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**IMPACT ASSESSMENT AND URBAN PLANNING:  
AN INVESTIGATION OF THEIR INTEGRATION IN THE  
LARGER MUNICIPALITIES OF ONTARIO**

by

**Erin Nicholas Novakowski**

A thesis presented to the University of Ottawa  
in partial fulfilment of the requirements for  
the degree of Master of Arts in Geography

Ottawa, Canada, 1993

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## ABSTRACT

The objectives of this thesis are to:

- examine the nature and attributes of impact assessment and urban planning as processes;
- determine the utility of integrating impact assessment (IA) with urban planning;
- investigate the extent to which the larger municipalities in Ontario have achieved integration of impact assessment and urban planning;
- provide an inventory of the characteristics exhibited by those municipalities in Ontario using impact assessment in their urban planning process;
- suggest avenues that can be explored by future research within the impact assessment/urban planning domain.

For the purpose of empirically investigating the extent to which the integration of IA and urban planning exists across the province, a questionnaire was sent to the urban planning departments of Ontario's thirty-three largest municipalities. In addition, the survey was supplemented by case studies of two municipalities (Ottawa and Oakville) that use impact assessment in their urban planning processes.

The key research finding is that although the potential utility and support for integrating impact assessment with urban planning is high, the level of integration actually achieved across the province tends to be limited either to development initiatives that are contiguous with environmentally sensitive areas, or that involve contentious issues with a high public profile. In general, therefore, while the advantages of integration are as yet largely unrealized across the province, the portents of change are becoming evident in municipalities such as Ottawa, Metropolitan Toronto and North York where the mandate of impact assessment has been enlarged to include either policies or private initiatives, or both.

## RÉSUMÉ

Les objectifs de cette thèse sont:

- d'examiner la nature et les caractéristiques des processus de l'évaluation environnementale et de la planification urbaine;
- de déterminer l'utilité des évaluations environnementales appliquées à la planification urbaine;
- d'étudier l'étendue de l'intégration de l'évaluation environnementale à la planification urbaine réalisée par les plus grandes municipalités de l'Ontario;
- de fournir un inventaire des particularités de l'évaluation environnementale utilisées par les municipalités l'intégrant dans leur processus de planification urbaine;
- de suggérer des pistes qui pourraient être explorées lors de futures recherches.

Dans le but d'étudier empiriquement l'importance de l'existence de l'intégration de l'évaluation environnementale à la planification urbaine dans la province, un questionnaire fut envoyé aux départements de planification urbaine des 33 plus grandes municipalités de l'Ontario. De plus, l'enquête fut complétée par l'étude pratique de deux municipalités (Ottawa et Oakville) qui utilisent l'évaluation environnementale dans leur processus de planification urbaine.

La principale observation résultant de cette recherche est que malgré un fort potentiel d'utilisation et de soutien en faveur de l'intégration de l'évaluation environnementale à la planification urbaine, le niveau d'intégration effectivement atteint à travers la province tend à se limiter soit au développement d'initiatives concernant des zones écologiquement sensibles, soit impliquant des enjeux conflictuels avec la population. De ce fait, alors que les avantages de l'intégration ne sont généralement pas encore (et de loin) réalisés à travers la province, des présages de changement s'annoncent. Dans des municipalités comme Ottawa, la région métropolitaine de Toronto et North York, le mandat de l'évaluation environnementale a été élargi pour inclure des initiatives tant publiques que privées.

## ACKNOWLEDGEMENTS

I would like to take this opportunity to acknowledge, in print, my gratitude to my thesis supervisor: Dr. Barry Wellar. Through him, I came to appreciate the ultimate tenet of science: Conclusions are only as good as the methods that support them. As well, whenever this thesis threatened to consume me, he reined me in and kept me on track. I thank him from the bottom of my heart for his belief in me, for his unceasing ability to 'separate the signal from the noise,' for his tough but necessary commentary on my writing, and ultimately, for his wisdom in the matters of science and culture. I can only hope that his high academic standards are evident in this thesis.

I also wish to acknowledge the considerable input and efforts of my thesis examiners: Dr. Roger Needham and Dr. Leon Ploegaerts of the University of Ottawa, and Dr. Mark Seasons of the National Capital Commission. As well, over fifty planners and other professionals from a range of disciplines contributed their time, insight and expert opinions concerning the empirical research component of this thesis. I thank each of them.

