmental audit of the East Bayfront/Port Industrial Area, and issuing an invitation to Metropolitan Toronto and the City of Toronto to participate as well;
- declaring a Provincial Interest in that area under the Planning Act, "to prevent any major development . . . until it can be determined what is appropriate for the people and the environment";
- asking the Commission to recommend ways of linking and integrating the waterfront to the upstream watersheds

throughout the Greater Toronto region; and (in a companion move)

- appointing Ron Kanter, then MPP for St. Andrew-St. Patrick, to identify ways of protecting forever the headwaters and river valleys from the Oak Ridges Moraine to Lake Ontario.

Having said on numerous occasions that no one level of government can resolve all the issues related to the development of the waterfront in the public interest, Mr. Crombie called the new provincial mandate, added to that from the federal government, "a very strong signal of federal-provincial co-operation on these matters". Indeed, it made this Commission only the second in Canadian history to serve two levels of government. (The first had been the one called to investigate the Ocean Range disaster off Newfoundland in 1976.)

The mandate the Province gave the Commission was broad and comprehensive. Because of the waterfront's environmental significance; the extensive socio-economic pressures that characterize waterfront development; and the importance of rational planning and development of the waterfront to ensure future quality of life and the well-being of hinterland areas, the Province asked the Commission to inquire into and make recommendations concerning:

- appropriate allocation of waterfront lands to various uses — i.e., housing, open-space, industrial, and commercial uses;
- waterfront transportation in the context of the regional transportation system;
- housing and community development on the waterfront;

- employment and job opportunities relating to the waterfront; and
- initiatives to preserve and enhance the quality of the environment and the quality of life for people living in the region.

The Commission was asked to conclude its inquiries and submit its recommendations to the Province at the same time that it reported to the federal government.

In the second phase of its operations, the Commission used the same methods as in its first year: utilizing work groups, independent analysis, public hearings, and consulting with interested parties. Now, however, it was working in a much more fully regional context — looking at a region with a shoreline of some 250 kilometres (155 miles) covering 17 local municipalities, six conservation authorities, four regional municipalities, and four counties on the waterfront.

The Commission held three more sets of public hearings in this second phase, in Burlington, Toronto, and Oshawa, and published three more background reports: *A Green Strategy for the Greater Toronto Waterfront*, *Waterfront Transportation in the Context of Regional Transportation*; and the results of the first phase of the environmental audit, *East Bayfront/Port Industrial Area: Environment in Transition*.

The work ranged from theory to practice, policy to program, and from the scale of the Great Lakes to that of the region and its communities. Fundamental to all its efforts was the conviction that the

environment had to be the workbench on which all other aspects of the Commission's operations and conclusions would be built.

This need — to consider the environment first and make it the central theme — led the Commission to choose an ecosystem approach for analysing the state of the environment of the waterfront, the watershed, and the (bio)region, and for charting their future. Learning as it went, leaning

heavily on thinkers (Jack Vallentyne, Andy Hamilton, Henry Regier, Don Gamble, Peter Sly, Katherine Davies, and Trevor Hancock, among others) who had been and are still working out underlying

The environment had to be the workbench on which all other aspects of the Commission's operations and conclusions would be built.

This conviction led to the ecosystem approach.

ecosystem concepts, the Commission sought to understand the approach in theory and, in its audit of the East Bayfront/Port Industrial Area, to apply it.

The emphasis on understanding environmental conditions as a prelude to planning courses of action brought the Commission into contact with many parties, among them:

- the International Joint Commission (IJC), in connection with its work on water quality and water levels in the Great Lakes;
- the four parties (i.e., environmental agencies of the U.S. and Canadian governments, the State of New York, and the Province of Ontario) responsible for creating the Lake Ontario Toxics Management Plan (LOTMP); and
- locally, various stakeholders associated with Remedial Action Plans (RAPs),

which are designed to clean up contamination “hot spots” in areas around the Great Lakes, Toronto being one of them.

The Commission’s second interim report, *Watershed* (1990), was submitted to the federal and provincial governments in September 1990; it begins with a definition of “ecosystem” and an explanation of the significance of the ecosystem approach:

Simply put, an ecosystem is composed of air, land, water, and living organisms, including humans, and the interactions among them. The concept has been applied to many types of interacting systems, including lakes, watersheds, cities, and the biosphere.

Traditionally, human activities have been managed on a piecemeal basis, treating the economy separately from social issues or the environment. But the ecosystem concept holds that these are interrelated, that decisions made in one area affect all the others. To deal effectively with the environmental

problems in any ecosystem requires a holistic or “ecosystem” approach to managing human activities. . . .

The environmental audit is demonstrating the inextricable links among the East Bayfront/Port Industrial Area, other parts of Toronto, the Don River Watershed, and the Great Lakes. Similarly, the Greater Toronto Area waterfront being investigated by the Royal Commission is part of a region that includes the watersheds of the

rivers leading into Lake Ontario from the GTA. Anything that happens within this area is tied ecologically to the health of the waterfront.

Therefore in order to truly understand the waterfront itself, we must gain an understanding of the biological region, or bioregion in which it lies.

Watershed then goes on to assess the state of the waterfront and of the Greater Toronto bioregion, defined by the Commission as the area bounded by the Niagara Escarpment to the west, the Oak Ridges Moraine to the north and east, and Lake Ontario to the south. In the words of the report:

The assessment concluded that this is an ecosystem under considerable stress; one that is, to a large degree, “disintegrated”, in which the carrying capacity — the ability of air, land, and water to absorb the impact of human use — is clearly strained, and cannot be sustained over the longer term unless fundamental changes are made.

There is an urgent need for regeneration of the entire

Greater Toronto Bioregion to remediate environmental problems caused by past activities, to prevent further degradation, and to ensure that all future activities result in a net improvement in environmental health.

The Commission recognizes that governments, working alone, cannot solve our environmental problems, and that the bioregion’s six thousand industries and four million residents have responsibilities they must meet.

The ecosystem concept holds that economy, social issues, and environment are interrelated — decisions made in one area affect all the others.

Because the ecosystem approach highlights interactions among ecological, social, economic, and political systems in the bioregion, the Commission emphasized the importance of developing new administrative mechanisms that bring jurisdictions together to solve problems co-operatively and that help establish environmentally sound ways of living.

Watershed's second chapter focuses on the needs of the Greater Toronto waterfront in the context of its bioregion and offers a set of nine principles for planning, developing, and managing a healthy, integrated waterfront.

The Commission said the waterfront should be clean, green, useable, diverse, open, accessible, connected, affordable, and attractive. (There is a more detailed explanation of the interpretation, origins, and possible applications of these principles, both in *Watershed* and in this report.)

Watershed contains some 80 recommendations for implementing an ecosystem approach that will restore the health and usefulness of the waterfront. As in the first interim report, some suggestions are generic, involving the entire waterfront or region, while others are specific to particular areas or jurisdictions. Although many recommendations were directed to the federal government, most flowed from the Commission's provincial mandate.

Among the most important generic, region-wide recommendations were:

All federal, provincial, and municipal governments and agencies with an

interest in or influence over the waterfront should adopt the ecosystem approach and principles outlined in this report as a basis for planning.

The Province should declare the waterfront from Burlington to Newcastle a Provincial Resource, and it should provide leadership, resources, and opportunities for collaboration amongst various parties, in order to integrate planning and programs as part of efforts to regenerate the waterfront.

The Province should establish Waterfront Partnership Agreements with municipalities, along the lines recommended in this [*Watershed*] report.

Over the next year, the Province should work with the Commission to review ways in which the philosophy and principles of the eco-

system approach could best be integrated into the Planning Act and other relevant provincial legislation, as it affects the Greater Toronto bioregion. . . .

The Province should plan, co-ordinate, and implement a Waterfront Trail from Burlington to Newcastle, to be completed by 1993 to celebrate both the bicentennial of the founding of York and the centennial of the Ontario provincial parks system. . . .

The Province should take immediate steps to preserve the ecological, scenic,

Watershed offers recommendations for implementing an ecosystem approach and developing the administrative mechanisms to bring jurisdictions together to solve problems co-operatively and to establish environmentally sound ways of living.

and recreational significance of the Oak Ridges Moraine, and to ensure that future land use in the moraine does not result in cumulative impairment of the ecological quality of downstream rivers or the waterfront. . . .

The federal and provincial governments should modify the RAP process by elevating each municipality from being one of many stakeholders, to being a joint partner in developing and implementing the RAP. Using the watershed approach, all municipalities within a given watershed should be asked to collaborate on the RAP. . . .

The Province should bring forward comprehensive lakefill policies for public review as soon as possible. The policies should require thorough environmental appraisal of all individual lakefill projects, and of their cumulative effects, across the Greater Toronto Waterfront. Until such policies are in place, there should be a moratorium on new lakefilling. . . .

The waterfront, the Oak Ridges Moraine, and river valleys of the Greater Toronto Area should be recognized as Provincial Resources in the public debate and decisions made by all levels of government on the urban form and structure of the region. . . .

In addition to the recommendations dealing with environmental regeneration at the regional scale, *Watershed* considered a wide range of specific matters, including:

- devising a concept for the route of a continuous Waterfront Trail from Burlington to Newcastle;

- examining the possibility of reducing the barrier effects of the Gardiner/Lakeshore Corridor, by taking down the elevated portion of the expressway in phases and improving public transit and road systems in the area;
- creating a Waterfront Regeneration Trust, to co-ordinate the regeneration of the waterfront;
- defining and proposing the transfer of THC's non-port lands: to the City of Toronto for parkland and a wildlife corridor; to the Toronto Economic Development Corporation (TEDCO) for industrial purposes; and to the proposed Waterfront Trust for decontamination and redevelopment for mixed uses;
- creating a Centre for Green Enterprise and Industry; and
- drafting waterfront plans and projects in Halton Region, Mississauga, Etobicoke, Scarborough, and Durham Region.

When *Watershed* was released, Mr. Crombie said he was "encouraged over the past year by the continuing strong public interest in the waterfront and by signs of an emerging consensus among all levels of government concerning waterfront policies and priorities. The aim of this report", he continued, "is to provide the basis for governments to act now on the fundamental decisions that have to be taken to ensure that the people of Toronto have the waterfront they want and deserve".

There was widespread and positive community and government reaction to the Commission's principles, and to its recommended approach for regenerating the waterfront and watershed.

THE THIRD PHASE

Once more, the Government of Canada responded promptly. On 12 September 1990, Robert de Cotret, then Treasury Board president and Environment minister, said:

I fully support the comprehensive ecosystem approach that the Commission has adopted and which is integral to the *Great Lakes Water Quality Agreement*. The federal government has an important role to play in responding to *Watershed* and we will do our full share within our jurisdiction.

He also commented favourably on the proposed Centre for Green Enterprise, and promised that the government would look closely at recommendations to increase public access to the waterfront, and to transfer federal lands along the waterfront to other levels of government. Mr. de Cotret added, "Mr. Crombie has presented a useful framework for discussing the future of the Toronto Harbour Commissioners. The government will be discussing these recommendations with the City of Toronto, the Province, the Royal Commission, and other interests".

That same afternoon, Bob Rae, then premier-elect, welcomed *Watershed*, saying:

The Government of Ontario will provide the strong provincial leadership needed to maintain the ecological integrity of the waterfront. We fully agree with the ecosystem approach to waterfront policies and priorities, and we are prepared to work closely with local governments and existing agencies to protect the ecology of the watershed and to create a diverse, integrated, and healthy waterfront.

Almost all municipalities across the waterfront also endorsed the report, as did

representatives of business, labour, and environmental and community groups.

Shortly after the release of *Watershed*, the Commission organized another work group, to review how the philosophy and principles of the ecosystem approach might best be integrated into the Planning Act and into other legislation that affects the Greater Toronto bioregion. The group's conclusions and recommendations were published in *Planning for Sustainability: Towards Integrating Environmental Protection into Land-Use Planning*.

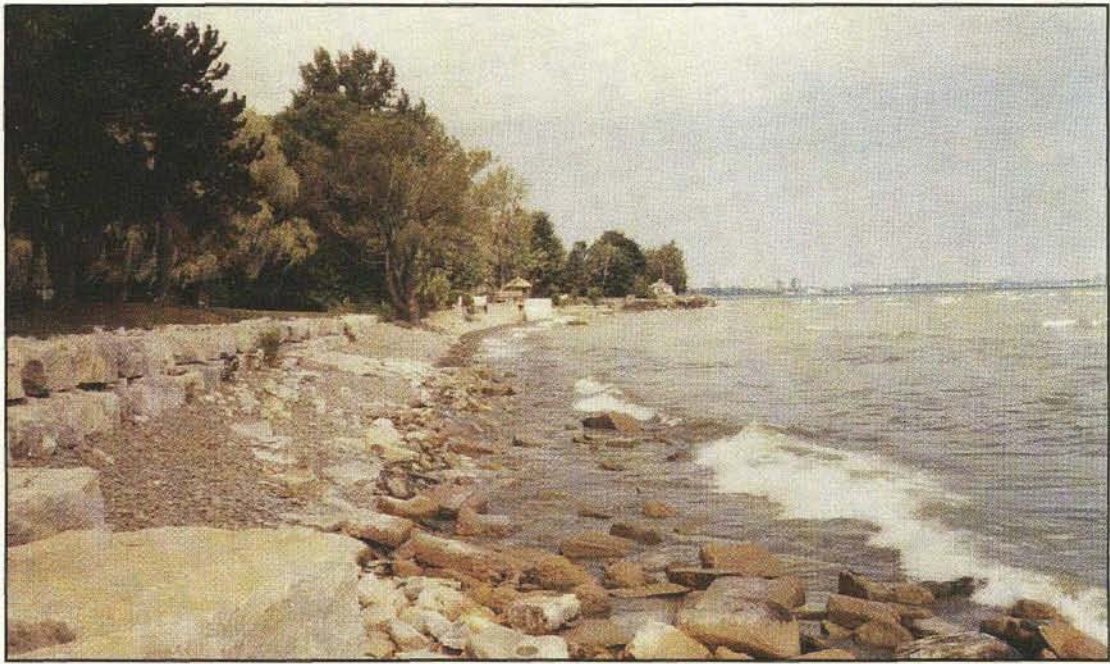
The Province of Ontario responded more fully three months after *Watershed* was released. On 17 December 1991, Ruth Grier, Minister of the Environment and minister responsible for the Greater Toronto Area, commended the previous government and John Sweeney in particular, for giving the Commission a broad mandate and for supporting the Commission; she continued:

We endorse fully the principles put forward for the future direction of the waterfront area; a waterfront that is clean, green and attractive; a waterfront that is useable, diverse and open; and a waterfront that is connected, affordable and accessible.

We intend to use these nine principles as a guide, not only for the waterfront, but to move beyond the waterfront — to the GTA urban structure process. We will provide a framework to ensure that greenlands and watersheds become an integral part of future plans for the Greater Toronto Area.

Today, I would like to outline how we intend to implement key recommendations of the report.

Firstly, we will establish a continuous Waterfront Trail which will



Watersedge Park, Mississauga

become the Green-Way that ties the GTA together from Burlington to Newcastle. It will link to the Bruce and Ganaraska Trail systems at either end. We see the waterfront trail as the highest land use for all public lands along the water's edge. The trail will be much more than a four foot strip of asphalt. This trail will connect the waterfront with river valleys and source areas and link up areas of natural and historic importance along Lake Ontario. It will be a place for people, for families and children to enjoy the out of doors and the natural environment on foot or bicycle.

Secondly, we accept the idea of Waterfront Partnership Agreements as a valid implementation vehicle for waterfront plans. We will negotiate agreements between local, regional and federal governments, along with conservation authorities, to prepare responsible development plans and implementation

mechanisms for the waterfront consistent with the Crombie principles.

Thirdly, we will establish by legislation a Waterfront Regeneration Trust to co-ordinate regeneration activities.

Finally, we will move to halt the unnecessary privatization of the public shoreline and Crown resources such as water lots.

Mrs. Grier turned her attention to the remaining period of the Commission's mandate:

In the final year of the Royal Commission's work, we will ask Mr. Crombie to address:

The feasibility of relocating the Gardiner Expressway in consultation with Metropolitan Toronto and the Ministry of Transportation;

the pooling of lands and the integration of future plans for the Canadian National Exhibition,

Ontario Place, Fort York and HMCS York in consultation with the Ministry of Tourism and Recreation and the other authorities involved; and

policies, practices, technology and methods available to regenerate shoreline areas.

The Commission soon realized that these additions to its mandate could not be explored in the time still available. As a result, both the federal and provincial governments extended the Commission's life by six months, to December 1991.

In addition to publishing *Planning for Sustainability*, in the third phase of its work, the Commission completed the environmental audit of the East Bayfront/Port Industrial Area (*Pathways: Towards an Ecosystem Approach*) and the three tasks given it by the Province. The results of these efforts were published in three major reports: *Shoreline Regeneration*; *Garrison Common: Preliminary Master Plan*; and *The Toronto Central Waterfront Transportation Corridor Study*.

Adopting the ecosystem approach made the environment the key to the Commission's thinking. But that approach demands an understanding of the dynamic interaction among environmental, economic, and community issues. Therefore, in addition to work associated with the new elements of its mandate, the Commission carried out further research and mounted seminars to consider the broader implications of the ecosystem approach.

In addition, working papers were published on cumulative effects, soil decontamination, the regional economy, community profiles, and the waterfront in winter.

The Commission continued to communicate with a wide range of groups and individuals, using the *Newsletter*, speeches, presentations, consultations, and meetings. In the summer of 1991, it surveyed public opinion on waterfront issues, having the polling firm, Environics, add a number of questions to its regular survey of residents living in the Greater Toronto region.

Environics found that issues relating to the environment and the waterfront ranked high among elements identified as contributing to the quality of life in the region, and that people in the region view environmental protection as an economic issue.

THE FINAL REPORT

This final report summarizes all that has come before in the work and experience of the Royal Commission on the Future of the Toronto Waterfront. Throughout the Commission's existence, all those involved in it thought hard and listened carefully to the views and advice of people — thousands of people. Therefore, this is the work of many hands and minds; it embodies the values, aspirations, concerns, and hopes of these thousands of citizens.

In looking at our collective experience, those who were involved with the Commission in the course of its existence have come to the end of their work with a sense of optimism: the core values — orderliness, tolerance, and the seizing of opportunities — held by Torontonians are starting to be applied to the regeneration of the waterfront and the watersheds across the entire bioregion.

This final report treats waterfront regeneration as an opportunity that brings with it the long-term promise of a healthy environment, economic recovery and

sustainability, and maintaining a liveable community.

The likelihood that these opportunities will be realized is strengthened by an emerging sense of order as governments, working with business, labour, community leaders, and ordinary citizens, recognize the degree of discipline and tolerance that is needed: discipline to perform one's role without blocking or ignoring that played by others, and tolerance of their needs and functions as all work together to deal with the waterfront or watersheds.

The title of this final report, *Regeneration: Toronto's Waterfront and the Sustainable City*, reflects the Commission's beliefs about what has to be done and what can be accomplished. The report itself consists of four parts.

Part I, "Planning for Sustainability", describes what the Commission found about the need for regional planning and co-operation, based on the ecosystem approach, and including concepts of sustainability, health, equity, stewardship, responsibility, and the bioregion as "home". After an updated assessment of the environmental state of the bioregion, the report articulates the Commission's philosophy and principles. The Commission's own efforts as an "agent of change" — applying the ecosystem approach — are described, and their value is assessed.

Part I concludes with a discussion of the Commission's ideas for ecosystem-based planning practice. This is based on the *Planning for Sustainability* report and the working paper on cumulative effects, as well

as on practical methods for ecosystem-based planning now being used or proposed by experts in the field.

Part II, "Environmental Imperatives", deals with a range of environmental imperatives that must be considered by each level of government if it is to help restore and maintain ecosystem health.

This second section includes: a critical review of the state of the Great Lakes ecosystem and efforts at regenerating it; measures for regenerating the Lake Ontario shoreline in the Greater Toronto bioregion; an explanation of the environmental, social, and economic importance of a greenway and

trail system for the waterfront and the bioregion; and the advantages of considering winter conditions on the waterfront. It concludes with an analysis of the Don River

watershed: its past, present, and future, treating the problems and opportunities of this watershed as typical of those throughout the bioregion.

Part III, "Places", surveys the various places along the waterfront, from Burlington in the west to Port Hope in the east. It includes summaries of responses to the Commission's previous area-specific recommendations, as well as encapsulating new research and recommendations for places across the waterfront, including the need for the integration of environment, land use, and transportation on the Central Waterfront.

This section reviews the Commission's own efforts to apply the ecosystem approach in its own work, in such projects as the

Regeneration explores the opportunities to realize the promise of a healthy environment, economic recovery and sustainability, and a liveable community.

environmental audit of the East Bayfront/ Port Industrial Area, the Garrison Common Preliminary Master Plan, and the Toronto Central Waterfront Transportation Corridor Study. As well, it includes comments on the initiatives undertaken by other bodies — municipalities, conservation authorities, federal and provincial ministries, and private-sector owners and developers — now using the ecosystem philosophy and approach.

The final section of the report, “Regeneration and Recovery”, discusses issues related to implementation of the Royal Commission’s recommendations. It includes the Commission’s ideas about the nature and structure of public administration needed to manage the waterfront: no single level of government can or should be in total control of the waterfront; each should perform its role in its own jurisdiction, in partnership with others.

The section also offers the Commission’s views on partnership agreements, the issue of financing waterfront regeneration, and a practical program of co-ordinated action across the waterfront, including consolidated capital budgets for the next five-year period.

Sir Winston Churchill once said that people create buildings and then buildings create people. The same is true of the cities and regions in which we live and their waterfronts. As a small element of two governments in a democracy, the Commission offers a possible map to a better, healthier, sustainable city. In a democracy, however, the ultimate decisions — what maps to use, whether to use a particular map, whether to use any map at all — rest with and are made real by the behaviour, attitudes, and actions of its citizens.



CHAPTER 1: THE ECOSYSTEM APPROACH

THE GREATER TORONTO REGION IS, BOTH LITERALLY AND FIGURATIVELY, AT A WATERSHED. NOT LONG AGO, SOCIETY BELIEVED THAT THE ENVIRONMENT WAS ENDLESSLY ABLE TO ABSORB THE DETRITUS OF A MODERN, INDUSTRIAL-BASED ECONOMY. MORE RECENTLY, THE ASSUMPTION WAS THAT THE ENVIRONMENT AND THE ECONOMY WERE INEVITABLY OPPOSED: OPTING FOR ONE MEANT DAMAGING THE OTHER.

TODAY, HOWEVER, IT IS CLEAR THAT THE TWO, RATHER THAN BEING MUTUALLY EXCLUSIVE, ARE MUTUALLY DEPENDENT: A GOOD QUALITY OF LIFE AND ECONOMIC DEVELOPMENT CANNOT BE SUSTAINED IN AN ECOLOGICALLY DETERIORATING ENVIRONMENT.

THE WAY WE CHOOSE TO TREAT THE GREATER TORONTO WATERFRONT IS CRUCIAL. IF GOVERNMENTS AND INDIVIDUALS RECOGNIZE — AND ACT ON — THE NEED TO RESOLVE PAST ENVIRONMENTAL PROBLEMS AND FORGE STRATEGIES TO PROTECT THE WATERFRONT NOW AND IN THE FUTURE, WE WILL, INDEED, HAVE SUCCESSFULLY CROSSED A WATERSHED.