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Chapter 1  
Introduction - Impact Assessment and Urban Planning: An Investigation  
of their Integration in the Larger Municipalities of Ontario

In this introductory chapter, a concise formulation of the thesis topic is provided in the *Problem Statement* section. An overview establishing the need for urban impact assessment (UIA) in city planning is elaborated in the *Problem Context* section.

**1.0 Problem Statement**

In the 1970s and 1980s, many of the larger municipalities in Ontario suffered from the consequences of urban plans and planning that failed to precede and properly guide unprecedented growth and urban development. Now, in the 1990s, these same municipalities are trying to cope with the downward or reverse pressures brought on by a prolonged recession. Impact assessment, a process of inquiry capable of improving decision making, represents a possibility for enhancing the effectiveness and efficiency of existing urban planning processes. In that context, the present research concentrates on the following dimensions of the relationship between impact assessment (IA) and urban planning:

1. An examination of the nature and attributes of impact assessment and urban planning as processes;
2. A determination of impact assessment's utility to the urban planning process;
3. An empirical investigation of the extent to which the larger municipalities in Ontario have integrated impact assessment with urban planning;
4. An inventory detailing the characteristics exhibited by those municipalities in Ontario using impact assessment in their urban planning process;
5. Identification of research directions that can be explored by future research within the impact assessment/urban planning domain.

In other words, the existing and preferred states of affairs concerning the use of impact assessment in urban planning processes in Ontario are explored.

The central research hypothesis is:

*Impact assessment has evolved into a process of inquiry that should be integrated into the urban planning processes of Ontario municipalities.*

This hypothesis is to be accepted or rejected *a priori* by considering the various advantages and

disadvantages that accompany the integration of impact assessment with existing urban planning processes in Ontario, as well as by empirical research that supports or counters the integration hypothesis.

### 1.1 Problem Context

Similar to other phenomena subject to external and internal processes, cities evolve or, for that matter, devolve over time. After more than a century of urbanization on this continent, cities continue to be fertile objects of study. Urban geographers, urban planners, urban sociologists and economists are among those whose research has focused on the attendant 'urban problem.'

According to Wellar (1982: 39), the 'urban problem' can be characterized as:

a tightly wrapped *ensemble of problems* (for example, congestion, sprawl, pollution, unemployment, crime, anomie, poverty, housing shortages, high costs, poor delivery of social services, loss of park and prime agricultural land, obsolescent manufacturing firms and industries) which are integral, non-separable parts of the process of urbanization.

Gregg and Posner (1990: 76) found that violence, drug-related activities, pollution, and the cost and availability of housing were Canadian phenomena that could easily be added to this characterization of the urban problem. This 'ensemble of problems' changes over time as the nature and demography of cities are altered by the interconnected processes of urbanization, development and redevelopment.

The understanding of humanity's place in the environment, urban and otherwise, has evolved into the realization that the intersection of natural and human-driven forces are extremely complicated and multidimensional interactions. For example, Livingston (1990: 109) recounts the postulation that "ecology is not only more complex than we think, it is more complex than we can think." And, in The Death and Life Of Great American Cities, Jacobs (1961: 7) commented that:

the simple needs of automobiles are more easily understood and satisfied than the complex needs of cities, and a growing number of planners and designers have come to believe that if they can only solve the problems of traffic, they will thereby have solved the major problem of cities.

A gross oversimplification such as that identified by Jacobs is particularly seductive when an attempt is made to find alternatives, or any alternative, to facing the multifaceted urban problem. The reality is, however, that dealing with the difficulties in and of cities on a sector-by-sector basis not only fails to address the roots of the urban problem, it admits to another failure: that is, the failure to appreciate that the urban problem, when regarded as a subset of the larger so-called environmental problem, is a manifestation of the "things gone and going wrong" with the interaction of human and natural processes (Wellar, 1990b: 1).

By recognizing the importance of cities in the global context, the World Commission on Environment and Development (WCED) places the urban agenda in the forefront of public and private endeavours. The WCED's renowned text, Our Common Future, devotes an entire chapter to the "Urban Challenge," and addresses the "situation in industrial world cities" (e.g. the West and Japan). The WCED's characterization of cities in the industrial world, while critical and foreboding, is presented alongside a platform of optimism:

local authorities usually have the political power and credibility to take initiatives and to assess and deploy resources in innovative ways reflecting unique local conditions. This gives them a capacity to manage, control, experiment, and lead urban development (WCED, 1987: 241-242).

Taking a lead from the work and reports of the WCED at the global level, and other reports at the regional and local levels produced by both government and non-government agencies (e.g. Pollution Probe, Human Ecology Foundation, etc.), it appears clear that the environmental problem is entrenched and widespread. Moreover, traditional methods used to investigate environmental problems are unable to effectively deal with the magnitude and complexity involved. Consequently, a persuasive argument can be made for the formulation of an innovative

process of inquiry that can analyze a component or components of the environment and reconstitute or synthesize the research products within the context to which they are relevant. Impact assessment is one such process of inquiry.

In an urban context, impact assessment is a method for integrating environmental evaluation techniques into existing urban planning processes. More specifically, impact assessment refers to a process of investigation "designed to identify, predict, interpret and communicate information about the impact of an action" on human health and well-being, including the health and well-being of the biogeophysical and socio-economic environments upon which human well-being depends (Munn, 1975: 12). It is widely recognized that to be effective, impact assessment must be integrated early in the planning process to maximize the potential for preventing or ameliorating the adverse impacts that can accompany development (Armour, 1989: 5).

Impacts and pressures arising from urbanization, development and redevelopment continue to accumulate, and the status of Canadian cities as nuclei for the self-realization of the country's citizens is facing serious criticism. Referring to growth in the urban milieu, Henry Teune (1988: 361) wrote that:

pathologies occur if growth is faster than the growth of the boundaries of the niche...the concept of growth is necessarily tied to some notion of equilibrium with maximum and minimum flows and by implication some idea of optimum based on such principles as the largest size with the least damage to the holding power of the niche.

A pathological situation arises in an urban context when negative effects outweigh positive effects; this condition is valid when a city is regarded as the container or niche. For example, the disadvantages associated with traffic congestion may begin to outweigh the benefits of using a car in a given downtown. In other words, growth in some urban dimensions (e.g. population) unaccompanied by growth in other areas (e.g. infrastructure) will lead to disequilibrium.

The fact that many of the larger municipalities in Canada, and more specifically in Ontario, have experienced and continue to experience a number of the elements of disequilibrium or the so-called 'urban pathology' is well established (Jackson, 1973; Nader, 1975; Bryfogle and Krueger, 1975; Wellar, 1982; Kemble, 1989; Gregg and Posner, 1990; Crombie, 1992). Urbanization continues to drive the engine of disequilibrium. Despite the fact that only one percent of Canada's land area is urban, the attributes of urbanization (location, concentration-dispersal, pattern of development, and urban form) all have substantial environmental implications (Lang and Armour, 1980: 179). Canada is, by the standard measures, highly urbanized (Wellar, 1981a). In 1981, 76% of the nation's population resided in the country's twelve largest cities; in 1986, that figure rose to 80% (Gregg and Posner, 1990: 75). Over 30% of the nation's residents live in the three largest cities in the country: Toronto, Montréal and Vancouver (Gregg and Posner, 1990: 72).

Some of the symptoms or effects of urban disequilibrium that fall under the aegis of urban planning include the following:

1. Traffic congestion;
2. Sprawl;
3. Environmental degradation;
4. Housing shortages;
5. Loss of greenspace;
6. Loss of wetlands and ecologically-sensitive areas;
7. Loss of agricultural land;
8. Loss of heritage resources;
9. Incompatible land uses.

It warrants noting that these symptoms or effects are not the result of growth *per se*, but rather the results of how, when and where urban growth will occur (Wellar, 1981a, 1989; Wellar and Harris, 1992). Moreover, these symptoms or effects of disequilibrium are not solely the products of growth; they can occur during times of decline or stagnancy. The widespread

appearance of these and other signs of 'things gone wrong' suggests that urban development plans and policies have failed to solve the urban concerns of the 1970s, '80s and early '90s, or to properly deal with urban change in general.

As McDonic (1988: 163) suggested, "rapid urban and industrial change brings both direct and indirect consequences for the environment and society and requires an effective response from policy makers." Similarly, Wellar (1981a: 2) observed that:

Planning must become more efficient, more effective, more productive, more sensitive in both the process and outcome aspects; to argue otherwise is to argue on behalf of waste and non-productive use of resources, and to default to deprivation and despair as the inevitable human condition for many of the world's people.