— WATERSHED 1990

A REGION UNDER STRESS

So ended *Watershed*, the second interim report of the Royal Commission on the Future of the Toronto Waterfront. These conclusions — that the Greater Toronto waterfront is inextricably linked to its watersheds, and that environmental, social, and economic conditions in this region are highly stressed, and are mutually dependent — provide the foundation for this final report.

The waterfront, the place where land and water meet, has always been a key determinant in the location of urban settlements

on the shores of Lake Ontario, starting with small forts and villages like Fort York, Fort Rouillé, and Port Hope. Gradually these grew into larger towns and cities, and are now part of the Greater Toronto region.

For thousands of years, aboriginal people created villages along the waterfront to take advantage of the wildlife of the lake and estuarine wetlands. When Europeans arrived in the 18th and 19th centuries, they were attracted by a safe harbour (now Toronto Harbour), the ready supplies of fresh water in Lake Ontario, and the abundant fish and waterfowl in the waters and wetlands. The major river valleys, like the

Humber and the Don, provided a transportation route into the hinterlands. The forests yielded game and timber, and, once cleared, fertile soils for farming.

Today, the Greater Toronto region is still dependent on the waterfront, although for different reasons.

While water transportation no longer dominates, the lake still provides fresh water for millions of residents, and receives our wastewaters. Many recreational amenities, such as boating, shoreline parks, fishing, swimming, and nature appreciation, depend directly on the waterfront location.

Among other reasons for the waterfront's importance are its neighbourhoods, home to many people. Moreover, the lake

provides abundant cold water to meet the cooling requirements of power stations. And, like waterfronts around the world, the Greater Toronto waterfront is a special *place* that draws people, fascinates them, satisfies their deep human need for contact with

water and wildlife, and provides a constantly changing panorama of views, weather, and moods.

Just as the people of the Greater Toronto region are linked to their waterfront, so the health

and life of the waterfront depend on the region. Ecologically, the waterfront is tied to its watersheds by the many rivers and creeks that flow into it, and the movements of wildlife and flows of stormwater along the valleys. Although there are many distinctive

The Greater Toronto waterfront is a special place that draws people, fascinates them, satisfies their deep human need for contact with water and wildlife, and provides a constantly changing panorama of views, weather, and moods.



neighbourhoods on the waterfront, to a great extent their future depends on regional and local municipal policies on such matters as affordable housing, community services, transit, parks, and the like. Similarly, the decline and renewal of differ-

ent economic activities on the waterfront are influenced by regional trends in manufacturing, services, and commerce.

Therefore waterfront-related strategies, plans, and programs to improve the quality of the environment, encourage community development or foster appropriate economic activities cannot be implemented in isolation: they must be undertaken in a regional context that recognizes the interdependence of the region and its waterfront, as well as the special qualities and characteristics of the waterfront itself.

It is appropriate therefore to begin this final report on the future of the Toronto waterfront by sketching some of the key environmental, social, and economic issues that must be faced in the Greater Toronto region, and by examining how they relate to the waterfront.

The geographic area considered in this overview is defined on the basis of natural boundaries, rather than political jurisdictions. This biological region, or "bioregion", comprises the major basin formed by the Niagara Escarpment on the west, the Oak Ridges Moraine to the north and east, and the Lake Ontario shoreline to the south. It is described by its natural characteristics: landforms, the lake, and the watersheds.

It should be noted that the Commission's 1990 *Watershed* report included a map

of the Greater Toronto bioregion, based on provincial information about the Greater Toronto Area (GTA), which is defined as the regions of Halton, Peel, York, Metropolitan Toronto, and Durham. However, that does not cover

the full extent of the bioregion, which extends into Simcoe and Dufferin counties in the northwest, and into Northumberland County as far as the Trent River in the east.

Information about the economic, environmental, and social conditions in the bioregion is currently collected on the basis of politically defined units, such as local municipalities, regions, the Greater Toronto Area or Statistics Canada's Toronto Census Metropolitan Area (CMA). Therefore, a great deal of what follows is based on information about the GTA or the CMA, both of which include the region's major urban centres.

Just as the people of the Greater Toronto region are linked to their waterfront, so the health and life of the waterfront depend on the region.

For many people, the shoreline exerts an almost mysterious pull: it still offers a sense of country in our towns and cities. A walk with the dog along the water's edge, skipping stones over the lake's surface, finding a unique piece of driftwood, riding a bicycle on a trail through tall grass, or fishing off some rocks or a pier: these are just some of the ways people use the waterfront.

Royal Commission on the Future of the Toronto Waterfront. Shoreline Regeneration Work Group. 1991. *Shoreline regeneration for the Greater Toronto bioregion*. Toronto: Royal Commission on the Future of the Toronto Waterfront.

Map 1.1 Greater Toronto bioregion



The Greater Toronto bioregion has important natural assets: beaches, wetlands, and bluffs along the waterfront; deep, wooded river valleys; the moraine's rolling, pastoral hills; majestic rock cliffs along the Niagara Escarpment; cool trout streams; fertile soils for agriculture; and more. Despite these blessings, there are many signs of environmental, social, and economic stress in the region. A better understanding of these stresses helps in devising strategies to deal with existing problems, and to meet future needs.

The following is a brief description of some of the challenges facing the Greater Toronto bioregion today, based on a more detailed discussion in the *Watershed* report.

POPULATION AND SETTLEMENT

The single greatest challenge facing the Greater Toronto region is probably the number of people who live here, and the expected high rate of population growth. The GTA has more than 40 per cent of Ontario's population (almost four million people) living on one per cent of the province's land base. Approximately 10 per cent of those live along the waterfront.

The GTA population has grown rapidly — from a pre-war population of about one million — and is expected to continue doing so, reaching about six million by 2021. That kind of growth places a tremendous strain on all sectors of society, trying to cope with the need to provide such basic necessities as housing, jobs, and health care, and to take care of services including transportation, waste disposal, and sewage treatment. It also threatens the quality of life that attracted many people in the first place: green spaces, recreational

opportunities, clean air and water, a relatively safe city, good economic prospects, diverse amenities, and the like.

Even more important than the actual number of people living in the bioregion, however, is the pattern of settlement, and the way in which development occurs. The City of Toronto, and the centres of many other cities and towns in the bioregion, started as compact settlements kept compact by limitations of transportation by foot and horse. With the advent of streetcars, a more spacious form of settlement spread along early transit lines.

Most of the built-up parts of the bioregion, however, were developed for a society with a high degree of car ownership. As a result, there is low-density sprawl, inefficient in its use of land, energy, and other resources.

Not only have settlement patterns encouraged inefficiencies, they have tended to ignore existing natural features and processes (e.g., significant natural habitats, hydrological systems, landforms), as well as cultural and heritage values. The results are degraded environments and a blandness that comes from blurring the distinct attributes of different places.

GREENSPACE

Many of the green spaces in the Greater Toronto bioregion — particularly those of the Oak Ridges Moraine, Lake Ontario waterfront, and river valleys — have been harmed and fragmented, and are further threatened by patterns of development that ignore natural features and processes.

More than half the original wetlands in the bioregion have been drained for farms, bulldozed for housing or infilled to provide land for industry or transportation.

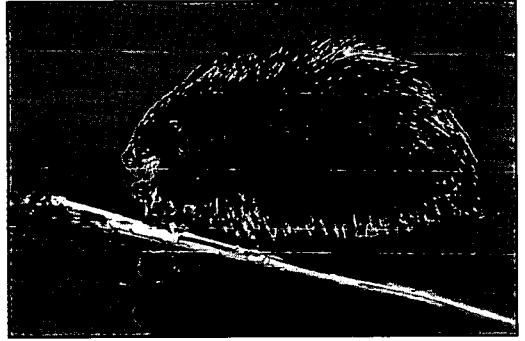
Most of the remaining wetlands have been debased by upstream pollution or surrounding land uses, and are subject to intense pressure from increased urbanization. Waterfront marshes at the mouths of rivers and creeks are at particular risk, because they are susceptible to changes in the flows, quality, and temperature of water from the watersheds, as well as to waterfront development, such as conversions to harbours and marinas.

Because of widespread forest clearing in Ontario in the past 200 years, only one-fifth of the GTA remains forest-covered today — and that includes parks, Crown land, conservation areas, and private woodlots. There is disturbing evidence that the trees still remaining — like their urban cousins — are under significant stress from drought, salt, and other pollutants.

WILDLIFE

Ever since the first European settlement, there has been a dramatic decrease in the diversity and abundance of wildlife in the bioregion, and remaining wildlife populations are under stress. The primary causes have been, and continue to be: loss, alteration, and fragmentation of habitat; fishing and hunting; pollution of ecosystems by excess nutrients and persistent chemicals; and the introduction of non-native animal and plant species.

As a result of these stresses, some species, like the passenger pigeon, have become extinct. Others, including the timber wolf, black bear, lynx, and elk, are no longer found in this bioregion. An increasing number of species are becoming rare: in the GTA today, there are as many as 114 provincially rare kinds of plants, reptiles, amphibians, mammals, and fish.



Muskrat

WATER SUPPLY

Most residents of the Greater Toronto bioregion get their water from Lake Ontario. However, a large part of York Region, including rapidly growing communities like Aurora and Newmarket, as well as the northern parts of Halton, Peel, and Durham regions, depends primarily on groundwater supplies.

This has caused serious water quantity and quality issues: first, there is evidence that in several areas, aquifers are actually being “mined” — water is being withdrawn faster than it is being naturally replenished. Second, in some areas, groundwater has been contaminated by a variety of sources including agricultural and industrial chemicals, leachate from landfills, road salt (groundwater in the lower Don Valley is as saline as seawater), and inadequate septic systems. Third, groundwater provides about 40 per cent of the water flow in the bioregion’s rivers and streams, making them vulnerable to changes in water flows and purity. All three issues may be critical, limiting future growth in groundwater-dependent regions, unless water is piped from Georgian Bay or Lake Ontario.

Even in the areas supplied by Lake Ontario water, it is becoming evident that we need to reduce total consumption — not

because of any lack of water (there is plenty in the lake), but there are the mounting costs of treating the water before it is used and of treating large volumes of sewage, as well as the impact on the environment of streams, rivers, and the waterfront that comes from stormwater and combined sewer overflows.

WATER QUALITY

As explained earlier, the Metro Toronto waterfront is one of 43 “hot spots” around the Great Lakes, identified by the International Joint Commission as needing Remedial Action Plans (RAPs) because of water quality problems. In the Metro Toronto RAP area, bottom sediments are contaminated, organisms living in them show bioaccumulation of toxic substances, fish of some species have such high levels of contaminants they cannot be safely eaten by humans, aquatic life is stressed from pollution, and swimming beaches are frequently closed during the summer.

For the most part, sewage treatment plants in the bioregion meet provincial standards for concentrations of different pollutants they discharge, but they contribute massive loads of nutrients, heavy metals, and organic chemicals to the waterfront. It is clear that substantial improvements are required to most existing sewage treatment facilities, just to ensure that the wastes of the present residents of the bioregion are adequately handled. In addition, further capacity will be required to treat wastes generated by the expected increases in population over the coming decades.

The condition of the 60 or so rivers and tributaries in the Greater Toronto bioregion varies considerably. Although a few are still fairly healthy, many have been

seriously degraded. Forest cutting has removed shade and caused banks to erode. Pesticides, fertilizers, and topsoil from farms, as well as a potent cocktail of rain-washed pollutants from urban areas, flow into the rivers. In some municipalities, when there are heavy rains, sewers overflow into rivers and the waterfront, carrying a bacteria-laden mixture of stormwater and sewage that means beaches have to be posted to warn people not to swim.

AGGREGATES

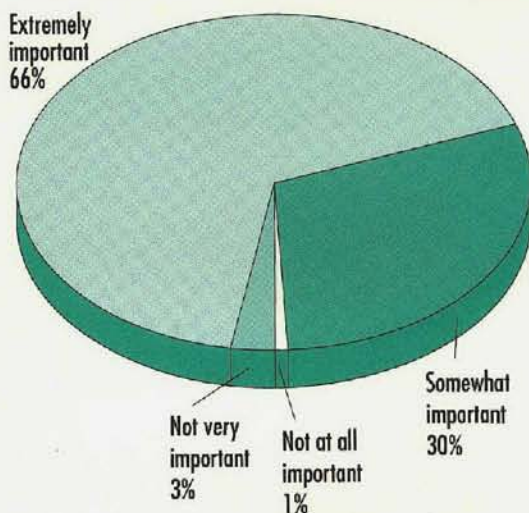
Glacial deposits of sand and gravel in the bioregion provide extensive aggregate resources, a fifth of those produced in the province. It is ironic, indeed, that the areas richest in aggregates — the Niagara Escarpment and the Oak Ridges Moraine — are the most sensitive to the extraction process. Removing aggregate from the Niagara Escarpment threatens its integrity as a landform and its natural habitats, while doing so in the moraine interferes with its hydrogeological functions as an aquifer and the source of many rivers.

SOILS

In some parts of the bioregion, soils are contaminated with heavy metals and organic chemicals, often the legacy of industrial activities, lakefilling, transportation or waste dumping. Although the extent of soil contamination from industrial activities throughout the region is not known, there is reason to believe that many former and existing industrial and refinery sites are contaminated as the result of poor handling of hazardous materials in the past.

In this century, significant lakefilling has been carried out to create land for industry, transportation corridors, ports,

Importance of Water Clean-Up



Two-thirds of the respondents believe it is "extremely important" that a major effort be made to clean up the Lake Ontario waterfront and rivers like the Don, the Humber, the Rouge, and the Credit so people can safely swim and fish in them again.

Source: Environics Poll, 1991.

N.B. Due to rounding figures may not add to 100.

and parks. Until very recently, and particularly along the central Toronto waterfront, this lakefilling included contaminated materials from construction sites, sewage sludge, incinerator refuse, and municipal garbage.

Inland, there are as many as 276 abandoned landfill sites throughout the GTA. Because waste dumping was virtually unregulated until about 20 years ago, there is little information about what may have been dumped in these sites or, for most of them, whether pollutants are now leaking into groundwater or nearby streams.

AIR

Air quality in the Greater Toronto bioregion is influenced by many sources, some of which are hundreds of kilometres

away. For example, trace toxic organic chemicals can be carried long distances from other parts of Ontario, the United States, and beyond, and most chemical precursors of smog (ground-level ozone) come from American sources. Air quality is also influenced by activities in the bioregion itself — particularly from automobiles, coal-fired generating stations, incinerators, and industry, as well as from furnaces for heating homes, offices, and other structures.

Over the past few decades, levels of sulphur dioxide, particulates, carbon monoxide, and some metals have been declining, because of a combination of regulations controlling the sulphur content of coal and gas, a shift from coal and oil to natural gas, and replacement of leaded with unleaded gasoline. However, levels of nitrogen dioxide and volatile organic compounds (contributors to acid rain and ozone) have remained fairly constant and at high levels. Improved control of the main sources of these pollutants — automobiles, power plants, and certain industries — has been offset by increased numbers of automobiles on the roads.

For the last 10 years, levels of ground-level ozone have remained fairly constant, and are quite uniform across southern Ontario. However, they are highest in the City of Toronto, where they regularly exceed health-related guidelines on warm, sunny days in spring and summer.

ENERGY

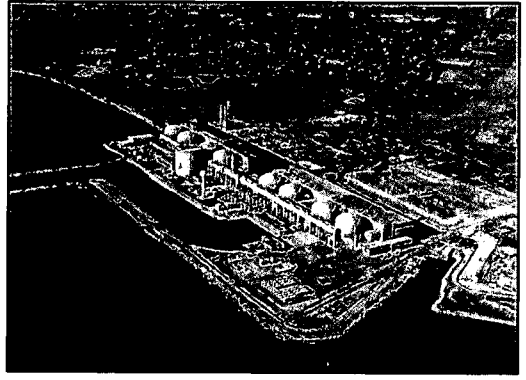
Canadians consume more energy per capita than any other people in the world. The high proportion of Canada's population and industrial base in the Greater Toronto bioregion may make this one of the most energy-intensive regions in the world. Approximately 275 gigajoules of energy

per person per year (the equivalent of 8,000 litres of gasoline) are consumed for transportation, heating/cooling, lighting, and industrial processes combined.

Some of the energy we consume is generated by the coal-burning Lakeview Generating Station in Mississauga and by the Pickering Nuclear Station. Once the Darlington Nuclear Station comes on line, a greater proportion of our electricity will be generated in the Greater Toronto bioregion. At the present, however, the bioregion is largely dependent on outside sources of electricity — on energy from distant nuclear and hydro plants, as well as on oil and natural gas brought by tanker, truck, and pipeline from other provinces and countries.

Because so much of the energy we use comes from outside the bioregion, we experience few of the direct effects of energy extraction and transformation. We do, however, suffer the consequences of energy consumption: burning fossil fuels to generate heat and electricity, and to power cars and trucks, releases greenhouse gases and contributes to rising global temperatures, acid deposition, and local air pollution. While nuclear energy avoids most of those air pollution problems, it raises other environmental, economic, and social issues — including the high costs of building nuclear reactors, uncertainty about their long-term safety and viability, health risks to people working in and living near nuclear stations, and how to dispose of nuclear fuel wastes.

Meeting our future energy needs will probably involve conservation programs and alternative energy supplies. It will be cheaper and more environmentally sound to conserve power than to build new generating plants. Further financial and environmental savings may be achieved through



Pickering Nuclear Power Station

alternative energy sources such as wind and solar power. Co-generation — using heat normally wasted when electricity is produced for industrial processes and space heating — may also play an important role in reducing the impact of our energy-consuming lifestyles.

TRANSPORTATION

In the past 10 to 15 years, very little has been invested in transportation infrastructure in the Greater Toronto bioregion, while transportation demand has far outstripped the supply of new roads, transit facilities, and parking spaces. The result is that roads are congested, commuting takes longer, energy is used inefficiently, air pollution increases, and people suffer more stress.

The volume of traffic has been growing, and is expected to continue to grow, at a rate of six per cent per year. If that happens, total traffic volumes will triple by 2011. The Province has few plans for major new highways in the area (although they will build Highway 407, complete Highway 403, and build a new Highway 6), so future transportation needs will have to be met in other ways, if severe gridlock is to be avoided.

At present, 64 per cent of all GTA commuters drive cars to work or school; 25 per cent use public transit; and 10 per cent walk or cycle. The percentage of transit use in the City of Toronto is much higher: in the downtown core, for example, 47 per cent of commuters use public transit.

If current trends continue, commuting between homes in one part of the Greater Toronto bioregion and jobs in another will continue to increase. In 1986, close to 270,000 commuter trips were made each day into Metro Toronto from the four surrounding regions. By 2011, this could reach nearly 500,000. Unless there is dramatically less dependence on cars for making these trips, and more people are able to work close to home, the road system will be unable to cope with traffic needs.

Transit systems must have a population density of at least 4,000 people per square kilometre (10,360 people per square mile). This is achieved in the central city, but densities in suburban regions are much too low. The density is 6,000 people per square kilometre (15,540 people per square mile) in the City of Toronto, and 3,500 (9,065 people per square mile) across Metro. But in developed areas outside Metro, the population density is only 2,100 (5,439 people per square mile). Unless densities in outlying areas increase enough to support public transit, or industry and commerce decentralize to allow people to live near their workplaces, the Greater Toronto bioregion could become “California North” — a nightmare of too many cars going too slowly on too few roads.

GARBAGE

Canadians produce more garbage per capita than the people of any other nation.

Every year, homes, institutions, industries, and commercial establishments in the GTA produce 4.5 million tonnes (5 million tons) of garbage — enough to fill six Skydomes to the roof. With existing landfill sites nearly at capacity and due to close in 1993 or 1994, the question of where to put all this garbage has become one of the most emotional and pressing in the bioregion.

To date, Halton is the only region in the GTA to successfully site a new landfill. Because the Province believes that the remaining regions should deal with their waste within their own borders, it created an Interim Waste Authority in June 1991 to search for landfill sites for the regions of Peel and Durham, and for the combined York Region and Metro Toronto.

Increased efforts at waste reduction, recycling, and composting programs, as well as higher tipping fees, are reducing the total amounts of waste going to landfill sites in the area. Diversion from disposal sites ranges from about six per cent in York Region to 21 per cent in Peel — short of the 25-per-cent reduction target set by the Province for 1992.

Increased tipping fees are having another effect: thousands of tonnes of privately collected garbage are being trucked to cheaper disposal sites elsewhere in the province and in the United States, creating losses of waste-disposal revenue in the bioregion, adding unnecessary air pollution from extra truck traffic, and raising questions about the ethics of transporting one community’s garbage to another.

DEMOGRAPHIC TRENDS

The traditional structure of families in the bioregion, like that of families everywhere, is changing: there are more single-parent families, smaller family sizes, and an

increasing number of dependent seniors. The age profile of the population is also shifting: there are a declining proportion of children and more older people. In 1991, 19 per cent of the GTA population was over 55, a figure that is expected to increase to 32 per cent by 2031.

The cultural diversity of the Greater Toronto bioregion is one of its most distinguishing characteristics: there are some 80 ethnic groups in the area. More than a third of all immigrants to Canada settle in the region, bringing with them special needs for language training and assistance in integrating into Canada's social and economic life.

These trends make increasing demands on communities and governments in the Greater Toronto bioregion. For example, a better supply of suitable housing is needed for different age groups and family types; there must be better transit networks; and social services and health care systems must be expanded.

SOCIAL NEEDS

The bioregion's demographic trends affect every part of it, from downtown Toronto to the older suburbs of Metro and the new suburbs of the outlying regions of York, Durham, Halton, and Peel. Similarly, social problems — poverty, homelessness, hunger, substance abuse, family violence, suicide — are no longer limited to the urban core, but strain the resources of municipal governments and non-profit groups throughout the region. The recession has exacerbated these problems, with increasing numbers of people competing for limited

social services, which are, in turn, being constrained by funding cutbacks.

Access to services is becoming an increasingly serious problem, for a variety of reasons. People from ethnic groups are often limited by cultural and language barriers. In the suburbs, lack of public transit means physical isolation, especially of women. Sometimes, appropriate services are simply not available, or have long waiting lists.

Thousands of people in the Greater Toronto bioregion are either homeless or living in overcrowded conditions. Causes include a shortage of suitable houses and apartments and an inability to pay high prices or rents. There are an estimated 20,000 homeless people in Metro Toronto alone; in 1986, nearly 28,000 families,

seniors, and single people were on the provincial waiting list for geared-to-income non-profit housing.

A wide variety of housing types is avail-

able in the Greater Toronto bioregion with Metro offering the broadest range and about 76 per cent of all social housing in the GTA. The Region of York has the least diversity: 80 per cent of its housing comprises single-family detached houses.

ECONOMY

The Greater Toronto region has traditionally been described as Canada's "economic engine", generating nearly one-fifth of the nation's income, with per capita incomes that are approximately 25 per cent higher than the national average.

In the past 15 years, the Greater Toronto region has been Canada's pre-eminent job-producing area. According

Thousands of people in the Greater Toronto bioregion are either homeless or living in overcrowded conditions.

to a paper prepared for the Commission by University of Toronto economic geographer Meric Gertler (1990), titled *Toronto: The State of the Regional Economy*, total employment in the Toronto Census Metropolitan Area (CMA) grew by an impressive 43 per cent between 1976 and 1990. Even higher growth rates — exceeding 70 per cent — occurred in community, business, and personal services, and in finance, insurance, and real estate. Although manufacturing remained a significant part of the economy, employment growth was slower there than in the service sector, reflecting a relative decline in the importance of manufacturing employment to the regional economy.