Wellar and others (Lang and Armour, 1980; Wood, 1988) have found impact assessment to be an appropriate part of planning as it seeks to deal with the changing demands and circumstances of the urban situation. The recently formed *New Planning For Ontario Commission* (also known as the Sewell Commission after Chairman John Sewell) addresses this very topic.

In June 1991, Municipal Affairs Minister David Cooke announced the establishment of a three-person commission to investigate the possible reform of land use planning in the province of Ontario. In essence, the commission is charged with the formulation of a new planning philosophy for the province, and part of its mandate is to make recommendations concerning amendments to the existing *Planning Act*. More specifically, the commission is examining the relationship between land use planning and environmental assessment to ensure that some account of cumulative impacts is incorporated into the planning process. One observer has gone as far as to suggest that:

it would not be surprising if the commission recommends amalgamating the Ontario Municipal Board and the Environmental Assessment Board and consequent changes to the *Planning Act* and *Environmental Assessment Act* (Shier *et al*, 1991: 26).

Despite the good intentions of the commission's sponsor and mandate, Wellar (1992) is concerned that the recommendations of the commission may 'go the way' of previous commissions on planning reform: into the bibliographies of planning papers and nowhere else. Although the final report is yet to be written, and the outcome of the commission is far from evaluated, the research will provide a platform from which to comment on those crucial components of the commission's mandate involving the integration of environmental considerations into the planning processes of Ontario municipalities.

## 1.2 Summary

Proceeding from the foundation established by impact assessment advocates, and recognizing the need for planning reform that the Sewell Commission is investigating, this research first addresses the nature and attributes of impact assessment and urban planning, and then examines the utility of integrating the two processes.

While impact assessment is relatively new in both conceptual and operational terms, it is taking on increasing importance: as more and more things seem to be going wrong at a faster rate, with increasingly adverse consequences, there is a growing call for impact assessments to be performed (Wellar, 1988a: 148).

The tenability of this charge and challenge in the context of Ontario municipalities is investigated in subsequent chapters. This is done by means of an inventory of characteristics exhibited by municipal IA processes in Ontario, and by a critical examination of two case studies of urban impact assessment in Oakville and Ottawa. In the next chapter, the research design for accomplishing these tasks is discussed.

## Chapter 2 Research Design

Research instruments and research methodology are discussed in this chapter. Field research results that influenced the actual formulation of the research instruments are identified.

### 2.0 Introduction to Research Methodology

During June of 1992, and following an approved research design (Figure 2.0), research began with a literature review of available documentation pertaining to impact assessment in a municipal context. Information was collected from various libraries and institutions (Appendix 1), and then reviewed to arrive at an understanding of the various issues that were and are relevant to the impact assessment/urban planning relationship in Ontario. In other words, the literature review provided a foundation for thinking about and structuring an investigation into the existing and preferred state of affairs concerning this relationship.

### 2.1 Research Instruments

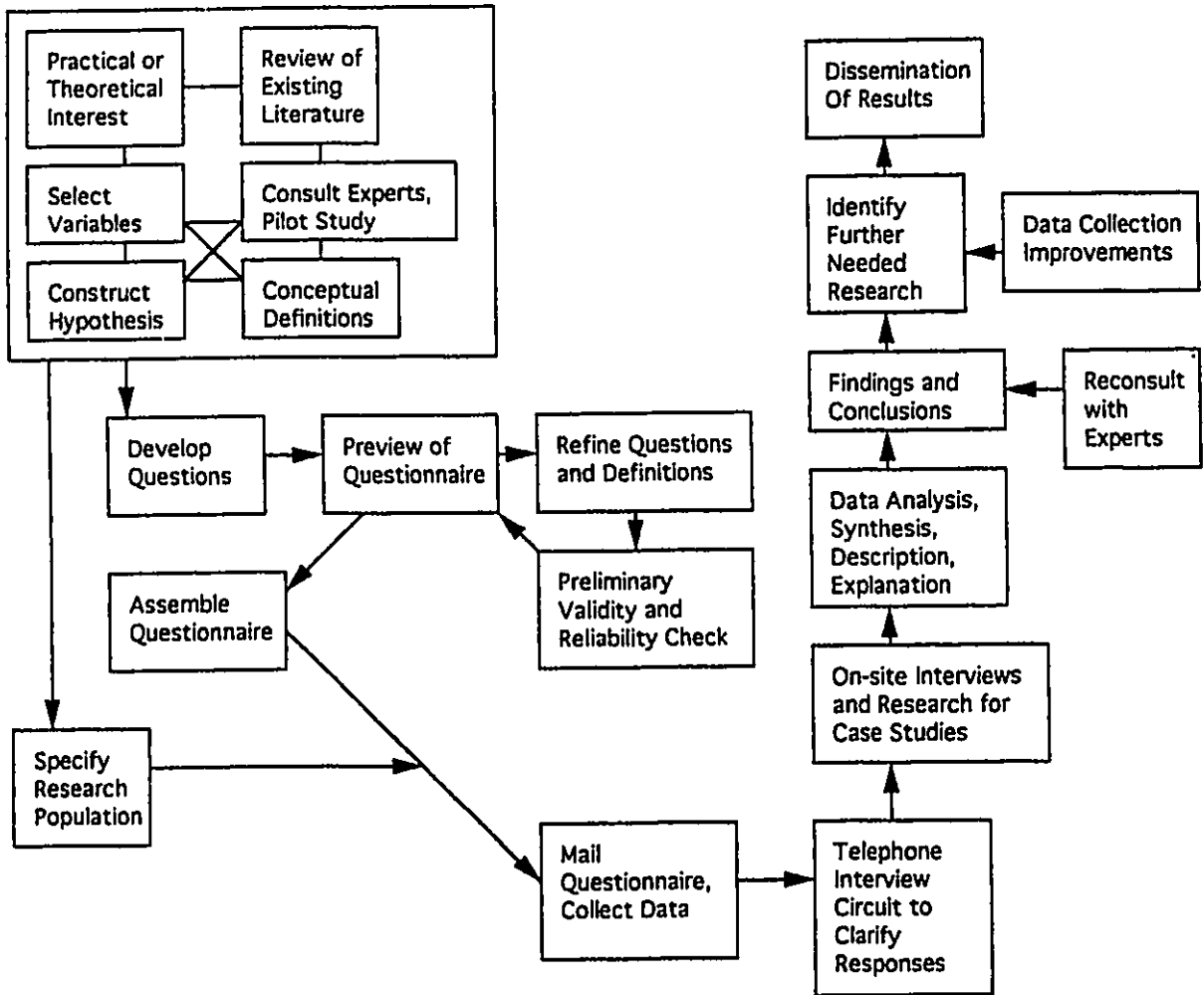
Following the review of the available literature, and again in concert with the approved research design, research proceeded with an empirical investigation of the urban impact assessment/urban planning relationship in Ontario, using the following five research instruments:

1. Interviews with urban planners in Ontario's ten largest municipalities;
2. A preview of the research instrument to be employed;
3. A formal questionnaire sent to all regional municipalities and cities in Ontario with a population over 100,000;
4. Another interview round to clarify answers to the questionnaire;
5. On-site visits and interviews at the two municipalities chosen as case studies.

The field research component began in late June of 1992 when the author interviewed (by phone) ten urban planners (each one working specifically in either impact assessment or in environmental planning) in ten of the largest cities in Ontario (Appendix 2). The cities involved were: Brampton, Etobicoke, Hamilton, London, Mississauga, Nepean, North York, Ottawa,

Figure 2.0 A Diagrammatic Representation of the Practical Research Design.  
Adapted from Walizer and Wiener (1978: 264).

**Statement of Problem:** Many of the larger municipalities in Ontario suffer from the consequences of urban plans and planning that have failed to properly guide growth and urban (re)development. Impact assessment represents a possibility for improving existing planning processes. The objective of this thesis is to investigate the existing and preferred states of affairs concerning the integration of impact assessment with the urban planning processes of larger Ontario municipalities.



Scarborough, and Toronto. These interviews (which represent a small-scale pilot study) covered a number of topics pertaining to the real and potential use of impact assessment in municipal planning and, for the purposes of composing the questionnaire, provided the following points, insights and/or terms of reference:

- That impact assessment is used by municipalities in the province, but mainly in larger cities, or in cities with universities;
- That there was some difficulty in differentiating impact assessment from what planners already do, whether or not a formal impact assessment process exists in a particular municipality;
- That urban planners were sufficiently apprised of the process of impact assessment that a confirmatory style of research (rather than an exploratory style of research) was justified. However, technical questions concerning impact assessment methods and techniques appeared inappropriate, since the planners indicated only marginal familiarity with them. The overall sentiment, and as expressed by one planner, appeared to be: "Leave the methods and techniques to the technicians. We just want their conclusions";
- That what was occurring in other municipalities concerning the application of impact assessment was of great interest to each of them.