But there are signs of economic distress in the bioregion. The current recession has hit hard here, as in the rest of the country. There have been substantial declines in output and employment, and many observers suggest that the current downturn will be deeper and longer-lasting than first predicted. That makes it difficult to predict the future of the regional economy: its effects are mingled with other changes, more structural and fundamental, including the relative decline in manufacturing, the Free Trade Agreement with the United States (and the possibility that there will be a North American Free Trade Agreement, which will include Mexico), and imposition of the Goods and Services Tax.

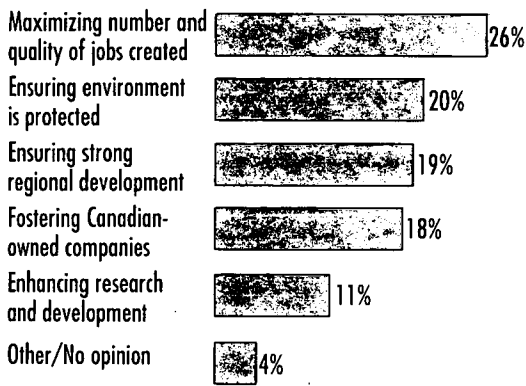
One of the most notable trends of the past two decades is the decentralization of manufacturing activity from the City of Toronto — first to Metro's outer fringes and more recently to outlying regions in York, Durham, and Peel. However, it is impossible to predict whether this trend will continue, or whether industries will move out of the bioregion to other parts of Ontario, or go south to the United States or Mexico.

At the same time as manufacturing has declined, office-based employment, particularly in financial services, has grown in the City of Toronto and other urban centres; but there are different opinions about the extent to which this growth will resume after the recession. Some economists see the boom in financial services as a one-time event, made possible by financial deregulation, while others feel that the sector has considerable potential for continued growth, because: ongoing innovations in financial services products are meeting the needs of more sophisticated investors and borrowers; as the baby boom generation ages, there will be more demand for a variety of new savings vehicles; and many financial services are not easily automated and offer continued employment growth.

Another significant factor is the high quality of life the Greater Toronto bioregion can still offer, which attracts people in the financial services sector. This is in sharp contrast to New York City — Toronto's major competitor in the field — which is reaching limits to financial service growth, because of a combination of impending labour shortages, high house prices, decaying infrastructure, a deteriorating local education system, and an increasingly strained quality of life. Those responsible for the economy of the Greater Toronto bioregion would be well advised to consider New York's situation, which offers important lessons about the social, environmental, and cultural milieu necessary for sustained prosperity.

While some economists are optimistic about future increases in the office-based economy in the Greater Toronto bioregion, its role in stimulating the entire economy may be more limited than the one played by manufacturing-sector growth after the last

Most Important Consideration in a GTA Development Strategy



One-fifth of the respondents believe that despite the current recession, environmental protection should be a major part of an economic development strategy.

Source: Environics Poll, 1991.

recession. This is mainly because the intra-regional multiplier effects (purchases from other parts of the economy) from financial services do not even remotely match those from manufacturing industries.

These and other reasons should induce caution among those who would assume that, once there is a “recovery” from recession, it will herald an automatic return to business as usual. In fact, the major restructuring now occurring may result in quite a different economic picture, in terms of the key sectors, their relative rates of growth, the way they are distributed in the bioregion, and the types and numbers of jobs available.

CONCLUSIONS

These examples indicate the economic, social, and environmental pressures being exerted on the Greater Toronto bioregion, and make clear the fact that we can no longer take economic prosperity or quality

of life in Greater Toronto for granted. Although it has many advantages, the bioregion’s future health and environmental sustainability will depend on how we manage the assets we have: in addition to remediating problems caused by past activities, we must develop strategies to encourage more environmentally responsible lifestyles and development patterns, to nurture a vibrant regional economy, and to address pressing social needs.

It is also clear that tackling such issues means taking different approaches to problems, to decision-making, and to the way we get things done. It won’t be easy. The Greater Toronto bioregion is governed by five regional municipalities, 53 local municipalities, four counties, six conservation authorities, and numerous federal and provincial ministries, departments, boards, agencies, and commissions. In an era when it has become clear that governments cannot solve environmental, social, and economic problems by themselves, the thousands of businesses and four million residents of the bioregion also have a role to play.

As the Royal Commission suggested in its *Watershed* report, the ecosystem approach appears to offer real and constructive alternatives to traditional ways of acting. The Commission has found the approach extremely helpful, as applied to its own work — a point that subsequent chapters of this final report will make clear. But, first, some observations about the ideas embodied in the ecosystem approach, and their relevance to the Greater Toronto waterfront and bioregion.

ECOSYSTEMS

The ecosystem approach is both a way of doing things and a way of thinking, a

renewal of values and philosophy. It is not really a new concept: since time immemorial, aboriginal peoples around the world have understood their connectedness to the rest of the ecosystem — to the land, water, air, and other life forms. But, under many influences, and over many centuries, our society has lost its awareness of our place in ecosystems and, with it, our understanding of how they function.

What is new in the 1990s is a growing recognition that, unless we regain an awareness of humans as being part of ecosystems, and unless we respond to that awareness by changing the processes and criteria of decision-making, we will not be able to improve, and will even lose, the quality of life for which so many generations laboured.

In exploring the ecosystem approach, the Commission found that it integrates ideas from a variety of concepts and movements concerned about environmental and human well-being. Sporting different labels, but with many common elements, these include bioregionalism, green or eco-cities, the liveable metropolis, healthy communities, sustainable development, and the conserver society. A careful consideration of the philosophy behind all these concepts leads us to identify five fundamental themes of the ecosystem approach:

- the ecosystem as “home”;
- everything is connected to everything else;
- sustainability;

- understanding places; and
- integrating processes.

THE ECOSYSTEM AS “HOME”

The ecosystem concept is an extension of the traditional view of the environment as all that surrounds us and influences us: something “out there”, in the same way that a house comprises bricks and mortar. In contrast, an ecosystem is a “home”, with a spiritual dimension transcending its physical structures. Ecosystems are dynamic, interacting, living systems; humans are part of them, not separate.

The “home” analogy is crucial to understanding our roles

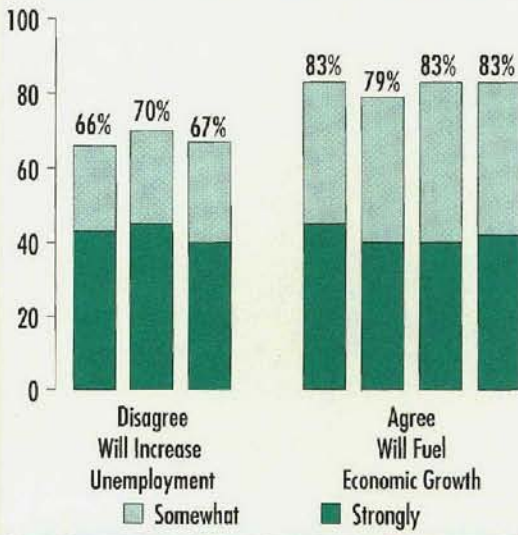
and responsibilities as co-habitants of ecosystems. Most people conceive of home as a special place providing more than shelter and a place to sleep. We cherish and care for our homes, and share them with our

families, friends, and pets. Similarly, ecosystems provide for both our physical and our spiritual needs; in turn, we are responsible for part of maintaining and protecting their health. In the words of Professor Bill Rees of the University of British Columbia, “people must acquire in their bones a sense that violation of the biosphere is a violation of self”.

The life of each of us is a fleeting moment in the history of the biosphere; we are stewards of the land and waters, but for a short time only. How do our lives affect our co-habitants — other people, wild animals, plants — in Toronto, in Canada, and in other countries? What legacy will we

Unless we regain an awareness of humans as being part of ecosystems, and unless we respond to that awareness by changing the processes and criteria of decision-making, we will not be able to improve, and will even lose, the quality of life for which so many generations laboured.

Economic Impact of Environmental Protection



Two-thirds of Canadians disagree that environmental protection will harm employment in Canada. Four-fifths of Canadians believe environmental protection will fuel economic growth.

Source: Canada, House of Commons, Standing Committee on the Environment, 1991. Minutes of Proceedings, no. 6A, 26 September.

leave for the generations to come? These questions were addressed by the Brundtland Commission on Environment and Development (1987), which concluded in *Our Common Future* that:

The Earth is one but the world is not. We all depend on one biosphere for sustaining our lives. Yet each community, each country, strives for survival and prosperity with little regard for its impact on others. Some consume the Earth's resources at a rate that would leave little for future generations. Others, many more in number, consume far too little and live with the prospect of hunger, squalor, disease and early death.

It is difficult, if not impossible, for most of us to see how, as individuals, we can

even begin to respond to these global issues. However, there is a great deal of value in the environmental imperative to "think globally, act locally". It is there we must begin thinking about the Greater Toronto waterfront and its bioregion, guided by principles of stewardship and equity.

This implies caring for land, water, air, and living beings, including humans, other animals, and plants, in order to ensure their health in the long term as well as for today. It means that those with power and opportunities have a responsibility to act in ways that respect the needs of others, and the limits of the physical environment. And it means working to ensure that everyone has access to opportunities for a good quality of life — education, housing, jobs, social services, recreation, safety, a supportive community, attractive places, and a healthy environment.

The ecosystem concept recognizes that you are new, yet not new. The molecules in your body have been parts of other organisms and will travel to other destinations in the future. Right now, in your lungs, there is likely to be at least one molecule from the breath of every human being who has lived in the past 3,000 years; the air around you will be used tomorrow by deer, lake trout, mosquitoes, and maple trees. The same is true of water, sunshine, and minerals. Everything in the biosphere is shared.

Christie, W. J. et al. 1986. "Special contribution on: managing the Great Lakes Basin as a home." *Journal of Great Lakes Research* 12(1).

EVERYTHING IS CONNECTED TO EVERYTHING ELSE

A key to understanding ecosystems is to recognize that everything is connected to everything else. Therefore, we must examine the entire web of links among and within elements of ecosystems: air, soils, water, wildlife, land uses, communities, economic activities, and the like. By doing so, we can begin to understand how the parts affect, and are affected by, one another, and we can appreciate the complexities of the whole. For example, water pollution along Toronto's waterfront represents the combination, or cumulative effects of, many influences — from development in the headwaters of the rivers, to stormwater management in the suburbs, to sewage treatment on the lakefront, to lakewide inputs from the Niagara River.

In viewing a city as an ecosystem, we can look at supply, flows, transformation, storage, and disposal of energy and materials. For example:

- What energy, materials, capital, and labour go into the urban ecosystem?
- How are these transformed to provide services and produce goods?
- What are the waste by-products of our goods and services: heat, pollution, garbage, etc?
- How are these waste products managed? For example, is waste from one process used as the raw material for another, or is it simply discharged into the environment?

As a result of that kind of analysis, we can identify ways in which human activities can be reintegrated with ecological processes to ensure more efficient use of resources,

reduce wastes and pollution, increase recycling, and conserve energy — measures that offer both environmental and economic benefits. There will have to be a shift in our thinking about environmental management: from the current emphasis on regulation and remediation, to a more proactive approach that focuses on preventing damage rather than fixing up problems after the fact. “End-of-pipe” pollution control and restoring already damaged ecosystems are clearly more expensive and less effective than dealing with problems at source, before they become problems.

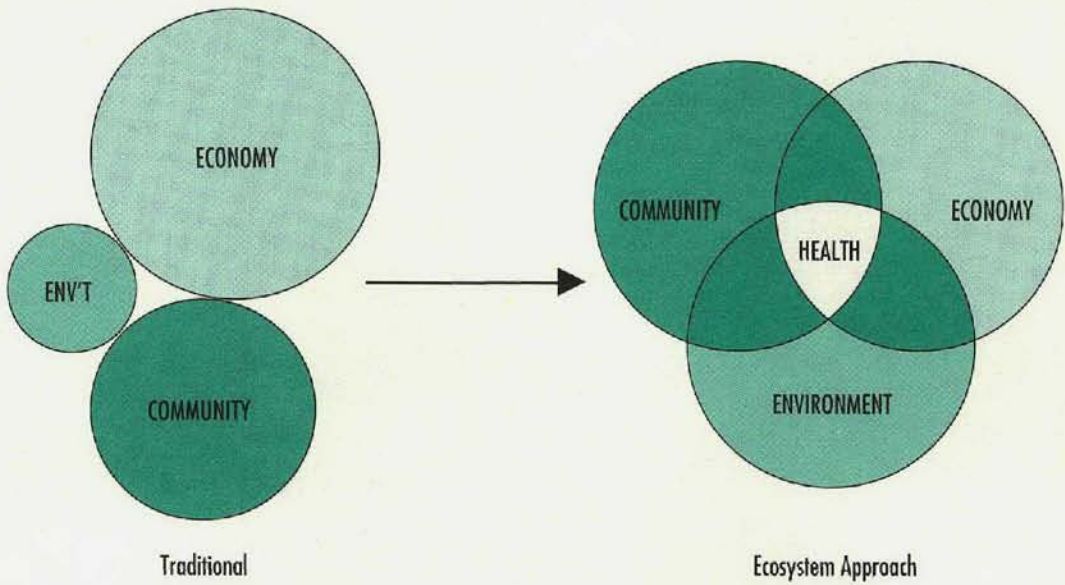
Relationships within ecosystems can best be visualized as three interlocking circles: environment, community, and economy. However, most decision-making separates the three, with little understanding, for example, of the effects of economic decisions on community needs or environmental health. Too frequently, there is more emphasis on economic and social issues than on the environment.

The challenge now is two-fold: to understand the links in the ecosystem, and to redress the balance among them.

Therefore, studies and plans must be undertaken in an integrated way, examining the links among economic, social, and environmental matters. This is a major departure from current processes, which tend to regard environmental concerns as a separate area of study: the “green chapter” in a report unconnected to the remainder.

It is encouraging to note that efforts are now being made to recognize, and respond to, these links. For example, the “healthy city” concept is based on the realization that individual human health depends on many factors beyond the health

Figure 1.1 The Shift from Traditional to Ecosystem-Based Decision-Making



care system and medical treatments. As a recent report by the Canadian Medical Association (1991) explained:

Whereas in the 1970s there was a new emphasis on the effect of personal lifestyle choices on our health, in the 1990s it is becoming clear how seriously our collective lifestyle choices, and their impact on the environment, can threaten our health and well-being.

It is becoming increasingly clear that our health depends on the quality of the social, physical, and economic environments, and on equal access to the opportunities they provide: a "healthy city" is defined as one designed, built, and managed to truly contribute to the health and well-being of all its inhabitants. As Figure 1.1 shows, that means providing:

- an environment that is viable (i.e., supports human and non-human life), liveable, and sustainable;

- an economy that is equitable, sustainable, and adequately prosperous; and
- a community that is liveable, equitable, and convivial (Hancock 1990).

Since the 1980s, Toronto has played a key role in developing the healthy city concept and promoting it around the world. In 1989, in response to a report called *Healthy Toronto 2000* (1988), a Healthy City Office was created by unanimous Council decision, and given the mandate of working in partnership with government departments and the community to improve the quality of life in the City. The office focuses on three major issues — social equity, environmental protection, and community empowerment — and has established a wide range of programs — including those related to affordable housing, urban gardening, healthy workplaces, literacy, minimizing automobile use, main-street housing, report cards on the state of the city, and others.

Looking at economy/environment/community relationships from another perspective, communities must consider the quality of life they can offer as an important factor in attracting and keeping businesses, jobs, and a strong tax base. Table 1.1 shows how quality of life in a healthy community depends on a constellation of characteristics, including a good educational system, access to health care, economic opportunities, low crime rates, recreation and cultural facilities, clean air and water, and green space.

Just as municipalities are starting to consider the role of a healthy community in ensuring economic vitality and satisfying social needs, the business sector is beginning to recognize the value of maintaining environmental health. For example, in their book *Green Is Gold*, Patrick Carson and Julia Moulden (1991) advance a variety of compelling reasons for businesses to “go green”. Among them:

- the rise of the “neo-traditionalist” consumer whose values are based on both the traditional and the new, and who seeks goods that are well-made, honestly presented, and reliable, and questions the environmental and moral implications of product choices;
- the power of local communities to demand clean industries and the NIMBY (“not in my backyard”) syndrome in relation to undesirable facilities, such as landfill sites;
- tougher government regulations; and
- the significant bottom-line benefits that result from getting more out of less, reducing wastes, and preventing pollution.

Table 1.1 Examples of Indicators of Quality of Life for a Healthy Community

Economic Indicators

- Average income level
- Availability of employment
- Diversified economic structure

Social Indicators

- Availability of health care
- Availability of social support systems
- Good educational opportunities
- Cultural and recreational facilities
- Adequate affordable housing
- Crime rate/personal security
- Availability of public transit
- Access to adequate food

Environmental Indicators

- Clean air, soils, and water
- Land-use patterns in relation to ecological processes
- Diverse, healthy wildlife habitats
- Noise
- Safety from floods, erosion, and other hazards

Aesthetic Indicators

- Community design — sense of place
- Connections with cultural and natural heritage

Institutional Indicators

- Public involvement in making community decisions
- Role of volunteers
- Role of community organizations
- Integration among jurisdictions and agencies

Source: Adapted from Alberta. Urban Environment Subcommittee. 1988. *Environment by design: the urban place in Alberta*. N.p.: Alberta. Environment Council of Alberta.

A view has long been held that we must choose between jobs and the environment and there have been cases in which new environmental regulations have been the “straw that broke the camel’s back” for an industry already facing difficulties. More realistically, however, a growing number of companies benefit from their “greenness”, and are using it as a strong competitive edge over “dinosaurs” that refuse to change their

ways. There is ready evidence of this trend in the products, services, and advertisements of companies that range from diaper manufacturers to food stores.

Carson and Moulden point out that our society currently treats nature as it treated workers 100 years ago when business did not calculate the cost, nor the benefits, of a healthy and socially secure work force. In the same way, society often fails to include the costs and benefits of a healthy and secure environment. Instead, we all bear the costs of diminishing resources, disappearance of valuable species, health problems, global warming, polluted rivers, unswimmable beaches, and the like. Fortunately, there is a growing understanding of the need to build true environmental costs into doing business in every economic sector.

Environmental costs may be added to those of production — for equipment or processes necessary for meeting stricter environmental regulations — and can then be passed on directly to the consumer. Similarly, as waste disposal costs escalate, prices of goods and services may go up. Alternatively, new uses for wastes can be found, with one company's garbage becoming another company's resource. Some current examples on the waterfront include the recycling of building materials generated by redevelopment of the Daniel's site in Etobicoke, and the Harkow proposal to build a recycling centre in the Port Industrial Area to sort and reprocess various construction materials.

Subsidies of several kinds can mask the true costs of providing services. For example, water rates paid by municipal customers in Ontario account for only 65 per cent of the money spent on providing water, treating sewage, and managing

stormwater; the balance comes from provincial subsidies, property taxes, and subdivision charges.

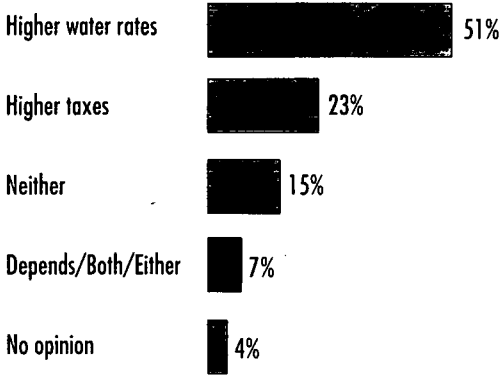
In addition, much more money is needed to replace and upgrade inadequate infrastructure, and meet today's expectations of a clean environment. A 1991 report by the Province's Municipal/Industrial Strategy for Abatement (MISA) Advisory Committee concludes that the full cost of providing improved municipal water and sewer services, rather than being the present average bill of about \$70 per person per year, is actually about \$250 (still considerably less than typical household energy costs). An additional benefit of full cost pricing is that by helping consumers to recognize the true value of water and sewer services, it would lead to water conservation and more careful management of pollution sources.

Right now, as we enter a more technologically intensive economic system, we have unparalleled opportunities to build high environmental quality and sustainability standards into such sectors as computers, electronic components, instrumentation,

One of the dilemmas addressed by the "sustainable development" perspective is that modern industrial economies have dealt so effectively with the scarcity of food, manufactured goods, and services in developing their societies that they have created new scarcities of clean earth, clean air and clean water.

Manitoba Environment. N.d. Discussion paper: harnessing market forces to support the environment. Winnipeg: Manitoba Environment.

Paying for River and Waterfront Improvements



Half of the respondents favour higher water rates to fund improvements to Toronto's rivers and waterfront.

Source: Environics Poll, 1991.

health and medical supplies, and communication. As discussed in a recent report, *The New "Big Picture"* (Nuala Beck & Associates 1991), considering likely environmental implications of these sectors now is going to be much easier and more effective than imitating our current approach to most industries: attempting to regulate their activities, and cleaning up the degradation they cause — after they are well-established.

In his book, *Competitive Advantage of Nations*, Michael Porter (1990) concludes that environmental protection measures can benefit national economies. His research shows that countries with the most rigorous environmental requirements often lead in exports of affected products; he says that the right kind of regulations — those that stress pollution prevention rather than simply abatement or clean-up — can result in significant innovations with both environmental and financial benefits: companies are stimulated to develop less polluting or more resource-efficient products that save

industries money at home and are highly valued abroad.

SUSTAINABILITY

Another key concept inherent in the ecosystem approach is that, to have lasting value, efforts at ensuring health, stewardship, and equity must be sustainable: we must accept, and act on, the aphorism that we have not inherited the earth from our ancestors, but are borrowing it from our grandchildren.

Mohawk culture effectively integrates that perspective into decision-making by appointing someone to represent the seventh generation — to consider how the decisions being discussed today may be viewed seven generations from now. Given this kind of thinking, municipal decision-making (among other kinds) would have to take into account time well beyond the usual three or five years of a politician's term of office — beyond even the 10 to 20 years usually adopted as the context for official plans.

The idea of sustainability was most recently popularized by the Brundtland Commission on Environment and Development. It concluded that the only way to address issues associated with global development — poverty, hunger, and disease — at the same time as we deal with environmental degradation of the biosphere, is to pursue "environmentally sustainable economic development": development that meets present needs without compromising the ability of future generations to meet their own needs.

The Brundtland Commission report, made to the UN in 1987, evoked a proliferation of responses, reflected in growing international, national, provincial, and local awareness of the issues, at least in terms of

words: speeches, papers, books, and reports abound. Although these can be important precursors, they are not change itself. That can be measured only by what is actually done.

The evidence is that we are taking relatively tiny steps (curbside recycling, for example), not the enormous strides required (changing to less consumption-focused lifestyles).

While there is general consensus that sustainability is a vital goal at all levels — global, national, provincial, and municipal — there is much less agreement about what it means and how it can be reached.

It has been suggested that the Brundtland Commission was deliberately vague on this point, judging that the best way to put these new imperatives on the international agenda was to sell the idea that we can eat our cake (economic development) and have it too (a healthy environment).

But some of the tough implications of sustainable development were left undescribed. The Brundtland Commission suggested more rapid economic growth in both industrial and developing countries, in order to raise consumption standards in poorer nations. However, this ignores the sense that there will have to be fundamental changes in the way we use energy and materials, if we expect ecological processes and biosphere resources to provide First World living standards for a global population.