Using the insights provided by the ten planners, a questionnaire was developed to be sent to all municipalities in Ontario with a population over 100,000 (according to the 1991 Census) and to all regional municipalities.

The rationale for choosing to contact planners only at cities of this size became apparent during the initial series of interviews and can be summarized as follows. First, for reasons related to the relative newness of the application of impact assessment in the urban domain and its complexity (whether perceived or real), only cities experiencing substantial development pressure would likely be able to justify instituting it. Second, impact assessment can be, and actually is in some situations, considered anathema to the development industry. This sentiment was noted as likely to occur because adoption of impact assessment would be perceived by the development industry as yet another obstacle to the completion of their projects. In brief, developers would not want the development approvals process to be complicated by any new

planning tool 'piggy-backing' on an administrative process that is already considered too complex. The suggestion from the planners was that only the larger cities could and would have meaningful impact assessment/planning expertise and experiences.

Finally, a city of 100,000 or more is considered a Census Metropolitan Area (CMA) by Statistics Canada, and is characterized by a high degree of economic and social integration (Statistics Canada, 1992a: 303). As such, cross-municipality comparisons could have some merit given that they have some features in common. Consequently, since the 100,000 population cut-off point met several basic criteria (critical mass necessary for development pressure in the city to exist, manageability of the total number of cities to be studied at the M.A. thesis level, and the long-term unchanged definition of 'metropolitan areas' by Statistics Canada), it was deemed suitable for this study.

Given the reasons discussed in the previous section, the research universe became 22 cities and 11 regional municipalities (including the one metropolitan municipality). Since a population is involved, no sampling design is required. The cities in the (research) population included the following:

- |     |             |     |                |
|-----|-------------|-----|----------------|
| 1.  | Brampton    | 12. | North York     |
| 2.  | Burlington  | 13. | Oakville       |
| 3.  | East York   | 14. | Oshawa         |
| 4.  | Etobicoke   | 15. | Ottawa         |
| 5.  | Gloucester  | 16. | Scarborough    |
| 6.  | Hamilton    | 17. | St. Catharines |
| 7.  | Kitchener   | 18. | Thunder Bay    |
| 8.  | London      | 19. | Toronto        |
| 9.  | Markham     | 20. | Vaughn         |
| 10. | Mississauga | 21. | Windsor        |
| 11. | Nepean      | 22. | York.          |

The regional municipalities involved were:

- |     |                    |     |                 |
|-----|--------------------|-----|-----------------|
| 23. | Durham             | 29. | Peel            |
| 24. | Haldimand-Norfolk  | 30. | Sudbury         |
| 25. | Halton             | 31. | Toronto (Metro) |
| 26. | Hamilton-Wentworth | 32. | Waterloo        |
| 27. | Niagara            | 33. | York.           |
| 28. | Ottawa-Carleton    |     |                 |

To establish its effectiveness prior to any mailing to the local governments and planners, the questionnaire was discussed and previewed with a professor at the University of Ottawa, an environmental impact assessment specialist, two urban planners who have an environmental focus in their work, and an industrial psychologist whose expertise lies in the formulation of questionnaires (Appendix 3). Their responses resulted in a number of changes in the language and organization of the questionnaire.

The preview fine-tuned both the organization of the questionnaire and the wording of the questions. In addition, the preview provided a sense of assurance that key issues of interest were covered. Once completed, a copy of the questionnaire (Appendix 4) was sent to the Office of the Planning Commissioner in each city and regional municipality of the research population in the expectation that the Commissioner would identify the appropriate person to complete it. Response to the questionnaire was strong. On the first mailing, 22 out of 33 cities responded (e.g. a 66.6% response rate). After a reminder mailing, another three responses were received. The remaining responses were pursued by telephone, ultimately yielding a 100% response rate.