Understanding the ways in which ecosystems work makes it possible to understand the limits of the biosphere. Living

organisms depend continually on energy, water, and nutrients. The water and nutrients (carbon, nitrogen, minerals, among them) cycle throughout the ecosystem: they are used, stored, transformed, and repeatedly reused. By contrast, energy, supplied by the sun, gradually dissipates as it is transferred from one organism to the next through the food chain. Thus, the growth of ecosystems is limited by the availability of materials and the rate of energy supplied by the sun.

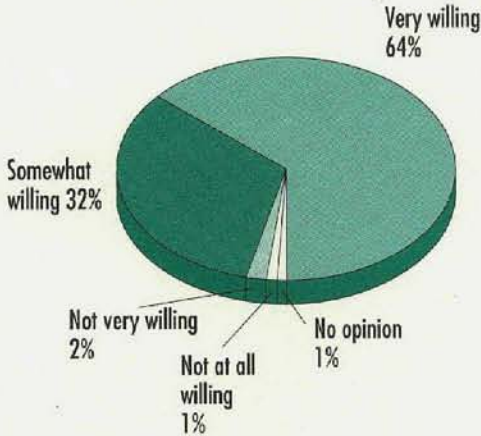
On the other hand, many human economic systems are based on non-renewable forms of energy (oil, gas, and coal). The materials they use are not continually recycled but eventually wind up as pollutants in air, water or soil, or discarded in mountains of consumer waste in landfill sites.

All this places further stress on ecosystems, reducing their productivity and ability to support life.

Perhaps we should look more closely at the related concepts of growth and development: if limitless quantitative growth is impossible, we should strive for development that offers “qualitative change in a physically non-growing economic system in dynamic equilibrium with the environment” (as described by Herman Daly and John Cobb (1989) in their book, *For the Common Good*). In other words, we have to sustain natural capital — forests, foodlands, clean air and water, minerals — and live off the interest. While that may sound simple, it in fact means making a fundamental shift from a consumer to a conserver society, reducing consumption and learning to do more and better with less.

“*Environmentally sustainable economic development*”: *development that meets present needs without compromising the ability of future generations to meet their own needs.*

Willingness to Change Lifestyle



Two-thirds of the respondents are "very willing" to make major changes in their daily lifestyles to help achieve an environmentally sustainable economy; a further third would be "somewhat willing" to make these changes.

Source: Environics Poll, 1991.

How do these issues affect the residents of the Greater Toronto region?

First, as biosphere co-habitants with others, we are responsible for ensuring that activities and lifestyles in this region contribute to global sustainability. More than 90 per cent of the GTA population lives in urban areas. This is similar to the global situation: nearly half the world's population lives in cities and towns and, in wealthier countries, more than 70 per cent are urban dwellers. Therefore, it is reasonable to assert that urban activities have a cumulative worldwide effect, as well as within their immediate environments. This global influence is the result of producing food for export; transporting food, energy, and materials; and polluting air and water, both locally and over a wide area. It is manifest in such problems as the long-range transport of airborne pollutants, destruction of rainforests, thinning of the ozone layer, and the greenhouse effect.

Second, as residents of the Greater Toronto bioregion, we must ask:

- How sustainable are the economy, natural environment, and quality of life here?
- What are the probable correlations among population growth, economic trends, and future environmental quality?
- As the population of this area grows, will we be able to maintain the current quality of life, let alone improve it?
- How will trends in economic activities affect the use of materials and energy, and the production of pollution and wastes?
- What is the carrying capacity of the bioregion, for people and wildlife?
- What are the natural limits of the ecosystem in supporting and tolerating human activities?

The signs of stress already evident in the Greater Toronto bioregion would seem to indicate that, if present trends continue, environmental health, the economy, and quality of life will not be at all sustainable. Clearly, therefore, strategies and plans for the future must be established in the context of sustainability that is fully and honestly explored, and constructively addressed.

UNDERSTANDING PLACES

Ecosystems may be understood on different scales: the largest one, of course, is the biosphere. Almost self-contained, it has its own atmosphere, water, minerals, soils, and life forms. However, like all ecosystems, the biosphere is not completely self-sufficient: it depends on energy from the sun, and is influenced by the gravitational

forces of the sun, the moon, and other planets. Many interacting ecosystems are nested within the biosphere. As Figure 1.2 shows, a watershed in the Toronto region is part of the Greater Toronto bioregion, which, in turn, lies within the Great Lakes Basin, which is part of the larger Great Lakes-St. Lawrence system and so on.

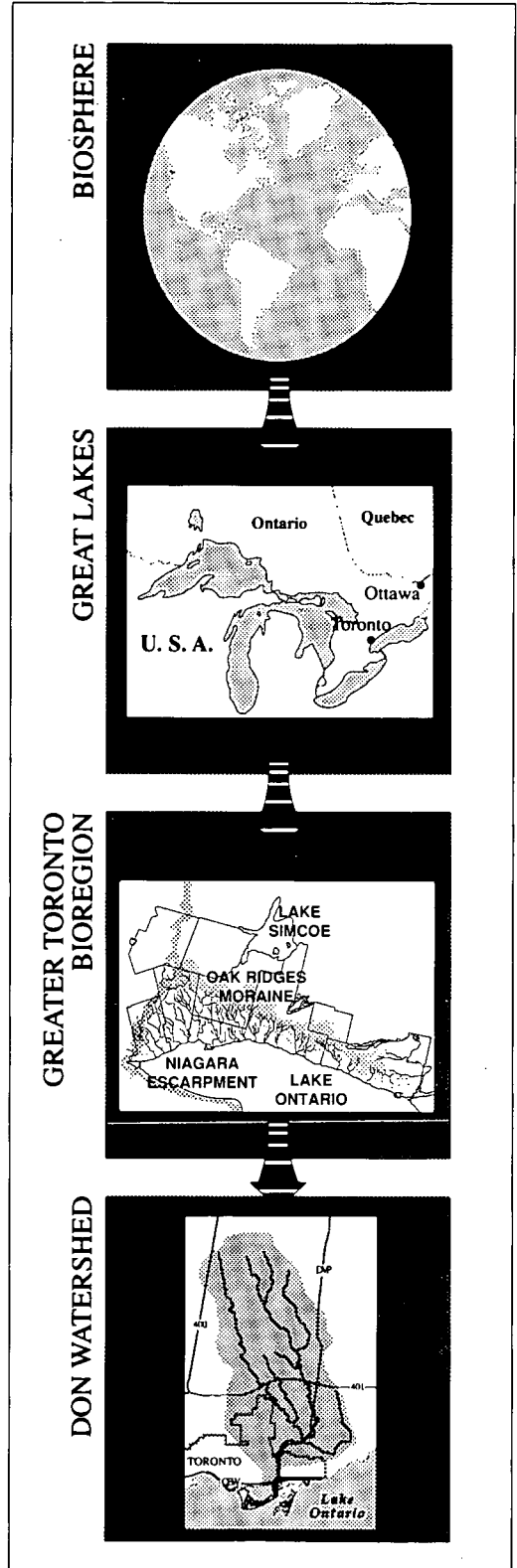
One characteristic of ecological processes is that they rarely conform to political boundaries, such as city limits. Although the many interactions between ecosystems make it impossible to identify distinct boundaries, for practical purposes the key is to identify natural boundaries based on such characteristics as drainage patterns, landforms, vegetation, and climate.

As explained previously, the Royal Commission used the principle of natural boundaries to define the Greater Toronto bioregion: the Niagara Escarpment, the Oak Ridges Moraine, and Lake Ontario. Lands and waters in this bioregion share climatic and many ecological similarities, and the 60 or so watersheds all drain into Lake Ontario. Most of this area now falls within Toronto's commuter and economic orbit; in that sense it is our home — the ecosystem in which we live, work, and play.

Thinking about the whole bioregion helps focus attention on the interdependency and links that exist within it: between city and countryside, natural and cultural processes, water and land, economic activities and quality of life.

As Kirkpatrick Sale (1985) explains in his book, *Dwellers in the Land*, we must begin by understanding the bioregion: its geology and soils, weather, animals and plants, and human interrelations with those various elements. What natural processes are at work?

Figure 1.2 Ecosystems

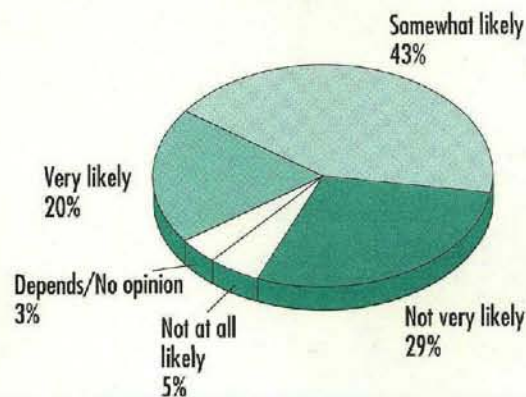


What do forms of wildlife need to survive? How have people affected the natural processes and how do they interact with wildlife? What is the aboriginal history of the place? What can we learn about ourselves from the settlement and development history of this area? In other words, how does this bioregion work and what distinguishes it from others?

Such thinking rekindles our sense of place, of rootedness, and of continuity with the past. It also shows what we have already lost, and what we stand to lose unless we begin making decisions based on an awareness of the region's full natural and cultural potential.

As "dwellers in the land", all of us — whether our families have been here for centuries or whether we are relative newcomers — need to feel connected with the natural world in a daily, physical way. The better we understand the bioregion in which we live, the more we will perceive it as "home", the more our decision-making and

Likelihood of Developing an Environmentally Sustainable Economy



There is optimism among the respondents that we can develop an environmentally sustainable economy over the next decade.

Source: Environics Poll, 1991.

behaviour will become harmonized with its special qualities, potentials, and sensitivities.

In his book, *Out of Place*, Michael Hough (1990) explores the tendency towards homogenization of urban places and the resulting loss of distinct regional identity. He says,

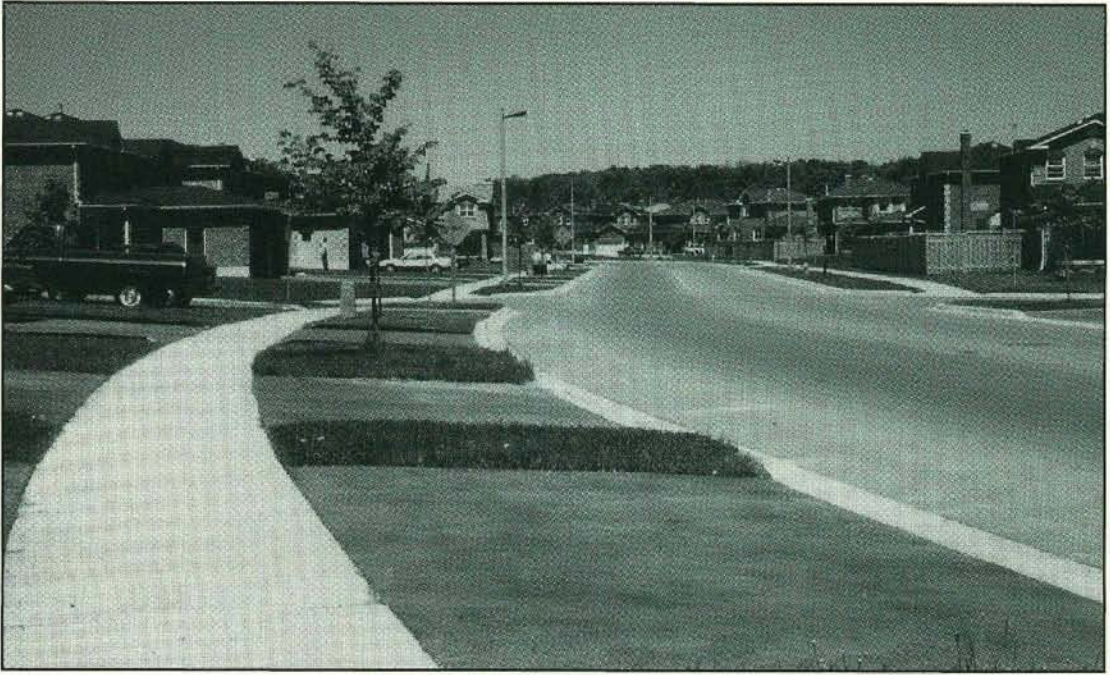
... if it were possible to transport a visitor on a magic carpet around the world and set him down in the suburbs of Toronto, Bournemouth or Chicago, it is quite likely that he would have difficulty knowing where he was.

Since the Second World War, urban growth has occurred at an unprecedented scale and speed, frequently ignoring a place's unique natural and cultural attributes. Natural landscapes have become fragmented, the distinctions between town and country have been blurred, and a standardized pattern of freeways, subdivisions, malls, and strip development has become the norm.

A great deal of development that has taken place in the Greater Toronto bioregion since the end of the war ignored the bioregion's distinctive natural features and strong historical roots, creating landscapes that could be anywhere.

Instead, we should be taking advantage of the bioregion's true potential to create more distinct, memorable, and enjoyable places. A greater awareness of the bioregion's natural attributes — the bluffs and beaches of the Lake Ontario waterfront, the cliffs of the Niagara Escarpment, the rolling hills of the Oak Ridges Moraine, the deep river valleys and rivermouth wetlands — an understanding of how they were formed, and the processes they undergo, would help us to do this.

We also need to read, and learn from, the aboriginal and pioneer history evident



This community could be anywhere in North America

in the countryside, the old downtown neighbourhoods, the port and industrial lands. All these and more remind us that we have a rich heritage of people interacting with each other and with this region. There is an opportunity now to retain what exists, rehabilitate what has been damaged, and work carefully with this heritage as we move toward the future.

Vistas are important and valuable in our experience of place because they help define and give character to the landscape. Vistas may be based on natural features, or created by people, over time, as they build cities or modify landscapes. Conversely, views may be lost or damaged if they are ignored when development or redevelopment takes place.

Compared with people of other major Canadian cities that have ocean or river waterfronts — Halifax, Vancouver, and Ottawa-Hull, for example — in modern times, Torontonians have not paid as much

If there is any scale at which ecological consciousness can be developed, at which citizens can see themselves as being the *cause* for the environmental effect, it is at the regional level; there all ecological questions are taken out of the realm of the philosophical and the moral and are dealt with as immediate and personal. People do not, other things being equal, pollute and damage those natural systems on which they depend for life and livelihood if they see directly what is happening; nor voluntarily use up a resource under their feet and before their eyes if they perceive that it is precious, needed, vital; nor kill off species they can see are important for the smooth functioning of the ecosystem.

Sale, K. 1985. *Dwellers in the land: the bioregional vision*.
San Francisco: Sierra Club.

attention to public vistas as they might have. Halifax has strict guidelines about viewing planes between the Citadel and the water. Vancouver stringently protects views of water and mountains. Ottawa-Hull controls views of the Parliament buildings from across the Ottawa River, and limits downtown building heights to ensure they do not overwhelm the prospect of the Peace Tower.

This is more than mere symbolism: it helps protect and maintain the unique qualities of these cities, and influences urban form and structure just as powerfully as natural features or the configuration of roads and blocks.

Although often taken for granted, the vistas of the Greater Toronto waterfront are among the most powerful elements in creating memorable experiences there. The expanses of sky and water allow views across bays; from the land; from boats, islands,

and peninsulas to the waterfront; and views down on the entire waterfront panorama from aircraft. These are rarely the same from one day to the next: different weather, times of day, and seasons create ever-changing moods, colours, and lighting.

Monuments — such as the lion that marks the opening of the Queen Elizabeth Way 53 years ago, which is now situated near the Humber River, or the Princes' Gate at the Canadian National Exhibition — can be important aspects of vistas and help create a sense of place. They may commemorate an event, celebrate a place or interpret an aspect of history. But we have tended to neglect the importance and potential of monuments in place-making.

Some municipalities along the Greater Toronto waterfront have special provisions to take advantage of waterfront views, such as Burlington's Windows-on-the-Lake program.



A distinct and memorable place, Kensington Market

Overall, however, planning policies, design guidelines, development approvals, and other instruments could give more consideration to the special views that characterize waterfront places.

Having considered the unique attributes of the bioregion and how they can help us to protect and enhance its distinctiveness and diversity, making better places for living, playing, and working, attention must be given to the region's economy and the need to be sensitive to local and regional conditions and potentials, within larger national and international contexts.

As Meric Gertler (1990) explains in his working paper for the Commission, *Toronto: The State of the Regional Economy*, there are opportunities to develop regionally based economic strategies for the Greater Toronto region, building on existing advantages. These could look at the importance of quantity and quality of local goods and services, as well as at the local resource base, particularly its labour force and infrastructure. Local demand is essential in helping firms compete successfully in other regions and countries: sophisticated and demanding consumers in the market at home seem to act as the foundation on which firms compete effectively in other regions and countries. Competition with other firms in the same sector at home also spurs companies to innovate and produce superior products. And, as New York's experience shows, maintaining a high quality of life — a healthy environment, suitable housing, good social services, recreational opportunities, high-quality education, and so on — is crucial to a prosperous economy.

Despite that, no government entity is responsible for monitoring and responding

to changes in the economic fortunes of this region as an integrated whole. The region is larger than any of the individual municipal or regional governments in the area, but smaller than the next largest level, the Province. However, despite the importance of the region's economy in the economy of Canada, neither provincial nor federal governments give it the care and attention it needs if it is to continue fulfilling this role.

INTEGRATED PROCESSES

The report of the World Commission on Environment and Development (1987) called for major alterations in the way we do business, and emphasized the need to integrate economic decision-making with environmental decision-making processes. It concluded, as has the Royal Commission, that sustainability requires a revolution in our thinking and in our institutional arrangements. Many traditional barriers will have to be overcome if we are going to respond to our current environmental and economic crises.

The past is important: it tells us where we have come from; what shapes what we are and influences what we will become. The built environment — historically, architecturally, and culturally rich buildings, districts and landscapes — gives us a sense of place. . . . It provides a physical bond with a shared past and helps provide mental and physical stability in a rapidly changing world.

Parks, Pleasures, and Public Amenities Work Group. 1989.
Parks, pleasures, and public amenities. Toronto: Royal Commission on the Future of the Toronto Waterfront.

Two of the most intractable obstacles to implementing an ecosystem approach — and to the economic and environmental regeneration it would provide — are rigidity of bureaucratic systems and fragmentation of jurisdictions. They combine to create a high degree of paralysis that pervades our systems of governance, and makes it difficult, if not impossible, to make sound, integrated decisions.

While it may now be considered trite to say that, *if we want to improve the kind of decisions we make*, we are going to have to change the *way* we make decisions, the fact is that the multidisciplinary, cross-sectoral, and multijurisdictional nature of today's environmental and economic problems means cutting across disciplines, sectors, and jurisdictions. Ten provincial round tables, two territorial round tables, a National Round Table, and hundreds of municipal round tables are examples of how new institutions can be created to adapt to this challenge. While still early in its existence, the round-table movement has already proven effective in bringing people together from diverse backgrounds so that they can talk and find ways to overcome old antagonisms, using innovative forms of consensus decision-making. Other advisory bodies, commissions, and task forces can also act as agents of change and vehicles to overcome institutional rigidities. Such catalysts as round tables can be important in fostering partnerships across sectors, among institutions within sectors, and across jurisdictions.

In the process of carrying out its mandate, the Royal Commission acted as a

catalyst to promote change in the way we study, plan, and implement policies that will foster more sustainable waterfronts, cities, and regions, and its experience may suggest ways for others to do so. In fact, during the Commission's life, many people asked us to describe our methods, and have begun applying some of them: perhaps some aspects of our work may be usefully replicated in other areas (although, they may need to be adapted for different regions and circumstances).

The Commission's mandate required the Commissioner to seek full consultation with all interested parties and to seek the concurrence of affected agencies with his

recommendations. In working to fulfil its mandate, the Commission used a cross-sectoral approach to its research and analysis and worked

actively to see that its recommendations were implemented. By doing so, the Commission came to be an agent of change to help overcome the inertia it encountered. Its agent-of-change activities can be grouped as: linking resources, helping processes, acting as a catalyst, and finding solutions.

LINKING RESOURCES

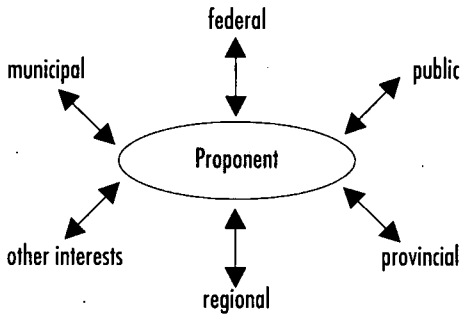
In its multidisciplinary, multijurisdictional, and multi-stakeholder approach, the Commission linked agencies, organizations, levels of government, and individuals together — in some cases, those that had never worked with or even met each other before.

In the three years of its life, the Commission created 16 different teams to prepare reports, always drawing members

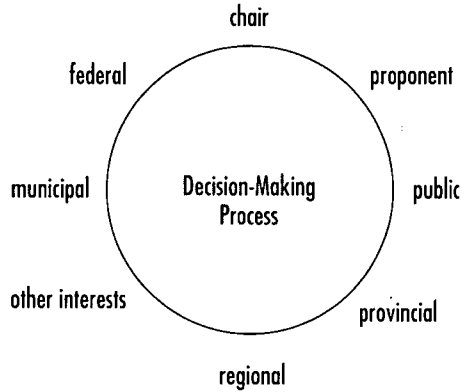
If we want to improve the kind of decisions we make, we are going to have to change the way we make decisions.

Figure 1.3 Contrasting decision-making processes

Fragmented



Round-Table



Source: Barrett, S., and J. Kidd. 1991. *Pathways: towards an ecosystem approach: a report of phases I and II of an environmental audit of Toronto's East Bayfront and Port Industrial Area*. Publication no. 11. Toronto RCFTW.

from different sectors, backgrounds, and interests: developers began talking with environmentalists, traffic engineers with landscape architects, scientists with community activists, and federal public servants with city officials. This often led to consensus, trust, and promotion of partnerships that would not otherwise have emerged.

Furthermore, these interactions sometimes extended beyond the individuals directly involved, to link their networks — their colleagues, values, information, and resources.

The use of multi-stakeholder teams to produce discussion papers that focused consultations worked only because participants were asked *not* to act as stakeholders, to “park their team jackets at the door”. They were to reflect but *not* represent their sector organizations. Many participants reported that this was quite liberating, enabling them to set aside territoriality, to escape cramped adherence to old ways of viewing problems and, instead, to see them on the basis of new information, understanding, and perspectives.

While the 15 work group reports and 14 technical papers, prepared at arm’s length from the Commission, were particularly creative, they were also grounded in the hard reality that comes from subjecting each position or recommendation to the test of feasibility and acceptability.

HELPING PROCESSES

Just by providing “good offices” the Commission was often able to help a stalled process move forward; creating a steering committee, calling a meeting, acting as a facilitator (and sometimes mediator) allowed the Commission to analyse issues and promote change, breaking out of long-standing jurisdictional gridlock. Because the Commission was only advisory, took away no one’s jurisdiction, and was temporary in its duration, it could act as an honest broker, to a greater degree than could a permanent body with legal powers.

The Commission’s use of public hearings (described in the Introduction)

helped the process: friendly and informed hearings ensured open communication and made lawyers unnecessary. The free flow of information opened many processes that had formerly been closed; several groups said they felt empowered by participating in an open forum at which they could express their positions in their own words.

The public is often consulted too early or too late: too early before a paper has been prepared to focus discussion and suggest options; or too late after most decisions have been developed, leaving citizens with the suspicion they were simply being used as window dressing. The Commission's hearings were always based on discussion papers prepared by the representatives of diverse stakeholders.

The Commission's "family" of regular deputants and interested parties were kept involved by a variety of means, not least the *Newsletter*. Desk-top published in-house at modest cost, it became an effective way of ensuring that participants knew what the Commission, and other groups, were doing. By the end of the Commission's life, it had a mailing list of more than 7,500 people.

ACTING AS A CATALYST

Royal commissions have the right to be independent, but are not obliged to be so. In preparing recommendations, the Commission often tested drafts with affected agencies, frequently with the help of work group members, and then worked to advocate positions it had taken.

This proactive and interventionist stance was not greeted warmly at first by all the many agencies and special purpose bodies that have jurisdiction in the region. By the second year, however, most of these

bodies had come to see the Commission's process as a way of breaking the debilitating constraints of fragmented bureaucratic systems.

The Commission's interim reports were essential to the success of its function as a catalyst. Very early on, deputants saw that they had been listened to; governments and their agencies were able to respond quickly, thereby giving credibility to the entire process. Problems could be solved as they arose, freeing the Commission to concentrate on other subjects.

By issuing interim reports, the Commission avoided the perception — and the reality — in which commission documents simply gather dust on a shelf: ours were not orphans in a bureaucratic system. Before being released, each had been the subject of a great deal of groundwork by the work groups and in the consultation processes. After the interim reports were released, we could continue actively working with other agencies that would adopt and implement our recommendations.

FINDING SOLUTIONS

After analysing and synthesizing many issues, and having focused debate, crystallized positions, and overcome inertia, the Commission made recommendations on possible solutions to what, in many cases, had been longstanding and persistent problems. Most major recommendations in the first two interim reports have now been adopted and implemented, either partially or fully.

Some workable solutions were found, in part, as the result of the broadly based, interactive consultation process used from the outset. If politics is the art of the possible, policy-making is the art of the

feasible and there is no better way to find out what is possible than subjecting a discussion of ideas to full, open, and public critique. While many of our negotiated solutions were somewhat ragged, they were broadly acceptable. Rather than using conventional systems of policy-making, which often impose constraints on testing options openly, we could re-evaluate initial positions and, before making recommendations, adapt or retreat, in ways that would be difficult for governments and their permanent agencies.

INITIATIVES

The integrated processes used by the Commission helped to break down some of the existing barriers to research, analysis, decision-making, and implementation that threaten our ability to deal effectively with today's economic, social, and environmental problems. These efforts to implement the ecosystem approach are not without precedent: many steps are being taken in this direction, in Canada and worldwide.

In 1992, the United Nations will host a major conference on Environment and Development in Brazil, at which representatives from countries around the world will come together, share experiences, and develop, among other things, ways of addressing the cumulative effects of urban living on the biosphere. Given that nearly half the world's population lives in cities and towns, the conference has the potential to make significant changes.

The International Council for Local Environmental Initiatives (ICLEI) helps municipalities around the world address environmental issues. In the summer of 1991, it opened its World Secretariat and North American Headquarters in Toronto,

having chosen this region because of its reputation for actively promoting effective local environmental management. ICLEI will represent local governments to international organizations dealing with the environment, collaborate with municipalities worldwide on major environmental issues, and promote excellence in municipal management of the environment.

As ICLEI has found, many Ontario municipalities have already taken initiatives that reduce their impact on both global and local environments. New processes, planning studies, policies, by-laws, programs, environmental advisory committees, municipal environmental assessment processes, and development requirements help municipalities bring environmental considerations into their decision-making processes. Community initiatives have also become popular as citizens seek to address their local environmental priorities.

The City of Toronto's Healthy City Office demonstrates how processes can be adapted to facilitate co-ordinated municipal action. The Office acts as an agent of change, working with people in the community, in business, and government, with the goal of creating a good quality of life for everyone. For example, one of its recent projects focuses on transportation systems that are more socially and environmentally sensible than those now in use. The Office's recently published report, *Evaluating the Role of the Automobile: A Municipal Strategy* (Toronto 1991), was prepared by a work group that included representatives from municipal government, the Toronto Transit Commission, GO Transit, business, environmental groups, and ratepayers. It highlights the real costs of automobile use (energy use, air and noise pollution, health effects, use of land for

roads and parking, etc.) and proposes a comprehensive strategy that could reduce the effects of automobiles by controlling emissions, reducing traffic, changing land-use patterns, and promoting alternative forms of transportation.

Increasingly, municipal planning studies are evolving to incorporate environmental concerns. For example, Halton Region (1990) has prepared a new regional plan that provides a vision of what its landscape and communities should be like in the very long term — 50, 100 or 500 years from now. Halton plans to reach its ultimate goal of sustainable development guided by two principles: land stewardship and healthy communities. The intention is to preserve landforms and inhibit urban sprawl so that there is a healthy

balance among the social, economic, and environmental needs of the community.

A number of municipalities have also proposed new Official Plans that place much more emphasis on the environment than did previous versions. For example, Metro Toronto's *Towards A Liveable Metropolis* (1991) suggests innovative ways of dealing with the issues currently faced by its communities. These include a new framework for decision-making, based on the three components of liveability: environmental integrity, economic viability, and social well-being. Initiatives outlined in the report include integrating environmental, social, and economic considerations into a revised development review process, assessing the state of the environment in Metropolitan Toronto, and developing a strategy to ensure that corporate practices and policies are environmentally responsible.

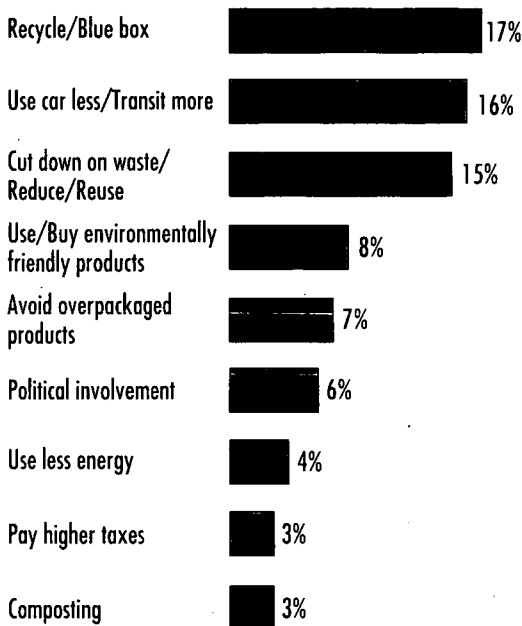
The City of Toronto's *Cityplan '91* also has a strong environmental focus, based on the principle that:

Toronto's residents, workers, and visitors have the right to an environment that is protective of their health and well-being, and . . . have the responsibility to maintain the environment for future generations.

Many of the plan's proposals are intended to protect and enhance the City's natural heritage directly, while others incorporate environmental considerations indirectly.

The Township of Mono, which recognizes the importance of managing water on a sustainable basis, has formed a committee to examine the cumulative effects of development taking place in the headwater areas of the northwestern part of the bioregion. Along with the local conservation authorities,

Most Significant Lifestyle Change



Recycling, using transit, and cutting down on waste are some of the changes the respondents are willing to make to achieve an environmentally sustainable economy.

Source: Environics Poll, 1991.

the Niagara Escarpment Commission, and the ministries of Municipal Affairs and of the Environment, Mono hosted a conference in October 1991 that examined the state of our water resources, current water planning practices, and responsibilities for water management.

The Credit Valley Conservation Authority (CVCA) has also been active in protecting and maintaining water resources, in this case the Credit River and its tributaries. In the late 1980s, the Authority recognized that the traditional approach to water management, stressing engineering, was not going to maintain the long-term health of the river. After undertaking extensive water resource studies, it developed an ecosystem approach to water management, which emphasizes understanding environmental conditions and only then developing sub-watershed plans. CVCA is currently involved in four sub-watershed plans with local municipalities, developers, and government agencies. Involving all interested parties has meant that, from the outset, decision-makers understand the constraints and opportunities that may exist in each sub-watershed.

In addition to participating in the CVCA sub-watershed planning exercise, the ministries of Natural Resources (MNR) and the Environment (MOE) have, with municipal and conservation authority representatives and other government agencies, been developing a framework for managing watersheds in urbanizing areas of Ontario. Founded on an ecosystem approach, draft interim guidelines for the preparation and implementation of sub-watershed plans and for the integration of water resource management objectives into Official Plans have been developed for discussion.

A number of municipalities have programs to protect environmentally significant areas. For example, Halton Region's Official Plan includes provisions for designating Environmentally Sensitive Areas (ESAs); it prohibits development in ESAs and requires an environmental impact study for development on land adjacent to an ESA.

In Halton, as in a number of other places in the bioregion, there is growing interest in maintaining more than the "islands of green" represented by ESAs. In 1989, the Metropolitan Toronto and Region Conservation Authority (MTRCA) adopted a *Greenspace Strategy for the Greater Toronto Region* (1989) encompassing integrated management of natural lands and resources within the region. Programs arising from the strategy include a proposed multi-stakeholder process for watershed planning in the Don Valley, and a Greater Toronto Region Trail System connecting the waterfront, the river valleys, and the Oak Ridges Moraine.

In 1989-90, Ron Kanter, then a Liberal MPP, working on behalf of the Province, studied options for a greenlands strategy in the Greater Toronto Area. His report, *Space for All* (1990), identifies existing greenland resources and calls for immediate action to secure them for the future, recognizing their importance to a good quality of life and a healthy environment.

As a contribution to Kanter's study, or in response to it, many municipalities (Halton, Scarborough, and Whitby, among them) prepared their own greenlands strategies. These would protect and link ESAs, valleylands, wetlands, groundwater recharge areas, woodlots, parks, waterfront lands, and the like.

The City of North York is a pioneer in working to expand and enhance existing

natural areas through naturalization. By planting native vegetation, the City creates new habitat for wildlife and gives citizens a diverse and healthy environment in which to enjoy passive recreation. Naturalized parks are a step towards sustainability: because they are adapted to local environmental conditions, native species require less maintenance, fewer chemicals, and less water.

Governments at all levels are major consumers and can have a potentially significant role in stimulating the market for durable, reuseable, and recyclable products. The Regional Municipality of Metropolitan Toronto has asked its constituent municipalities to establish environmental purchasing policies, including such measures as using re-refined oil in municipal vehicles, reuseable eating utensils, and recycled paper.

Some municipalities are examining the state of the local environment as a quality-of-life issue and asking residents to offer ideas and a vision that will help focus long-term planning. For example, the Region of Waterloo appointed a Citizens' Advisory Committee on the Quality of Life, which is to gather opinions from members of the public and frame a consensus within which future community development can be guided. The committee found that sustainable development must become the basis for personal and community decision-making if the quality of life in the region is to be maintained and improved.

By-laws can also be used to promote sustainability. Recognizing the dangers of ozone-depleting substances to human and ecosystem health, the City of Toronto (1990) passed a by-law that prohibits and regulates the use, recovery, and disposal of products

containing, or manufactured with, chlorofluorocarbons, halons, and other ozone-depleting substances. Such equipment as refrigerators, air conditioners, and fire extinguishers must now be drained before they are discarded for disposal, chlorofluorocarbons and halons must be recovered from them, and the chemicals must be deposited at an authorized site.

The City of Toronto has adopted requirements for developments, to ensure that they are more environmentally responsible. An applicant must submit a noise impact statement forecasting noise emissions and ways to minimize their impact on the surrounding environment. All major development projects must now include waste reduction and recycling strategies in their proposals. New developments of more than 10,000 square metres (107,600 square feet) must meet water and energy conservation and efficiency standards. In order to minimize automobile use, a new proposal for a non-residential development, which would normally be required to include no fewer than 75 parking spaces, must now provide a traffic management plan suggesting alternative ways for future employees in the development to travel to work.

Citizens' groups have also taken powerful initiatives to protect and enhance the natural heritage: the Black Creek Project, begun in the early 1980s by several citizens in the Black Creek watershed, has fought for the protection and rehabilitation of the creek. It has planted more than 2,000 trees and shrubs in the creek valley, brought modifications of development proposals so they take environmental health into consideration, and tackled bank erosion with rocks that provide habitat. Funding from various levels of government and co-operation with the

Conservation Council of Ontario (CCO) has helped the Black Creek Project in its work.

CCO is also reaching out to other communities, encouraging them to become effectively involved in supporting a healthy environment. With its assistance, interested communities will develop environmental action plans that list their existing environmental and resource issues, and propose remediation strategies to be implemented over the next several years. The Regional Municipality of Metropolitan Toronto will be the first municipality to prepare an action plan and will focus on four key areas: waste reduction, natural areas, water conservation, and air quality.

Partnerships among various levels of government can facilitate environmental action. For example, as part of the Hamilton Harbour Remedial Action Plan, a program is being developed to restore 605 hectares (1,495 acres) of fish and wildlife habitat in Cootes Paradise and the mouth of Grindstone Creek. It is proposed that this work be undertaken as a joint project among the federal, provincial, and municipal governments, as well as with the private sector. Environment Canada recently allocated \$4.2 million (one-third of the total projected costs) for the project, from the Great Lakes Clean-up Fund.

Provincial planning initiatives can also be important in promoting sustainability. The Niagara Escarpment Plan is one of the few land-use plans in Canada and the only one in Ontario that has jurisdiction on the basis of an ecological entity. The plan controls development that is incompatible with the natural environment and threatens the continuity of the escarpment and its vicinity.

Similar development pressures are occurring on the Oak Ridges Moraine, a

hydrologically sensitive and important landform north of Toronto. The Province has undertaken a two-year planning study to develop a long-term strategy for the moraine. Until then, Provincial Implementation Guidelines on the Oak Ridges Moraine (1991) are intended to ensure that permission is given only to developments that are compatible with the environmentally sensitive nature of the Oak Ridges Moraine. For example, natural areas, groundwater recharge areas, and landforms are to be protected by the guidelines until the strategy is complete.

Growth pressures in the GTA prompted the Province to undertake the Greater Toronto Area Urban Concept Study, completed in 1990. It estimates infrastructure requirements, comparative capital costs, quality and effectiveness of urban services, and the environmental impact of three possible patterns of future development in the GTA — “spread”, “central”, and “nodal”. Of the three, the “spread” concept, continued low-density development outside the existing built-up areas, was found to use the most rural land and natural resources; moreover, because it depended so heavily on automobile use, it would consume the most energy and contribute significantly to air pollution.

The “central” concept — new high-density growth concentrating development in existing built-up areas, particularly in Metropolitan Toronto, would be most energy- and land-use efficient, but would make it difficult to provide adequate open space in urban areas. The “nodal” concept, distributing new growth amongst nodes throughout the GTA, based on existing settlements and in a compact form, was judged least disruptive to existing communities;

STREAM REHABILITATION: THE BLACK CREEK PROJECT

Traditionally, cities and streams have not co-existed well: human settlements of any size usually herald habitat destruction, water pollution, and, in time, reshaping of a river's course to fit human habitation and infrastructure. This is more or less true around the world: the Seine in Paris, the Choa Phya in Bangkok, and the Vistula in Warsaw. Nor are Toronto's streams and rivers an exception. What is exceptional is the response of a group of citizens to the deterioration of their local stream — more specifically, the fight by the Black Creek Project for the health of Black Creek.

In 1982, Sandy Agnew, who grew up beside the river, and John Maher, who lived near Black Creek, got together with a few other neighbours and formed the Black Creek Project. Its goal was to protect and enhance Black Creek and its associated ecosystems — no small task, then or now.

Black Creek, a tributary of the Humber River, has suffered much since the first European settlement in the area. Most of the watershed was cleared for agriculture and later paved over by urban growth; a large proportion of the watershed was rendered impermeable by pavement and buildings; a great deal of water falling as rain and snow could no longer enter the soil to be released slowly into the river. Instead, precipitation hit pavement and roofs and was funnelled into storm sewers.

Today moderate to heavy precipitation results in sudden, powerful river flows. The high-velocity water is dangerous to both wildlife and humans, and severely erodes the riverbank. In parts of the stream that have been channelled, the water picks up speed as it rushes through the slick straight gutters.

Forcing the river into a concrete straightjacket also eliminates aquatic and shore habitat, and increases flood damage. Such artificial reaches of the stream are devoid of rocks under which water insects can hide, as well as the vegetation cover that is forage for small mammals and birds.

Some of Black Creek's tributaries are in even worse shape: they have been completely covered and are now part of the city's storm-sewer network; furthermore, like most urban streams, Black Creek and its tributaries suffer from pollution. Sediment from construction activity washes into the creek, blocking the light the aquatic community needs and blanketing the river bottom, which suffocates plant and animal life there. Discharges from industries in the storm sewershed; lawn chemicals; the soap people use in washing their cars; the oil and other chemicals we routinely pour down our drains — all make their way into the creek. Few species can survive in such a hostile environment.

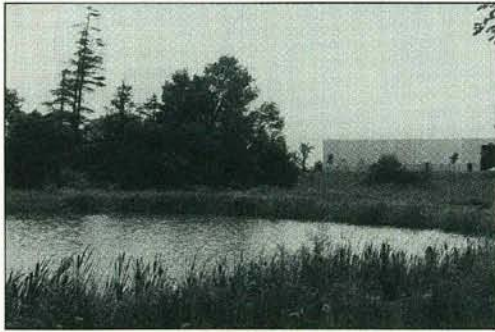
One of the first rehabilitation activities of the Black Creek Project was to plant trees in the watershed. The restoration of some plant species that grew in the area before urbanization has enlarged wildlife habitat and slowed water percolation in the soil, giving the river a more stable water flow in planted areas.

Plantings of shrubs and trees have also helped stabilize riverbanks, while rocks placed along the creek banks have helped reduce erosion. The Black Creek Project usually has

many planting days each year at which members and the public, frequently local students, work together to dig holes and plant trees in various parts of the watershed. There have been clean-up days involving the public as well as Environmental Youth Corps staff, at which garbage (including several hundred shopping carts) has been cleared from the river.

The Black Creek Project has also been instrumental in protecting the river by influencing development plans. In 1983, members persuaded the City of York to refuse creation of a snow-dumping ground, which would have further degraded Lavender Creek. In 1985, the Project stopped the bulldozing of a woodlot in Vaughan in order to create a stormwater management pond. The pond exists today — right beside the woodlot, in fact — but it is a positive addition to the woodlot's natural heritage because, acting in accordance with advice from members of the Project, designers ensured that it includes wetland areas.

Using funds from various levels of government and private donations, the Black Creek Project has supervised inventories of the natural heritage in the watershed, put in 300 metres (985 feet) of erosion control riprap, planned a bike path and nature trail system for the entire valley, and planted several thousand trees.



Pond in the Black Creek valley provides stormwater management and wildlife habitat

Future plans include replacing some of the channelled portions of the creek with natural stream beds and banks. At the mouth of the creek, this would allow fish from the Humber River to gain access to Black Creek again and would create habitat throughout the creek for many species of wildlife. Restoration is a slow process and there may sometimes be as many steps backwards as there are forwards. Ultimately, long-term success depends on the willingness of watershed residents to take on the role of stewards of the river.

provided the greatest diversity in types of housing, densities, and population/employment mixes; and wasted less energy and fewer resources than the "spread" concept.

Responses to the study show a general consensus in favour of some form of nodal growth; however, the study also recognized the need for more work on the idea: to define a shared vision for the

Greater Toronto region; analyse future economic prospects and their impact on growth; examine human service needs; develop models for more compact, liveable communities; and improve understanding of environmental and open-space implications. The GTA office is currently preparing a "vision" paper as the basis for establishing common values and directions for this complex and dynamic region.



Niagara Escarpment, near Milton

PRINCIPLES FOR REGENERATING THE WATERFRONT

All these studies and initiatives indicate deep and growing concern about the future of the Greater Toronto region, and show that there is an emerging consensus about the need to act, and act soon, to secure a healthy and sustainable future. While people are responding to these challenges in a myriad of ways, there is a need now to co-ordinate efforts and place them in a framework that makes a larger, more effective whole. The Royal Commission believes this can be achieved by working to regenerate the waterfront and the bioregion.

We view regeneration as a healing process that restores and maintains environmental health, as well as anticipating and preventing future harm. This means striving to ensure that existing land uses and activities are adapted, and all new development is designed, to contribute to the health, diversity, and sustainability of the entire ecosystem: the physical environment, human communities, and economic activities.

To help meet these needs, the Commission's *Watershed* report identified nine principles that can be applied to make the Greater Toronto waterfront healthier and more sustainable: clean, green, connected, open, accessible, useable, diverse, affordable, and attractive. (Applications of

the principles are discussed in *Watershed* and in subsequent chapters of this report.)

CLEAN



All activities and future development should work with natural processes to contribute to environmental health. Air, land, sediments, and water should be free of contaminants that impair beneficial uses by people and other living beings.

Polluted soils, groundwater, sediments, and water should be remediated. New development should include the best possible means of controlling stormwater flows and pollution, reducing energy use for heating/cooling, minimizing automobile dependence, reducing and recycling wastes, and reducing water consumption. Where possible, existing development should be adapted or retrofitted to achieve these goals.

GREEN



Natural features and topography should form a “green infrastructure” for the bioregion’s cities, suburbs, and countryside. A

green infrastructure may include natural habitat areas such as wetlands and forests; landforms such as bluffs, valleys, beaches, and cliffs; aquifer recharge areas; and parks and other open spaces.

The diversity and productivity of ecological communities should be protected and restored through measures that:

- preserve the genetic diversity of indigenous plants and animals;
- protect and restore healthy natural habitats and communities; and
- maintain natural ecological processes.

CONNECTED



Throughout the bioregion, connections with the region’s natural and cultural heritage should be restored and maintained. This should include links among:

- wildlife habitats;
- city and countryside;
- social communities;
- past and present; and
- people and nature.

A network of greenways should connect the natural habitats and human communities of the waterfront, valley systems, tablelands, the Niagara Escarpment, and the Oak Ridges Moraine. As much as possible, greenways should connect and incorporate existing

public lands, to form a “linked-nodal” pattern throughout the bioregion. Continuous pedestrian and bicycle trails should be developed in these greenways to provide recreational and commuting opportunities.

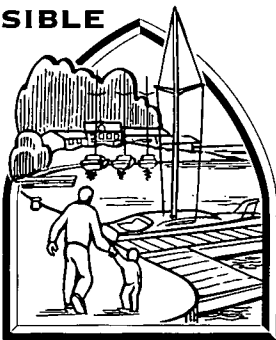
When redevelopment is undertaken, cultural and built heritage should be respected and incorporated, so that continuity with the past is protected and distinctive places are maintained.

OPEN



Existing vistas of Lake Ontario and its bays, bluffs, peninsulas, and islands should be maintained. Moreover, vistas made possible by the open expanses of water (e.g., views of the city from Ontario Place, or across Humber Bay) should be treated as important values in waterfront development. Density and design of waterfront structures should not be permitted to create a visual barrier to the lake or intrude on the water’s edge.

ACCESSIBLE



Nodes and communities of waterfront activity should be serviced by public transit

as well as by road, with transit increasingly emphasized. People should be able to get to, and enjoy, the waterfront on foot or by bicycle, with major improvements made where necessary to overcome the barriers presented by road and rail corridors. The waterfront should be safe and accessible to all sectors of society, including the disabled, children, and older adults.

Where feasible, the water’s edge should be — and should be clearly identified as being — open to public access. New developments should include public access to and along the waterfront. Where continuous access to the waterfront is not possible, it should be provided at convenient intervals, with parallel connections back from the shore.

Providing regional access for visitors, in areas where there are already residential neighbourhoods on the waterfront, should be handled carefully and with respect for local needs for privacy and safety.

USEABLE



The waterfront should continue to support a mix of public and private uses that:

- are primarily water-related;
- permit public access, use, and enjoyment of the water’s edge;
- enhance residential neighbourhoods and appropriate commercial and industrial uses;

- decrease need for commuting by providing a local balance of employment and residential opportunities;
- are environmentally friendly in form and function;
- minimize conflicts with adjacent communities or uses; and
- are designed and managed to improve microclimate and promote greater year-round comfort and use.

Design, use, and management of waterfront places should enhance safety and minimize risks caused by:

- threats to personal safety from other users;
- flooding and erosion; and
- incidents involving hazardous materials.

DIVERSE



The waterfront should provide diverse landscapes, places, wildlife habitats, uses, programs, and experiences. This will offer varied opportunities for visiting and resident people, as well as for resident, migrating, and over-wintering wildlife.

The mix of land uses and facilities for competing public demands within environmental limits should be balanced between:

- public and private;
- urban and rural;
- regional and local;

- residential and recreational;
- industrial and commercial;
- built and natural environments;
- large- and small-scale;
- active and passive;
- busy and quiet; and
- free and user-pay.

AFFORDABLE



Waterfront development and management should be undertaken in ways that provide opportunities for economic renewal and for efficient use of limited government and private-sector resources.

Where possible, social, environmental, and economic objectives should be integrated with each other, in order to achieve them as effectively as possible. For example:

- projects might be more affordable if partners co-ordinate activities and share resources;
- projects could be designed to yield multiple benefits;
- a healthy environment is a more productive setting for economic activities.

A long-term view should be adopted when decisions are being considered so that the full societal and environmental costs of proposed activities become factors in whatever choices are made. For example, incorporating environmental protection at the

outset may reduce the need for environmental rehabilitation later, thus improving long-term affordability and sustainability.

A range of waterfront parks and facilities should be available to provide opportunities for all income groups. Waterfront residential projects should offer a variety of housing types and prices, including affordable and rental housing.

ATTRACTIVE



Design and landscaping should protect, enhance, and create distinctive and memorable places along the waterfront. This means excellence in design of neighbourhoods and other developments, individual buildings, transportation elements, parks, recreational facilities, outdoor furniture, and other amenities.

Design on the waterfront should:

- protect vistas and views of the lake;
- provide a sense of continuity with the past;
- emphasize sensitive design and massing of buildings;
- consider the relationships among buildings, open spaces, and the water;
- use harmonious colours, textures, and materials; and
- include a range of landscape types, from wild and natural to manicured and formal.

SUMMARY

Ecosystem principles will help to make the most of the qualities of the Greater Toronto waterfront — the historic birthplace of our communities, the source of our drinking water, a home for wildlife, a place for recreation and relaxation, and the setting for vistas across the water.

This waterfront is inextricably linked, not only to the lake, but to the 60 watersheds that drain into it. Together, the waterfront, watersheds, Niagara Escarpment and Oak Ridges Moraine, form a major bioregion in Ontario. But the bioregion is under considerable economic, social, and environmental stress. We can no longer take its economic prosperity or quality of life for granted. It has also become clear that institutional arrangements in the bioregion are often part of the problem; bureaucratic systems are often rigid and jurisdictions fragmented.

In exploring these issues, the Commission found that the ecosystem approach offered some fresh insights and possible new ways of doing things.

By thinking of ecosystems as living systems, of which humans are a part, we can better understand our roles now and our responsibility to future generations. In the past, decision-making has often been based primarily on economic and social objectives, often at a cost to the environment. The ecosystem approach is based on the reality that everything is connected to everything else, which means that environmental considerations must be part of the decision-making process, so that relationships within ecosystems are viewed as comprising three interlinked circles: environment, community, and economy.

Viewing the bioregion as a whole helps to enhance the sense of place, as well as

understanding of the links within it: between city and countryside, natural and cultural processes, water and land, economic activities and quality of life. It also shows how regionally based economic strategies can be developed for the Greater Toronto region, building on existing advantages.

It is apparent that, to achieve healthy, sustainable communities, we must find ways to adapt and improve many processes for studying, analysing, planning, reviewing, consulting, and decision-making. The changes already under way are reflected in various organizations and processes — the work of the Brundtland Commission; the existence of national, provincial, and territorial round tables on environment and economy; new initiatives by many municipalities, conservation authorities, environmental groups, and government agencies; and increased public awareness of the issues. The Royal Commission's work demonstrated how the ecosystem approach could be applied in specific areas and situations, as described in subsequent chapters of this report.

The bioregion's future health and quality of life, as well as its environmental and economic sustainability, will depend on how we choose to manage the assets we have. The Commission believes that using an ecosystem approach can help to assure a future that is indeed clean, green, connected, open, accessible, useable, diverse, affordable, and attractive.



CHAPTER 2: PLANNING PRACTICE

According to the Royal Commission's publication number 12, *Planning for Sustainability* (Doering et al. 1991):

As the work of the Royal Commission on the Future of the Toronto Waterfront has progressed, it has become abundantly clear — both from the evidence of deputants and from the Commission's own studies — that the present processes of land-use planning and environmental management do not offer even minimal environmental protection, let alone the "ecosystem approach to restoring and regenerating the Greater Toronto region" advocated in *Watershed* (RCFTW 1991).

The previous chapter describes some of the changes in decision-making processes that are needed to implement the ecosystem approach in the Greater Toronto region. Many involve some form of planning: for land uses in municipalities, for watershed management, for shoreline regeneration, for development, etc.

The ecosystem concept is so all-embracing, so multi-faceted, and so dependant on things only partially within any one politician's, planner's, designer's or developer's control, that there is a tendency to pay

lip service and agree with the principle, but to avoid defining appropriate day-to-day practice. So, although the ecosystem approach to planning could and should be a revolution in planning practice, there is a real danger that it may become instead a descriptive veneer shallowly applied to doing things in the old way, just as such terms as "environmentally friendly" and "green" are sometimes used in advertising.

Because we want to focus on action rather than just on ideas or rhetoric, we offer in this chapter some thoughts on "ecosystem planning practice". For the sake of convenience, "ecosystem-based planning" has been shortened to "ecosystem planning", while "practice" is used to remind readers that performance is the ultimate test of our commitment to a healthy, sustained ecosystem. And it would be presumptuous to suggest that we can actually "plan" ecosystems: they are too complex, interconnected, dynamic, and often unpredictable. What we *can* do is undertake planning with an ecosystem perspective.

CONTEXT

Suggestions for practising ecosystem planning are offered in the context of a

The structure of our metropolitan areas has long since been set by nature and man, by the rivers and the hills, and the railroads and the highways. Many options remain, and the great task of planning is not to come up with another structure but to work with the strengths of the structure we have — and to discern this structure as people experience it in their everyday life. . . . Grappling with these gritty realities, however, provides a far greater and more exciting challenge than the search for perfection somewhere else.

Whyte, W. H. 1968. *The last landscape*. Garden City: Doubleday & Company.

number of recent and ongoing initiatives in Ontario; these have been established in response to the need to change planning processes so that we can cope with increasing and conflicting pressures on land, water, and natural systems. They include:

- the Commission on Planning and Development Reform in Ontario, chaired by John Sewell;
- the Ministry of Municipal Affairs' work on greening the planning process, a green guide to planning practice, streamlining the planning process, and identifying ways to develop provincial policies and plans;
- preparation of, and revisions to, many regional and local municipal Official Plans in the Greater Toronto region;
- co-ordination by the Ministry of Natural Resources of the Oak Ridges Moraine interim guidelines and planning study;
- the work of the Office of the Greater Toronto Area, including its *Urban*

- *Structure Concepts Study* (Ontario 1990), and its vision statement for the Greater Toronto Area in 2021;
- former MPP Ron Kanter's (1990) study, *Space for All*, which describes options for a GTA Greenlands Strategy;
- the five-year review of the Niagara Escarpment Plan (Ontario 1985);
- investigations by the Ministry of Agriculture and Food regarding innovative ways to protect agricultural lands;
- the Ministry of the Environment's Environmental Assessment Program Improvement Project (EAPIP);
- work by the ministries of the Environment, Natural Resources, and Municipal Affairs on guidelines for integrating water resource management objectives into municipal plans;
- the Ministry of Natural Resources' review of the role, mandate, funding, and composition of conservation authorities; and
- the Metropolitan Toronto Remedial Action Plan.

For several reasons, these initiatives have tremendous potential to influence planning processes at a crucial time. First, as described earlier, the Greater Toronto bioregion is at a pivotal stage of growth. If future changes are not planned carefully, environmental quality will continue to be degraded and quality of life will suffer.

Second, many municipal Official Plans are currently being reviewed or prepared. Two regions, Peel and York, are still preparing their *first* Official Plans, while Halton and Durham are revising theirs and Metro Toronto is preparing its second Official Plan. At the same time, most local

municipalities are undertaking Official Plan reviews, and many waterfront municipalities are preparing waterfront plans.

Plans now being prepared will have significant effects on patterns of development, environmental health, community life, and the economic vitality of this region for a long time to come. There are encouraging signs that some municipalities are shifting to more ecosystem-based planning; the challenge is to encourage this approach everywhere, so that these opportunities are used to ensure a healthy and sustainable future for the region.

In recognition of these needs, *Watershed* proposed a review of

...the ways in which the philosophy and principles of the ecosystem approach could best be integrated into the Planning Act and other relevant provincial legislation, as it affects the greater Toronto bioregion.

The Royal Commission subsequently convened an interdisciplinary work group on environment and planning; it was asked to prepare a background paper on issues related to integration of environmental considerations into the land-use planning process and to suggest opportunities for better integration. The resulting report, *Planning for Sustainability* (Doering et al.), was published in June 1991, and is the basis for much of this chapter.

THE NATURE OF THE PROBLEM

Planning for Sustainability concluded that there is widespread agreement on the

inadequacy of current provincial land-use planning processes to protect the environment, but there are many different views of the nature of the problem:

Environmentalists are concerned about the deterioration of the natural environment: loss of valuable natural areas such as wetlands, woodlands, and river

valleys; disappearance of prime farmlands and rural landscapes; pollution of rivers; depletion of aquifers; and so on. Provincial and municipal governments are subject to conflicting demands

for the use and protection of land, air, and water, but lack adequate resources to respond. Developers are concerned that environmental requirements are not clearly specified and that the processes being used to seek environmental protection create delays, increased development costs, and reduced options.

Clearly, the problems are many and complex. Following are some that have been highlighted during the Royal Commission's work.

PLANNING OR REGULATION?

Ecosystem planning practice has deep roots but its form is still emerging. Its roots can be traced to Henry Thoreau, Aldo Leopold, and some of the naturalists who came before and after them. The first views of Earth from space, during the 1960s, supported an ecological vision of Earth: when our planet was seen in its entirety — not as some kind of huge mechanical ball or geographic globe, but as a living, moving

Plans now being prepared will have significant effects on patterns of development, environmental health, community life, and the economic vitality of this region for a long time to come.



Cooksville Creek, Mississauga: damaged by development practices, this channel is now under restoration by the Credit Valley Conservation Authority and the City of Mississauga

orb, beautiful and fragile — people's perceptions changed. In 1969, one of the key works in bringing the ecosystem into land-use planning was published: Ian McHarg's *Design with Nature*. It showed how human needs could be met within the framework of natural systems, rather than being imposed over them, with beneficial results for both people and nature.

During this century, most responses to growing awareness of ecosystem stress have tended to be more narrow and regulatory, rather than the proactive, ecosystem-based planning advocated by McHarg and others. According to that way of thinking, parks and reserves are created in response to habitat losses, to protect fragments of green. Regulations are applied to control development in hazard lands, as a reaction to flooding and erosion. If air and water are polluted, regulations are developed to control emissions. Instead of developing a clear vision for communities, using the Official

Plan process, growth proceeds on an incremental basis, with Official Plan amendments being made to accommodate individual development applications.

Consequently, a great deal of work and money have gone into devising appropriate regulatory structures, writing regulations, administering them, and responding to them — generally in an adversarial atmosphere, in which the *proponents* and *regulators* of development see themselves as being on opposite sides.

In such an atmosphere, developers, whether public or private, spend more time, energy, and money on manoeuvring a plan through the regulatory process than in designing it creatively. Similarly, environmental agencies spend more time on essentially negative regulations than on positive planning, and nonetheless feel they are protecting the public interest, because they are stopping others from doing harm. And many land-use planners — trained to conceive

and propose plans in response to functional, ecological, and human issues — find that, when they enter public service, their jobs involve negotiating and administering regulations.

It is clear that, while regulations are an essential part of any environmental management system, they should not be seen as an alternative to good, ecosystem-based planning. We need to redress the balance, to spend more energy on developing practical, integrated techniques of planning and design, and use regulations to ensure that things happen as planned.

PROVINCIAL ROLE

In theory, the Planning Act provides opportunities for integrating environmental considerations into land-use planning and development control. In practice, however, its provisions are not being used effectively for this purpose.

The Province can comment on environmental matters when an Official Plan is being prepared, when it is being reviewed or amended, and when plans are being created for subdivisions and condominiums. However, the effectiveness of these review processes is hampered by limitations in the mandates of different provincial agencies, their general inability to reach consensus, the fact that they have inadequate resources, and the lack of enforceable and consistent standards.

These difficulties are exacerbated by the absence of clear provincial guidelines on environmental priorities and ecosystem approaches to planning. As a result, different

municipalities take very different approaches to environmental matters, depending on political will, community priorities, resources, and expertise. Some municipalities only pay lip service to the environment, while others do what they can, with varying degrees of success. Such piecemeal

and inconsistent approaches provide extremely patchy protection for ecosystems, and make it hard for developers to understand the rules of the game.

For example,

Section 3 of the Planning Act allows the Province to issue policy statements to guide municipal planning on matters of provincial interest. So far, however, issuing policy statements has been a painfully slow, contentious process. The only ones currently in effect are for floodplains, aggregates, and housing. As *Planning for Sustainability* concluded:

Inter-ministerial and inter-departmental turf wars over control and priorities make it difficult for governments to reach agreement on the substance of policy statements. Lack of political will, and the attitude that it is sometimes safer and easier to simply do nothing, impede provincial leadership. In the meantime, however, land-use decisions continue to be made without a clear statement of provincial priorities regarding the environment.

A case in point is the proposed provincial Wetlands Policy Statement. After ten years of discussions and paperwork, in September 1991 the ministers of Municipal Affairs and Natural Resources released yet another draft of the policy. The Province

While regulations are an essential part of any environmental management system, they should not be seen as an alternative to good, ecosystem-based planning.

I am convinced that these swamps, bogs and marshes were ordained from the beginning in the divine order of things to be left as natural reservoirs, and much heart-searching and thought should be exercised before they are discarded for some other use.

Attributed to a fictitious character named Samuel Woodstock who wrote for *Our Valley*, a conservation authorities newsletter, quoted in Richardson, A. H. 1974. *Conservation by the people: the history of the conservation movement in Ontario to 1970*. Toronto: University of Toronto Press.

classifies wetlands according to the degree of provincial significance — based on their biological, social and hydrological values — and has seven such categories. The Royal Commission is pleased to note that the latest draft policy includes classes I to III in its definition of provincially significant wetlands to which the policy applies.

However, in many other respects the draft wetlands policy is disappointing. It

does not have an ecosystem perspective and, if adopted in its present form, would provide very limited protection for wetlands in Ontario.

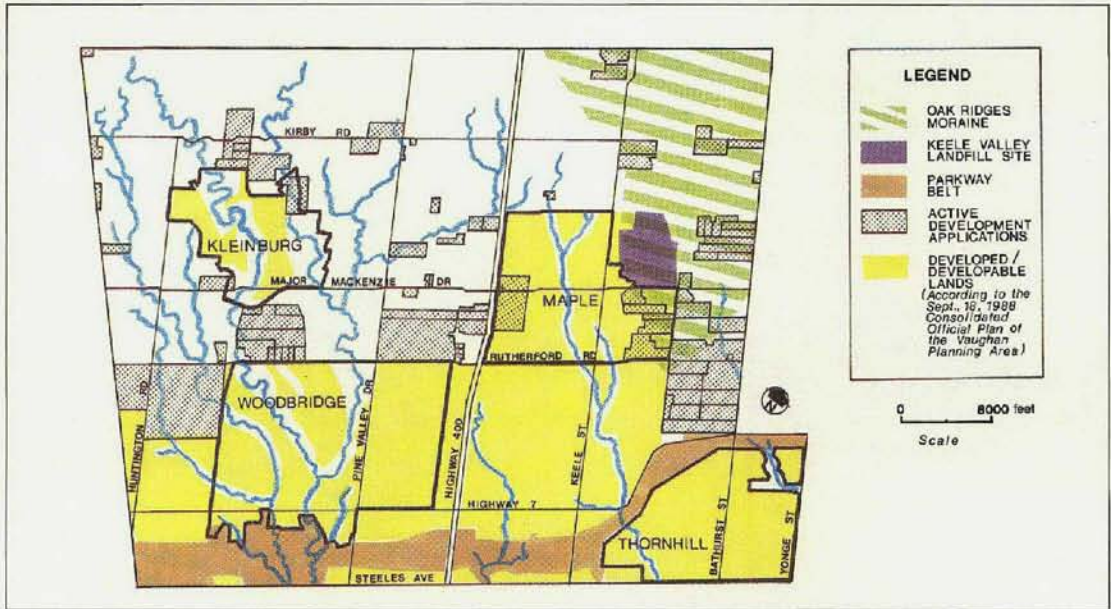
Like any policy statement under Section 3 of the Planning Act, the wetlands policy can only require municipalities to “have regard to” its provisions. This means that the policy statement must be seriously considered, and an explanation provided if it is disregarded — but it does not have to be used as the basis for decisions. Among other weaknesses of the draft policy statement, it:

- fails to emphasize the ecological relationships in wetland complexes, between wetlands and surrounding lands, or upstream influences;
- makes no provision for buffer zones around wetlands;
- has no clear definitions of compatible land uses, development, and wetland functions;



Carruther's Creek Marsh, Ajax

Map 2.1 Active development applications in the City of Vaughan



- does not prohibit public facilities and utilities from being placed in provincially significant wetlands;
- does not require planning documents (Official Plans, zoning by-laws, etc.) to be changed in a specified period to reflect the wetlands policy; and
- does not encourage municipalities to protect wetlands that are not classified as provincially significant (classes IV to VII), although these may be locally important.

MUNICIPAL PLANS

Although most municipalities in southern Ontario have Official Plans, as a rule these have not provided a long-term framework for change. Instead, distribution and form of growth have been reactive: Official Plan amendments were made in response to individual development proposals. In many places, therefore, it is assumed that development can be permitted almost

anywhere, regardless of Official Plan designations for agriculture or open space.

In some cases, absence of an up-to-date Official Plan to guide development has been attributed to the Province's position that development can be approved only if proven servicing capacity (water and sewer) is available. Thus, in York and Durham regions, Official Plan amendments have been made incrementally, as excess capacity in various parts of the trunk sewer system has been identified.

This method of operation tends to discourage local municipalities in the regions from long-term planning. The apparent disregard for existing land-use plans is quite prevalent and is illustrated by comparing Official Plan designations with the distribution of development applications. Map 2.1 shows a typical situation, in this case in the City of Vaughan. It is worth noting that in 1989, concern about the implications of incremental development in Vaughan

prompted a municipal policy review to examine future options and produce a policy framework for land use and development.

ECOSYSTEMS TRANSCEND MUNICIPAL BOUNDARIES

Another major limitation of municipal planning processes is that many ecosystem features and processes — rivers, groundwater, forests, wildlife populations and their migratory patterns, air movement — transcend municipal boundaries. This was well understood by the founders of conservation authorities in the 1940s. A. H. Richardson (1974), in *Conservation by the People*, quotes Professor A. F. Coventry's 1941 booklet, *Conservation and Post War Rehabilitation*:

Natural resources form a delicate balanced system in which all parts are interdependent and they cannot be successfully handled piecemeal. The present situation requires the coordination of existing relevant knowledge and its application where necessary, and then the development of a comprehensive plan for treating the natural resources on a wide public basis.

This perspective is evident in Section 21 of the Conservation Authorities Act, which states that an authority has power "to study and investigate the watershed and to determine a program whereby the natural resources of the watershed may be conserved, restored, developed and managed".

However, Section 28 limits authorities' regulatory powers to the use of water,

alterations to watercourses, and filling and constructing in floodplains.

Because the Planning Act does not provide for planning in areas larger than regions and counties, there is no legislative framework for land-use planning for areas defined on an ecosystem basis: watersheds, the Oak Ridges Moraine or the Greater Toronto bioregion, for example. Although

this situation could be remedied by municipalities and conservation authorities planning together for areas defined on an ecosystem basis, there are currently no incentives for them to do so. Such

incentives could be provided, for example, by provincial requirements tied to funding for specific programs or capital projects.

There are a few exceptions to this general situation. The Niagara Escarpment Plan (Ontario 1985) is based on special legislation, the Niagara Escarpment Planning and Development Act of 1973, to protect the magnificent landform and nearby lands substantially as a continuous natural environment. The Province's recent guidelines and planning study for the Oak Ridges Moraine also represent significant recognition of the need for planning based on ecological systems.

On the whole, however, it appears difficult to implement ecosystem-based efforts such as watershed and remedial action planning. Despite the fact that all Ontario conservation authorities created plans in 1983, implementation has been hampered by lack of co-ordination and commitment among the jurisdictions involved, and because the Province does not require that watershed

A major limitation of municipal planning processes is that many ecosystem features and processes — rivers, groundwater, forests, wildlife populations and their migratory patterns, air movement — transcend municipal boundaries.

plan recommendations and strategies be incorporated into municipal planning and development control processes. These issues were recognized by the Environmental Assessment Advisory Committee in its report, *The Adequacy of the Existing Environmental Planning and Approvals Process for the Ganaraska Watershed* (Byer, Gibson, and Lucyk 1989). The Committee found that:

... the interjurisdictional character of the Watershed and the Moraine poses a considerable challenge for environmentally sensitive land-use planning, particularly because of the cumulative effects problem. Each municipality has its own set of priorities and objectives based on concerns within its jurisdiction. In the absence of special efforts, there is little likelihood that the separate municipal decisions will be consistent in their approach to environmental protection, or that they will reflect a comprehensive understanding of what is needed to protect the overall environmental quality.

The Committee went on to say that the Ganaraska Region Conservation Authority is restricted in its ability to address these issues because it has neither the mandate nor the authority to establish and implement planning policies for the watershed.

DESIGN AND STANDARDS

There are many examples of situations in which standards intended to ensure public safety or engineering efficiency have the unfortunate result of constraining design opportunities.

For example, street widenings often occur at the expense of trees, which are needlessly cut down at the apparent whim of traffic engineers, who could have saved them with only minor inconvenience to the

movement of cars and trucks. Unfortunately, this is not the result of whim but because engineers are hostage to standards of practice. No one — not those who commission street-widening projects or even the prime minister of Canada — can change the established parameters of design without subjecting the engineer to the penalties of professional misconduct. Because these standards are based, among other things, on concepts of public safety, the agency that commissions an engineer is also vulnerable if the design does not meet such standards. So the tree goes; it can stay only if standards are changed.

The form and pattern of urban growth are also influenced by standards: for lot sizes, setbacks, road widths, sidewalks, utilities, storm drains, and other elements. They affect the amount of land used to build a given number of homes, urban design, the extent of paved surfaces, types of drainage systems, and so on. It seems difficult, however, to change standards well entrenched in municipal planning and development approval processes. For example, many municipalities appear reluctant to respond to developers' requests for zoning that would permit smaller lot sizes — although these are an important aspect of establishing more compact communities, and of providing affordable homes. There is apparent concern that doing so would lead to "downgrading" of communities and a decline in nearby property values.

Development and infrastructure standards should be re-examined in view of current values and the demands of the environmental imperative. Although they represent the accrued wisdom of countless committees, ultimately they are based on human values, and can be revised if values change.

REVISITING SUBURBS

The growth of suburbs and the proliferation of automobiles evolved in tandem, enabling middle-class families to move away from the noise and activity of city commerce and industry to the country life promised in the suburbs. Ironically, but not surprisingly, as more people settled in the suburbs, the less country-like they became: the success of the settlement pattern led to its growing environmental, financial, and (for some) social inadequacies.

Moreover, as settlement continues to sprawl farther away from urban cores, more valuable farmland and natural areas are lost: each new low-density subdivision adds more congestion to the roads as more people drive longer distances to city centres for employment and recreation. Commuting, with its stalled traffic and idling engines, means increased air pollution and higher stress levels. And, sadly, this pattern of development is often socially isolating and inflexible, catering primarily to “typical family” households. Finally, low-density subdivisions engender high servicing costs and wasteful land use.

A recent housing proposal in Oakville by the River Oaks Group attempts to deal with many of these problems: it reflects new thinking on suburban planning, integrating overall quality of life with respect for the natural environment.

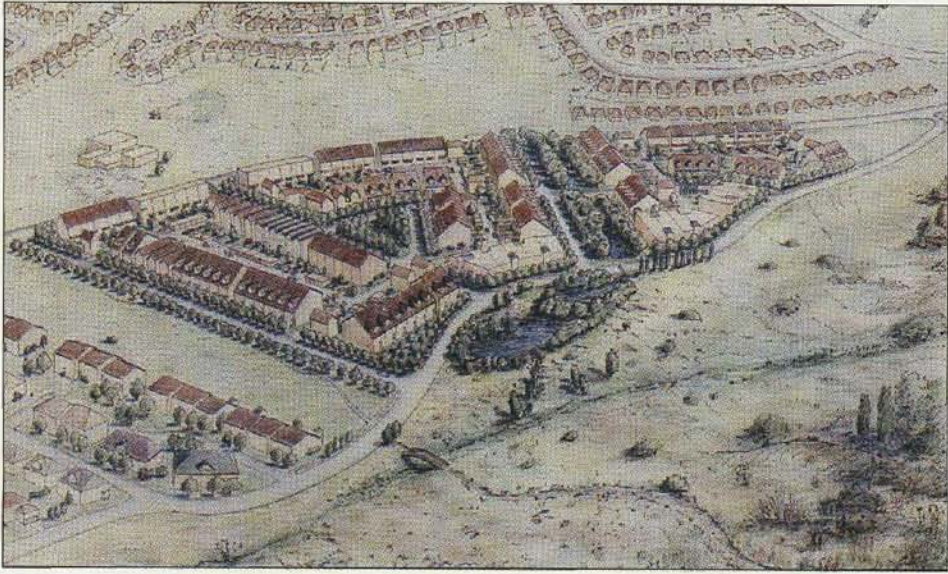
The plan envisions a community with densities comparable to those in traditional urban neighbourhoods, thus reducing the amount of land consumed. A range of housing types is proposed to meet current demographic trends — smaller households, an aging population, a rise in the number of single-parent families, and an increase in the number of households formed by people who are related or unrelated. Many of the units will be ‘convertible’ so that space can be expanded or reduced, depending on need, allowing residents to remain within the community despite changing personal or financial circumstances.

Low-density, single-use subdivisions are often socially isolating in two ways. First, in effect many are “bedroom communities” with limited opportunities for employment and entertainment. Second, the design of most suburbs emphasizes private (large closed-in yards, fences, etc.) rather than public spaces. River Oaks offers an alternative form of community in which street design emphasizes public values by carefully considering such elements as porches, balconies, sidewalks, street trees, lighting, and open spaces. The proximity to Oakville’s new Uptown Business Core, as well as local corner stores, will provide commercial and other facilities within walking and biking distance.

Because of its smaller lots, lower servicing costs and “finish-later” options, River Oaks will offer more affordable housing than is available in the surrounding community; moreover, diversity and affordability will be further enhanced by the seamless integration of co-op and non-profit housing throughout the community, rather than in segregated housing blocks.

Another objective is to minimize the environmental impact of development and to connect the community to the natural environment. Instead of levelling the development site and removing all vegetation, as is commonly done during site preparation, natural topography and existing trees will be retained where possible.

This and other projects proposed by the River Oaks Group emphasizes stormwater management that encourages percolation of rain and snow through the soil, allowing



A recent housing proposal in Oakville takes a new approach to suburban development

slow recharge into groundwater and nearby creeks. This is in contrast to traditional stormwater management which forces large volumes of water into sewers connected to nearby streams, causing erosion and degraded water quality.

The proposal focuses on providing future residents with a high quality of life and a healthy natural environment. In order for such housing projects to proceed, land must be rezoned for mixed-use and convertible housing, and standards adjusted to accommodate proposed lot and street sizes, utility right-of-ways, and setbacks. If development standards evolve to support proposals like this one, and if other developments follow its lead, future suburban growth and development can be accommodated in a much more sustainable manner.

That has certainly been the case in the past — we did not always require that bedrooms have windows, for example — and they must continue to change if we are to retain or increase the health of our community.

ENVIRONMENTAL ASSESSMENT

There is growing concern that the environmental consequences of land-use planning and development decisions are

not being fully considered. This is reflected in the number of requests that have been made to designate planning matters — such as Official Plan amendments, zoning changes or subdivision approvals — under the Environmental Assessment Act. *Planning for Sustainability* (Doering et al.1991) lists possible reasons for this situation:

- public concern that the municipal planning process is not addressing environmental concerns adequately;

- mistrust of the abilities and motives of city politicians and/or staff;
- mistrust of the provincial government review process;
- a desire to obtain intervenor funding (available for Environmental Assessment Board hearings, but not for Ontario Municipal Board hearings);
- a desire to shift the burden of proof from the complainant (the public or a government agency) to the proponent;
- a need to ensure consideration of alternatives to a proposal and alternative ways of carrying it out (neither of these is required by the Planning Act); and
- inadequate environmental information and analysis.

Complications also arise when the requirements of the Planning Act and Environmental Assessment Act (EAA) overlap. This frequently happens when municipal government activities are being considered — primarily to provide or upgrade infrastructure.

Building municipal infrastructure — roads, water supply, and sewage treatment — is subject to the EAA, through municipal class environmental assessment processes. In many cases, difficulties arise because class environmental assessment processes for infrastructure have not been co-ordinated with planning and approval processes for municipal development. For example, if Official Plan amendments have already been granted to permit development, it may be irrelevant to try to assess alternatives to

providing infrastructure that supports the development, although this is required under the EAA. Developers waiting while the class environmental assessment process is undertaken face uncertainty and delays. Moreover, the processes for public involvement become complicated, requiring two streams of activity, each with its own reports, meetings, and administrative structures.

Another problem with environmental assessment on a project-by-project basis is that it becomes impossible to address cumulative effects: the combined effects of all activities in an area over time, plus the incremental impact of new stresses

A problem with environmental assessment on a project-by-project basis is that it becomes impossible to address cumulative effects.

associated with individual projects.

Accounting for them involves two basic components: a holistic understanding of all environmental conditions in the area, as well as an assessment of how these conditions are changing or are likely to change, given alternative scenarios.

Some examples of cumulative effects include:

- effects on waterfront water quality from many sources: sewage treatment plants, combined sewer overflows, storm sewers, rivers, and atmospheric deposition;
- fragmentation of wildlife habitats as a result of many land-use changes;
- indirect effects such as development in a river's headwaters causing sedimentation of a downstream wetland;
- the synergistic effects of different pollutants, such as the formation of ground-level ozone from nitrogen



A channelized portion of Black Creek

dioxides and volatile organic compounds in the presence of sunlight.

Incremental decision-making actually contributes to cumulative effects: it may be possible to build a bridge over a creek with minimal environmental impact, but there may be damage if a new trunk sewer is added, a well dug, part of a wetland filled, and a bend in the creek straightened. Under the Environmental Assessment Act, each of these projects is examined by a separate process and there is no mechanism to assess their combined effects. This raises critical questions:

- Can municipal planning and environmental assessment efforts be co-ordinated so that the former fulfil some of the requirements of the latter?
- Should the environmental assessment process be used to evaluate alternatives

and assess individual projects in the absence of a comprehensive, ecosystem-based plan for land use and infrastructure?

Such considerations prompted Halton Region, working with the ministries of Municipal Affairs and the Environment, to propose a process that dovetails the Halton Urban Structure Review with environmental assessment requirements for infrastructure services (water, sewers, stormwater, and roads) for future growth in the region. If it is successful, this ground-breaking exercise may provide a useful example of integrating the municipal planning and environmental assessment processes.

SUMMARY OF KEY PROBLEMS

Without doubt, it is urgent to adopt an ecosystem approach to planning. We can no longer afford the past luxury of taking for granted an expanding economy and seemingly limitless natural resources. The region, with some four million residents, is already under considerable environmental, social, and economic stress. Even if the population remained stable, these stresses would have to be dealt with if the ecosystem were to be restored to health and vitality. However, given projections that, by 2021, the population could increase by 50 per cent — to about six million people — there are serious questions about how to accommodate such growth without causing further deterioration of the bioregion.

Unfortunately, current practices are not equal to the tasks. They suffer because of an over-reliance on regulations to control land use and development, based on outdated policies and standards. Our ability to

Adaptive and open-ended decisions are required to prepare us to live in future urban places with as many options available to our children and our grandchildren as those that were passed on to us by our parents and our grandparents. This implies a minimum commitment to manage the places where we dwell within a time horizon that spans five generations.

Jacobs, P. 1991. *Sustainable urban development*. Montreal: Third Summit of the World's Major Cities.

plan on an ecosystem basis is limited by municipal, politically defined boundaries, and by jurisdictional gridlock that frustrates attempts at co-operation. And while people plod through numerous planning studies, policy development exercises, and reviews of legislation, environmental damage and losses continue.

TOWARDS ECOSYSTEM PLANNING PRACTICE

By contrast, improved processes for land-use and watershed planning could play a significant role in directing future development to environmentally appropriate places, and carrying it out in a manner that protects and enhances ecosystem values.

The Commission's own work explored some ecosystem planning practices. In *Watershed* it established nine principles and showed how they could be applied across the waterfront. The environmental audit of the East Bayfront/Port Industrial Area focused on ecosystem health and recommended ways to protect, restore, and enhance the area's ecosystem. In *Planning for Sustainability*, the Commission explored ways to integrate environmental protection

into land-use planning. A Commission workshop on assessing cumulative effects culminated in a technical paper, *Towards Ecosystem-Based Planning: A Perspective on Cumulative Effects* (Davies 1991). Several practical planning exercises were commissioned and are summarized in this final report, in "Healing an Urban Watershed: The Story of the Don", "Garrison Common", and "Toronto Central Transportation Corridor".

Using that work, this chapter looks to the future and offers a broad outline of the practical aspects of ecosystem planning. As mentioned earlier, it is all too easy to put a "green spin" on the wording of traditional comprehensive plans. The task before the Toronto region's planning community is much greater and more exciting: to translate ecosystem theory into pragmatic methods of improving quality of life; establish land-use patterns; balance demand, capacity, and technology; accommodate economic development; and evaluate possible scenarios for the future. This must be done for natural and built environments at all planning scales, from region to individual site, for both public- and private-sector activities. We start by considering how ecosystem planning differs from most traditional approaches.

ECOSYSTEM HEALTH, SUSTAINABILITY, AND QUALITY OF LIFE

One of the key differences between ecosystem and traditional land-use planning is that the former emphasizes the need to balance ecosystem health, quality of life, and economic vitality. Traditional planning, on the other hand, is more inclined to focus on distributing land uses in accordance with social and economic imperatives. In ecosystem planning, policies and proposals are

not judged solely on their economic merits, or on the way they contribute to housing, recreation or other social objectives. They are also judged on whether they add to regenerating and improving a region's ecological health.

In ecosystem planning, *interactions* in ecosystems — for example, between land-use practices and fisheries or among urban sprawl, automobile use, and air pollution — become a major focus of research, analysis, and decision-making. This means more effective and creative solutions can be found to issues that are the invariable result of complex relationships.

Ecosystem planning also involves a long-term view of change, rather than expedient short-term solutions. The longer view helps people and organizations develop sustainable strategies — stretching time horizons for planning, beyond the usual ten-year life span of Official Plans or the three to five years of a politician's term of office. We need to think in terms of what

communities, and their environments, will be like in 50 years or more.

DIVERSITY

Ecosystem planning differs from many traditional methods by emphasizing, in various ways, the importance of natural and cultural diversity.

Natural ecological systems are usually complex assemblages of species and habitats. Similarly, cities that have evolved slowly and organically usually have a rich juxtaposition of places for work, play, and family life, as well as a blend of styles and structures from many decades and even centuries. Therefore, ecosystem planning is more likely to encourage a fine-grained pattern of mixed uses, rather than large, isolated districts for single-purpose uses.

It is also useful to think about the diversity within types of land use. While the Inuit have several words for snow, we have one, because snow is not as critical in urban life as it is in the Arctic. Similarly, a land-use



Cabbagetown, Toronto: residents enjoy a rich juxtaposition of nearby places for work, play, and family life

plan often has only one word — open space — for all the unbuilt lands in an area, but contains many words for settled areas: housing, commercial, industrial, transportation, institutional. As we pay greater attention to the needs of, and variations within, the natural system, we will devise new descriptive terms for land use in open areas.

GREEN INFRASTRUCTURE

The organization of settlements — the pattern of movement, uses, built form, and landscape — affects their health, beauty, and function. Simply put, some streets and blocks, buildings, parks, tracks, and expressways have been laid out in ways that make them safer, healthier, more beautiful, and/or more functional than others.

The traditional way to organize a community is by the system of services (usually underground sewers) and streets — the infrastructure. In general, major natural features are accommodated by being obliterated or avoided. The result in the Greater Toronto region is that settlements simply cut across the natural system. This sometimes leads to interesting juxtapositions, but it is a hit-and-miss affair.

In many land-use plans, natural areas and other open spaces are often cynically described as SLOAP: Space Left Over After Planning. Typically, the planning process begins by allocating spaces for residential, commercial, institutional, and industrial land use, with the road system as the primary link. Allocations are based on expected demand for these land uses, as well as suitability of location and infrastructure to support them.

But what if we were to start with the demand for natural systems? How much land should be allocated to nature? How much to other kinds of open spaces? What ecological, aesthetic, urban design, and recreational functions can they fulfil?

This would lead to a different way of structuring urban form, using a fully linked, continuous “green infrastructure”, based on natural systems, and recognizing open space — not as an absence of buildings but as a land use in its own right. This will be as important and effective a part of the public realm as the street system, and will have as strong an effect on urban form. The “Greenways” chapter of this report points out that such greenways can also provide a

host of ecological, recreational, and economic benefits. A green infrastructure may include natural habitat areas; landforms such as bluffs, valleys, tablelands,

beaches, and cliffs; aquifers and recharge areas; rural lands; heritage landscapes; parks, trails, and other open spaces; and archaeological sites.

HERITAGE

As discussed in Chapter 1, an ecosystem approach to the bioregion requires an understanding of, and an ability to work sensitively with, its natural and cultural heritage. Conventional development often sweeps the past aside in favour of all that is new and modern. Instead (as “Healing an Urban Watershed” illustrates), the natural topography and countryside can be used to define urban form, ensuring a sense of continuity with the past and

In many land-use plans, natural areas and other open spaces are often cynically described as SLOAP: Space Left Over After Planning.

maintaining valued elements of the landscape.

Similarly, in existing settlements, there are opportunities to adapt and reuse old buildings and to retain historic street, rail, and open-space patterns. In downtown Toronto, for example, many old industrial and commercial buildings along Front, King, Adelaide, and Richmond streets have been adapted for a variety of users, such as engineering or advertising companies. In contrast, the heritage of the Central Waterfront from Yonge to Bathurst streets has been virtually obliterated (notable exceptions being the Queen's Quay Terminal, Pier 4, and the Power Plant). Fortunately, there will be opportunities for more sensitive integration of built heritage on the waterfront when redevelopment begins in such places as Garrison



Pier 4 on Toronto's waterfront in 1947 (upper) and 1987 (lower): old buildings can be adapted and reused

Common, the East Bayfront, and the Port Industrial Area.

With care and imagination, the process of working with the existing world yields a more interesting and varied city in which to live and work, makes economic reuse of resources, offers a better understanding of collective history, and engenders a sense of personal attachment to the community. The landscape around us changes slowly and in a way that we can absorb and comprehend.

CAPACITY AND TECHNOLOGY

While capacity is a commonly used planning concept, ecosystem planning gives it a new connotation, one that is different from that generally found in traditional planning. For example, traffic capacity is used as a measure of how "good" a road plan is: if it is inadequate, the road size is increased and designed for ease-of-flow. An ecosystem plan places more emphasis on

Throughout the world, from Sydney's Power House Museum to Thameside warehouse/apartments and across Canada, from Granville Island's art school to Harbourfront's Pier 4 and Power Plant Gallery, essentially humble industrial structures have been given distinguished new careers through imaginative architectural design at the same time as their historic form and other essential traits have been maintained for posterity.

Stinson, J., and M. Moir. 1991. Built Heritage of East Bayfront. Toronto: Royal Commission on the Future of the Toronto Waterfront. Draft.

environmental capacity as a measure of the value of the plan.

The capacity of the ecosystem — the amount of a given human activity that it can tolerate — is not fixed, but exists on a sliding scale. It depends not only on the intensity of activity, but also on societal values, current technology, and management techniques. Carrying capacity can change over time, depending on the interaction of these factors.

A century ago, for example, Toronto Bay had reached its capacity to absorb the effluent created by what we now think of as a tiny settlement. Providing sewage treatment set capacity at a new threshold, which has been exceeded again, both because population has increased and because water quality standards are higher. Now the emphasis is on improving treatment efficiency and reducing pollution at source rather than relying on “end-of-pipe” solutions. This will probably set another capacity threshold.

An ecosystem plan should seek to define and stay within a place’s various capacities to accommodate the density and impact of people, buildings, vehicles, and wastes. It should also enhance capacity by adopting new ways of operating: solar orientation of buildings, composting and recycling, stormwater ponds, better transit, chemical-free landscaping, and so on. Thus, the notion of capacity should be used to establish both creative and restrictive measures — strategies of *what to do*, as much as *what to stop doing* — in order to maintain and expand the economic and natural health of our growing community.

FLEXIBLE BOUNDARIES

In ecosystem planning, the limits of areas being studied are decided on the basis of natural features and processes, rather

than merely on political jurisdictions — which often means they are larger.

It may also mean that there are different boundaries for different ecological processes. For example, understanding water and rivers may require a watershed perspective, while soil contamination may be confined to a relatively small area, depending on the local migration of groundwater. The sources of soil contaminants may include historical land uses, recent landfill activities, and/or atmospheric deposition from long-range transport of air pollutants. In other words, establishing the parameters for ecosystem studies must be a flexible, open-minded process that fully explores all the known sources, interactions, and outputs.

Expanding the boundaries of research does not necessarily mean increasing planning beyond one’s own jurisdiction. For example, in its waterfront planning process, the Regional Municipality of Metropolitan Toronto is using the concept of “geo-sheds” to encompass the links between watersheds, urban and natural drainage systems, coastal processes, and the shoreline. While this means studying ecological processes in jurisdictions beyond Metro’s boundaries — to help understand key ecosystem relationships in planning for Metro’s waterfront — it does not mean planning for those other jurisdictions.

There may be cases, of course, where looking beyond political boundaries to understand ecosystem processes shows that some interjurisdictional planning is essential. For example, the work of the City of Toronto’s Task Force to Bring Back the Don has demonstrated that, without concerted effort throughout the Don watershed, actions to improve water quality in the lower Don will have limited success. The Metropolitan Toronto and Region

Conservation Authority is now working to establish a task force to address regeneration of the whole Don watershed.

In addition to boundaries based on natural processes, ecosystem planning may use boundaries defined by cultural features of places — neighbourhoods for example. Along the waterfront, some jurisdictions have a tendency to treat the area between the water's edge and the nearest major road as a planning unit. In many cases, this unit should be expanded to take in entire neighbourhoods — including parks, housing, shopping areas, etc. — and to encourage the sense of waterfront community.

ASSESSMENT OF LIKELY EFFECTS

Another fundamental aspect of ecosystem planning is that it includes assessment of the likely environmental, social, and economic effects of possible scenarios for the future, and enables planners, at an early stage, to consider the potential cumulative effects of many activities and projects.

The Environmental Assessment Act process focuses on finding the alternative *with the least unacceptable impact* — a laudable but essentially negative goal. Instead, assessing effects in the context of planning for a whole municipality or a watershed encourages evaluation of all effects, positive and neutral as well as negative. The goal is to find creative solutions that offer the greatest benefit, rather than simply trying to mitigate the consequences of harmful proposals. This makes it possible to take a proactive approach to improving ecosystem health, and to provide incentives that reward successful action. The goal of “net environmental gain” can be applied to ensure that future development makes a positive contribution

to ecosystem health, by including measures to restore or re-create natural habitats.

INVOLVEMENT

Finally, ecosystem planning involves all key stakeholders working together in an open, public, fair, and efficient process. Relationships have to be worked out among many interests — the public, different levels and agencies of government, the private sector, special-interest groups, and others. Processes should be designed to facilitate co-operation, encourage conflict resolution, and build consensus. This should result in more timely and efficient decision-making, with fewer antagonistic procedures than often occur in traditional planning and environmental assessment processes.

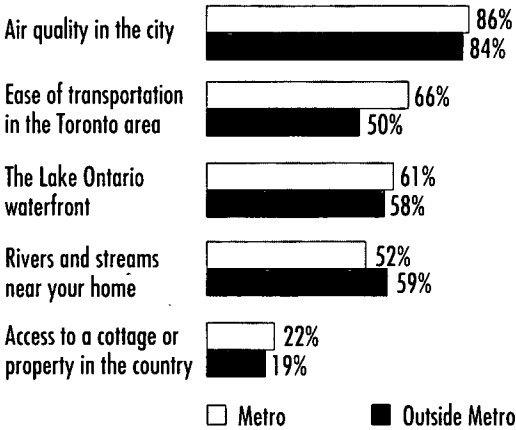
A SUGGESTED FRAMEWORK FOR ECOYSTEM-BASED PLANNING

Given these basic elements — the goal of a healthy, sustainable ecosystem; a process involving communal efforts at reaching that

To arrest the degradation of natural resources and to restore in some measure their lost productivity involves replacing the unplanned individualistic exploitation of the past hundred years by planned management based on knowledge and recognizing public as well as private interest.

From Professor A. F. Coventry's brochure "Conservation and Postwar Rehabilitation" prepared for the 1941 Guelph Conference, quoted in Richardson, A. H. 1974. *Conservation by the people: the history of the conservation movement in Ontario to 1970*. Toronto: University of Toronto Press.

Importance to Family Life



More than four-fifths of the respondents consider local environmental quality and ease of transportation to be very important to their family's quality of life.

Source: Environics Poll, 1991.

goal; and an integrated system of planning, design, and regulation — it is possible to suggest a framework for ecosystem planning, one that can be applied at different scales and in different contexts. For example, it could be used for a special region like the Oak Ridges Moraine, for remedial action planning in an area of concern on the Great Lakes, for a watershed, a regional municipality, a local municipality or a waterfront area. Moreover, the principles embodied could be applied to either public or private development.

The suggested framework includes aspects of planning and environmental assessment that are normally part of specific legislation. The following is an attempt to integrate some of the most valuable ideas embodied in legislation. It does not imply specific recommendations for changing the laws, only creative ways of combining activities to achieve the overall goal of ecosystem planning. Perhaps the best method for testing the feasibility and practicality of this sug-

gested framework would be to establish some demonstration projects, working closely with the agencies responsible for approving planning and environmental assessment processes.

DEFINING THE PURPOSE AND SCOPE OF THE PLAN

This involves addressing such questions as the need for the plan, its geographic scope, who should be involved, how long it should take, and its key issues.

DEFINING ROLES AND RESPONSIBILITIES OF PARTICIPANTS

Considerations might include information management, how participants will work together, who will make decisions and how, research and monitoring, funding for planning and implementation, and accountability for action.

ESTABLISHING GOALS

Although the overall goal of ecosystem-based planning is a healthy ecosystem, defining it and the best means of achieving it varies in different communities. Given such differences, the concept of sustainability requires, at a minimum, that goals be based on the community's long-term interests, its economy, and the environment that supports them. They should, therefore, take into account such concerns as a diverse economy, a safe environment, and the need for housing, jobs, recreation, etc.

At the same time, the ecological imperative of varied, high-quality, interconnected habitats for wildlife and for maintaining environmental processes should be addressed. Where possible, targets and indicators should be identified so that the current and future health of the ecosystem can be measured.

GATHERING INFORMATION

Good decision-making requires good information, gathered in an organized process that addresses the identified needs of the planning process. Unfortunately, existing information is often patchy, scattered, and difficult to consolidate. As recommended in the chapter “Water”, an integrated network for ecosystem science in the Greater Toronto bioregion should be established; it would be of immense value to municipalities and others undertaking land-use planning.

Synthesis of information about all aspects of the ecosystem reveals relationships within it, as well as between a study area and its surroundings. It also highlights gaps in the available information, which may be filled by further research.

At some point, it may be necessary to balance the need for sound information with the need for action: although a planning team should seek enough information to make sensible decisions, a point is reached in any process at which lack of information may become an excuse for inaction. Therefore, uncertainties associated with missing information must simply be recognized and taken into account, and the effects of any project carefully monitored and necessary adjustments made.

ASSESSING ECOSYSTEM HEALTH, LIMITS, AND VALUES

Assessing ecosystem health can involve a set of criteria derived from the established

goals; such criteria may include levels of toxic chemicals in the air, water, and soils; quality, variety, and quantity of wildlife habitat; species diversity; connections with natural and cultural heritage; economic vitality; social problems; availability of jobs, housing, recreation opportunities, community services, etc. This should lead to an understanding of:

- values to be restored, maintained or enhanced;
- opportunities;
- issues/problems to be addressed;
- constraints and hazards;
- needs/demands for facilities and services; and
- carrying capacity.

DESIGNING AND ASSESSING ALTERNATIVE SCENARIOS

Any planning process involving many people and groups will create a range of possible future scenarios. Their probable cumulative effects — on social, economic, and biophysical conditions — should be predicted and assessed in relation to the criteria used to evaluate ecosystem health. This will identify the extent to which each scenario meets the specific goals, principles, and targets of the plan, as well as any unwanted effects on the ecosystem. Technology can be adapted to suit the capacity and suitability of the ecosystem for different activities and measures can be designed to prevent or mitigate unacceptable effects.

The concept of sustainability requires, at a minimum, that goals be based on the community's long-term interests, its economy, and the environment that supports them.

To date, there has been a tendency for the “savers” and “builders” in our communities to organize in separate camps and compete over change based on short-term issues instead of long-term planning objectives. Both camps must learn to work together so that their combined efforts can produce desired long-term development and protection results.

Lemire, R. A. N.d. *Keeping our garden state green: a local government guide for greenway and open space planning.* New Jersey: New Jersey Department of Environmental Protection.

REACHING CONSENSUS ON FAIR AND USEFUL DECISIONS

Deciding which scenario to adopt and how to implement it usually lies with an elected body, such as a regional or local municipal council, or the provincial Cabinet. One of the many advantages of ecosystem planning is that it enables the planning group to present a proposed plan to a decision-making body in a way that makes the process explicit, clearly identifies the likely effects of the alternative scenarios, acknowledges uncertainties, and recognizes any remaining conflicts. A decision usually involves trade-offs among different goals, but at least the ecosystem planning process provides a clear understanding of the expected short- and long-term consequences of action.

REVIEW AND APPROVALS

One of the sources of delay and frustration in current planning and environmental assessment processes is the slow and uncoordinated approach to review and approvals by provincial agencies. This could be alleviated by several measures. As recommended

later in this chapter, provincial policies should be developed to bring more clarity and certainty to provincial requirements. Time limits on review periods could be established, with de facto approval if no review is undertaken during the specified time period. All agencies could be required to present their comments at the same time, in a public forum, and to make decisions concurrently (instead of the present step-by-step process).

MAKING COMMITMENTS FOR IMPLEMENTATION

Many good plans sit on the shelf because key stakeholders were not involved and/or because plans do not include an implementation process. Details of implementation will vary depending on the purpose and scope of the plan but, at a minimum, it is necessary to decide who will do what and when, and who will pay, perhaps through such arrangements as partnership agreements and cost-sharing programs.

MONITORING

Program monitoring should be established as early as possible, preferably before the plan is implemented, so that baseline conditions can be established. Monitoring should be designed to:

- assess changes in ecosystem health;
- evaluate compliance with the plan's goals and performance requirements; and
- provide information to assist those making decisions about individual projects.

Results should regularly be made available to the public so that implementation can be evaluated.

ENSURING THAT PROJECTS COMPLY WITH PLANS

A plan will include individual projects that have been identified during the planning process, which should justify the need for each project, examine alternatives to it, and assess its likely environmental, social, and economic effects. The remaining task is to design and assess each project to ensure that it meets the goals of the plan, that its effects are understood, and that it is carried out in the way that best protects and enhances the ecosystem.

To assist in this process of design and assessment, the plan could provide principles and performance requirements for individual projects; these might include requirements for energy and water conservation, stormwater management, recycling, health and social facilities, control of emissions to air and water, habitat protection, job creation, etc.

Projects will also be proposed that were not envisaged in the planning process. These should be assessed, in the context of the existing plan and its information base, to find out how they would affect the ecosystem. Proponents should be required to provide a statement describing likely social, environmental, and economic effects of the proposed development.

EVALUATING AND REVISING THE PLAN

Evaluation should be undertaken on a predetermined schedule to assess progress in relation to goals and targets, as well as to any changes in community needs, economic conditions or the environment. If necessary, parts of the planning process should be revisited, and the plan modified.

CONCLUSIONS

It is often said that environmental considerations add yet another layer of complexity, inefficiency, and delay to decision-making processes. The proposed framework is intended to truly integrate environmental matters, provide a fair and consistent process, and ensure that information, evaluation, and decision-making are shared and accessible. This will lead to greater efficiency and may shorten the time required for studies and approvals.

The ecosystem approach makes it possible to achieve a better understanding of systems, including economic, social, and environmental factors, and the relationships among them. This allows trade-offs to be made openly on the basis of comprehensive, balanced information in the context of a shared vision.

RECOMMENDATIONS

PLANNING ACT

The work group on *Planning for Sustainability* recommended that a provincial inquiry into land use and environmental protection be established and report back to the government within two years. In June 1991, the Province set up such a study, the Commission on Planning and Development in Ontario. It is charged with recommending changes that will entrench good planning into the land-use development process. While the scope of the Commission is not as broad as recommended in *Planning for Sustainability*, it will consider:

- meaningful public participation;
- integrating the Planning Act and the Environmental Assessment Act;
- the future of rural lands;

- urban sprawl; and
- environmental protection and cumulative effects.

The Planning Commission expects to submit a final report in 1993, which will be followed by legislative changes.

However, as *Planning for Sustainability* emphasized, it is not necessary or desirable to place all efforts at improving planning processes on hold while the Planning Commission is under way. There are a number of initiatives, many of which have already been started, that can be continued in the context of the existing Planning Act. In fact, they should be accelerated to ensure that significant environmental damage does not occur during the work of the Planning Commission. Accordingly, immediate action should be taken on the following.

PROVINCIAL POLICIES

The Province should set out clearly its expectations regarding land use, settlement patterns, and environmental protection. This means improving government processes to deal with turf wars, define common objectives and policies, provide better information services, and undertake co-ordinated reviews. Section 3 of the Planning Act, which gives the Province an opportunity to develop policies on matters of provincial interest, has been little used so far. At present, policy statements exist for floodplains, aggregates, and housing, and there are draft statements on wetlands and foodlands.

Clearly stated goals and targets should be developed by the Province in the context of a complete set of policies. In specific cases it is likely, however, that conflicts



Farmland is threatened by future development

will arise between different applicable policies; therefore, it may be helpful to develop criteria or principles to resolve potential conflicts and ensure environmental protection.

There should be built-in review mechanisms to deal with reactions to policy implementation and suggestions for improvement. Finally, policies should be mandatory, requiring municipalities to ensure that their planning, zoning, and development control processes comply.

The Province's endorsement of the nine principles and the ecosystem approach to planning, announced by the Honourable Ruth Grier on 17 December 1990, should be formalized and refined under Section 3 of the Planning Act.

RECOMMENDATIONS

1. The Royal Commission recommends that the Province prepare a comprehensive, integrated set of ecosystem-based policy statements under Section 3 of the Planning Act. These should include:

- waterfront planning and development, including shoreline regeneration, based on the Commission's nine principles;
- greenway concepts as described in Chapter 5;
- watershed management;
- natural heritage protection;
- integration and conservation of cultural heritage;
- rural lands and agriculture;
- compact forms of development and redevelopment;
- transportation and land use;

- resource conservation (water, energy, timber, soils, aggregates, and others);
- protection and rehabilitation of air, water, and soil quality; and
- land-use compatibility.

2. The Commission further recommends that, as soon as possible and while policy statements are being prepared, interim guidelines be made available to establish provincial expectations for planning and development decisions.

3. While the waterfront policy statement is being prepared, all planning jurisdictions should ensure that Official Plans, waterfront plans, Secondary Plans, and other planning documents for areas on the waterfront incorporate the ecosystem approach and the waterfront regeneration principles.

PROVINCIAL REQUIREMENTS FOR PLANNING PRACTICES

While the Planning Act provides processes for planning and controlling development, it offers little guidance for the form and content of Official Plans. To ensure that its commitment to the ecosystem approach can be reflected in municipal planning, the Province should provide guidance and set out its expectations for ecosystem-based planning and development approval practices.

RECOMMENDATIONS

4. The Royal Commission recommends that the Province, in consultation with

municipalities, other agencies, professional organizations, and interest groups, prepare guidelines for ecosystem planning practices to be used in the preparation of Official Plans, waterfront plans, Secondary Plans, watershed plans, and other planning instruments.

5. The Commission further recommends that the Province, in consultation with municipalities, other agencies, professional organizations, and interest groups, develop environmental performance requirements so that there is greater certainty and consistency in the development approval process. These requirements might include greenspace protection, setbacks/buffers between natural areas and other uses, habitat restoration, energy efficiency, ambient and indoor air quality, dust control, waste management, noise restrictions, microclimatic conditions, stormwater management, and integration of built heritage.

WETLANDS POLICY STATEMENT

The recently released draft Wetlands Policy Statement should be revised to provide effective protection for Ontario's remaining wetlands. Draft implementation guidelines have not been released for public review, making it difficult to evaluate the draft statement.

RECOMMENDATION

6. The Royal Commission recommends that the Province strengthen its proposed Wetlands Policy Statement

and bring it into effect as quickly as possible. Implementation guidelines should be made available as soon as possible. Changes should include:

- full protection for all (classes I to III) provincially significant wetlands;
- refusal to permit loss or impairment of significant wetland functions;
- consideration of ecological relationships within entire wetland complexes when making decisions about protection requirements;
- inclusion of requirements for buffer zones;
- the same treatment of public utilities/facilities as private development;
- encouragement of municipalities to protect wetlands of local significance (classes IV to VII);
- clarifications of interpretations of compatible uses and development; and
- a requirement that revisions of planning documents be made within a specified period to reflect the wetlands policy.

SITE PREPARATION

Municipalities have little power to control activities undertaken by landowners during landscaping or renovations, or by developers preparing sites for building (which often occurs even before development approvals have been given). These activities may result in irreversible damage to soils, groundwater, watercourses, aesthetic qualities, and/or wildlife habitats.

Although the Trees Act enables municipalities to pass by-laws restricting the destruction of trees, most municipalities have not done so and the by-laws that have been passed are difficult to enforce. A recent review (1991) of this issue conducted by the Tree Bylaws Advisory Committee (including representatives from the Association of Municipalities of Ontario and the Ministry of Natural Resources) recommended a new Trees Act to provide more effective protection for trees and woodlots.

The Topsoil Preservation Act, administered by the Ministry of Agriculture and Food, enables, but does not require, municipalities to pass by-laws to regulate or prohibit the removal of topsoil.

RECOMMENDATION

7. The Royal Commission recommends that the Province, in consultation with municipalities and interest groups,

amend the Trees Act, the Topsoil Preservation Act, and the Planning Act, as appropriate, to require municipalities to regulate such activities as removal of trees and other vegetation, grading, removal of topsoil, filling, and drainage. These regulations should apply to new development, redevelopment, and other activities. Interim control measures should be put in place while the legislative changes are being developed and enacted.

STANDARDS

Standards intended to ensure the safety and/or efficiency of buildings, roads, sidewalks, drainage systems, and associated facilities often constrain creative design. As a result, it is sometimes difficult to implement new ways of maintaining or enhancing environmental quality and creating more liveable places for people.



Careless site preparation damages soils, watercourses, and wildlife habitats

RECOMMENDATION

8. The Royal Commission recommends that the Province convene an interdisciplinary conference of engineers, designers, and non-government groups to explore new approaches to establishing standards of development that will accommodate emerging social and environmental objectives.

NIAGARA ESCARPMENT

The Niagara Escarpment forms the western side of the Greater Toronto bioregion. Natural landscapes associated with the shallow soils, slopes, and wetlands along this 450-million-year-old landform create a significant natural corridor across southern Ontario. The escarpment serves as a source for many of the streams and rivers feeding into the western and central parts of the Greater Toronto waterfront.

Land uses along the Niagara Escarpment are regulated by the Niagara Escarpment Planning and Development Act, which works through an ecosystem-based plan administered by the provincially appointed Niagara Escarpment Commission. In 1990, in recognition of the escarpment's unique character, as well as the protection afforded by the Act, UNESCO named the escarpment a World Biosphere Reserve.

While planning mechanisms for the Niagara Escarpment are not perfect (for example, they rely heavily on top-down, regulatory approaches) they do provide one of the most advanced models of ecosystem planning in Ontario. The Niagara Escarpment Plan (Ontario 1985) is currently undergoing its first five-year review, and changes are proposed that would provide

stricter control over pits and quarries, land severances, and some types of recreational developments.

The review offers an opportunity to examine how adequately the plan incorporates the ecosystem approach, and the strengths and weaknesses of the escarpment planning process. Such an evaluation would be useful to others seeking insights into the effectiveness of different planning tools in implementing the ecosystem approach, whether in the context of planning for municipalities, watersheds, shoreline regeneration or the Oak Ridges Moraine.

There has been no comprehensive monitoring of environmental health along the escarpment, which makes it difficult to evaluate the effectiveness of the Niagara Escarpment Plan. Long-term environmental monitoring and socio-economic research would provide valuable benchmarks to determine how well protection measures are working, and to assess their effect on land values, development costs, and so on.

RECOMMENDATIONS

9. The Royal Commission recommends that, as part of the five-year review of the Niagara Escarpment Plan, the Niagara Escarpment Commission assess the degree to which proposed revisions embody the ecosystem approach, and strengthen the plan, where necessary, to ensure it becomes a model of ecosystem planning.
10. The Commission further recommends that the Province establish a long-term environmental monitoring system along the Niagara Escarpment, to

document the plan's effectiveness in protecting and rehabilitating the environment. This monitoring effort should become part of the research and information network for the Greater Toronto bioregion, proposed in the "Water" chapter.

11. The Province should examine how the ecosystem planning approach used by the Niagara Escarpment Commission could assist in development of more ecologically responsible planning in all jurisdictions, especially in interjurisdictional planning for such features as the Oak Ridges Moraine and the shoreline.

OAK RIDGES MORaine

The Oak Ridges Moraine, spanning about 160 kilometres (100 miles) from the Niagara Escarpment to the headwaters of Cold Creek (a tributary of the Trent River) is a ridge formed of the silt and debris left by receding glaciers during the last Ice Age. Its rolling hills, basins, kettle lakes, and wetlands are among the most scenic landscapes in southern Ontario.

The moraine also has great ecological significance. Its porous layers of sand, silt, and gravel provide deep aquifers, sources of groundwater that feed springs and cold-water streams, many of which flow south, forming larger rivers that end in Lake Ontario. The aquifers also supply drinking water to many hamlets and towns on the moraine.

In *Watershed*, the Royal Commission recommended that the Province take immediate steps to preserve the values of the Oak Ridges Moraine and to undertake a planning study regarding conservation, groundwater

protection, trail locations, cumulative effects, and future development.

In July 1990, the government expressed a Provincial Interest in the Oak Ridges Moraine. In June 1991, Implementation Guidelines for interim protection were published and a planning study was initiated to develop a long-term strategy for protecting and managing the moraine.

Unfortunately both the guidelines and the planning study are limited to the portion of the Oak Ridges Moraine that lies within the Greater Toronto Area — which excludes major parts east and northwest of the GTA boundaries.

Although the guidelines are comprehensive and well-intentioned, they may be vulnerable to misinterpretation and might not be strictly applied to protect the moraine. This concern was recently highlighted by the chair of the Ontario Municipal Board (OMB). In commenting on an application for a development on the Oak Ridges Moraine (Kirby Heights, a proposed 14-estate-lot subdivision in Durham Region), Morley Rosenberg said the guidelines are not applicable to OMB decisions because they have no legal status under the Planning Act.

In addition, some potentially harmful activities are "generally exempt" from the Oak Ridges Moraine Guidelines, including aggregate extraction, minor variances, building permits, and individual consents.

The terms of reference for the Oak Ridges Moraine planning study do not include examining possible implementation mechanisms. But this is a crucial element of ecosystem planning, needed to ensure that action is consistent among jurisdictions and that it addresses interjurisdictional concerns.



Albion Hills Conservation Area, Oak Ridges Moraine

RECOMMENDATIONS

12. The Royal Commission recommends that the Province extend the expression of Provincial Interest, Implementation Guidelines, and the planning study to include the entire Oak Ridges Moraine — not just the portions in the Greater Toronto Area (See Map 1.1).
13. The Commission further recommends that the Province, the Ontario Municipal Board, and the municipalities in the Oak Ridges Moraine ensure strict compliance with the guidelines, and that they carefully scrutinize proposals that could be exempted.
14. The Oak Ridges Moraine planning study should be expanded to include a

description and evaluation of possible implementation mechanisms for the long-term strategy, taking into account the experience of the Niagara Escarpment Commission in conserving a similar landform feature and associated ecosystems.

WATERSHED PLANNING AND MANAGEMENT

Over the past four years, the Province has undertaken several reviews of conservation authority funding, organization, membership, and mandate.

In *Watershed*, the Royal Commission recommended that the Province review the mandate and functions of conservation authorities, in order to determine whether the current review should include more fundamental reforms. It also recommended

that conservation authorities assume a greater role in, and receive core funding for, managing watersheds and protecting natural habitats.

This role was recognized in a 1991 draft of "A Conservation Strategy for the Conservation Authorities of Ontario":

The Conservation Authorities of Ontario have as their vision watersheds of ecological integrity where human needs are met in balance with the needs of the natural environment (Association of Conservation Authorities of Ontario).

However, current proposals by the Ministry of Natural Resources (MNR) focus primarily on identifying core and non-core activities for the authorities. This reflects a preoccupation with what MNR will fund, rather than the potential of conservation authorities to employ a watershed perspective in protecting and managing resources. In fact, the core/non-core list doesn't even mention watershed planning or strategies.

A number of other issues affect the ability of conservation authorities to work effectively in ecosystem conservation. Their limited regulatory powers — focused primarily on flood and erosion control — are among several factors that severely restrict the ability of conservation authorities to protect natural areas and systems, and to undertake comprehensive, proactive watershed planning and management. Other factors include the narrow range of activities funded by the Province and, especially in smaller authorities, insufficient staff, resources, and expertise.

The result is fragmentation of watershed management among different government agencies. Because of their watershed jurisdictions and wide-ranging activities,

however, conservation authorities work in areas of interest to departments of many ministries, including Municipal Affairs, Natural Resources, the Environment, Agriculture and Food, Tourism and Recreation, and Education.

It might be more appropriate to consider partnerships between individual conservation authorities and other government agencies, so that each could build on existing strengths in different parts of the Province. In addition, interministerial co-ordination of funding and programs would help to meet conservation authorities' needs in an integrated way.

Another factor that restricts the effectiveness of conservation authorities as ecosystem stewards is the way authority members are chosen. When the government of the day formed a Conservation Authorities Branch in 1944, it was understood that conservation was a grass-roots matter. According to A. H. Richardson (1974), in *Conservation by the People*, Dana Porter, then-Minister of Planning and Development, speaking at the 1944 London Conference on River Development in Southern Ontario, said:

The main necessity in a programme of this kind is that it must have, to be really effective, the fullest possible co-operation and the fullest understanding. . . on the part of the people who are living in the region. . . Unless we can keep the public fully advised and fully aware of the nature of the problems and unless we can carry their continued support, any policy that may be attempted by any government will be sure to fail.

Most members of an authority are appointed by municipal councils, and are frequently municipal politicians and staff.

(In addition, a maximum of three members may be appointed by the Province.) Although this ensures accountability to municipal government, in most areas it means that few authority members have the appropriate training or commitment for ecosystem-based planning and natural resource management.

Watershed strategies initiated by conservation authorities (e.g., the Rouge River Watershed Management Strategy co-ordinated by the Metropolitan Toronto and Region Conservation Authority) and/or Remedial Action Plan processes (such as the Metro Toronto Remedial Action Plan) are not necessarily integrated with municipal land-use planning and development approval processes. As a result, ecosystem-based watershed management may be thwarted, resources may be haphazardly expended, and opportunities to protect, restore, and/or enhance ecosystems may be lost. Work under way by the ministries of the Environment and Natural Resources, in consultation with the Ministry of Municipal Affairs, conservation authorities, and municipalities, on the integration of water resource management objectives into municipal plans should help to address these issues.

RECOMMENDATIONS

15. The Royal Commission recommends that the Province, in consultation with conservation authorities, municipalities, and non-government organizations:

- recognize ecosystem-based watershed management and conservation as a primary role of conservation authorities and amend

Section 28 of the Conservation Authorities Act to give them regulatory powers consistent with this role;

- examine ways to assist co-operative initiatives among conservation authorities and provincial government agencies; and
- revise the basis for appointing members to conservation authorities so that more representatives of local non-government environmental/conservation groups are included, while strong municipal representation is maintained.

16. The Commission further recommends that municipalities work with RAP teams and conservation authorities to integrate remedial action plans and watershed strategies into land-use planning and development approval processes.