The next component of the field research portion concerned another interview round with urban planners who responded in the questionnaire that their municipality used a formal impact assessment process. (The formal/informal distinction is very important, and is examined in detail in Section 7.2). This round of interviews was necessary to supplement and clarify

responses to the answers they had provided. These interviews yielded much information on the more complex and subtler aspects of the urban impact assessment/urban planning relationship. The final component of the field research portion consisted of choosing two municipalities that had formal impact assessment processes, and then examining these two processes in detail on-site.

The two municipalities chosen as case studies were the Town of Oakville and the City of Ottawa. The primary decision criterion for choosing these two cities was the desire to examine one of the oldest (Oakville) and the newest (Ottawa) examples of urban impact assessment in Ontario. Oakville was a pioneer in terms of the adoption of IA in Ontario. Its selection recognized that early start, and also provided an opportunity to review the quality of IA documentation over an extended period of time (15 years), and the results of having an IA process in place for so many years.

Ottawa, on the other hand, is the latest addition to Ontario's urban impact assessment field. Also, by virtue of its presence in the National Capital Region with its relatively rigorous approach to planning, and the large amount of discussion (and promises) leading up to Ottawa's IA initiative, it seemed a logical choice as the second case study site. Interviews were conducted with planners administering the process in both cities. As well, Official Plan documentation and internal reports from both cities were collected. The interviews, as well as the official and fugitive literature, provided the basis for the two case studies.

## 2.2 Research Design Limitations

Limitations in research design include the following:

1. The cut-off point of 100,000 for designation in the research population may preclude the inclusion of some forward-looking planning departments in smaller cities; and,
2. Caution must be exercised regarding the representativeness of the designated respondents; that is, there is a possibility that someone other than the ideal contact was chosen by the office of the Planning Commissioner in each municipality that answered the questionnaire.

These limitations are largely a function of the research situation, resources and interests; however, they are likely to have only a marginal effect, if any, on the general conclusions and implications arising from the study.

### 2.3 Summary

The research design is elaborated in this chapter. The literature review that preceded the formulation of the questionnaire is presented in the next four chapters. In Chapters 3 and 4, the nature and attributes of impact assessment and its subtypes are described and analyzed. In Chapter 5, the nature and attributes of urban planning as a process are addressed and the utility of integrating impact assessment into it is examined in Chapter 6. Chapter 7 presents the results of the questionnaire. As revealed in this chapter, a pilot study helped to determine that a confirmatory style of questionnaire was more appropriate than an exploratory one. The questionnaire was previewed by five experts before being mailed. Answers to the questionnaire, if ambiguous or requiring more detail, were then expanded or clarified through a follow-up series of telephone interviews.

## Chapter 3 Impact Assessment

The purpose of this chapter is to establish the nature and attributes of impact assessment. Because of the generic applicability of the term 'environment,' the concept of 'environmental impact assessment' is argued to be synonymous with 'impact assessment.' Then, the component parts of impact assessment are addressed individually. Lastly, the use and application of impact assessment in Canada's federal and provincial contexts is discussed.

### 3.0 Definition Of Impact Assessment

Defining impact assessment (IA) involves recognizing that theoretical disputes exist concerning both the content and process aspects of the concept. It also involves recognizing that what IA is, does, and is used for has been evolving over the past twenty-five years. Differences and changes may be the result of methodological refinements or they can arise due to disciplinary bias. The following review of key works suggests, however, that there is a substantive, common basis from which to move beyond both particular differences of degree or kind, and to more productively emphasize the fundamental nature of impact assessment as a generic process.

A definition provided by R.E. Munn appears to identify the core features of what environmental impact assessment (EIA) represents in the impact assessment literature (Bisset, 1980; Beanlands and Duinker, 1983; Shopley and Fuggle, 1984; Whitney and Maclaren, 1985; Duffy, 1986; Thomas, 1987; Wathern, 1988). Munn (1975: 12) defines 'environmental impact assessment' as:

an activity designed to identify, predict, interpret and communicate information about the impact of an action on man's health and well-being (including the well-being of the ecosystems upon which man's survival depends).

There are several key components of Munn's definition, and they are each briefly considered in order to highlight the generic applicability of EIA. 'Action,' as used by Munn (1975: 12), refers to any of the following: policies, proposals, programmes, operational procedures or projects.

The 'environment,' strictly speaking, is from the French for "that which surrounds" and refers to and includes every component or aspect of the physical and socio-economic reality that is perceptible to the human senses (Munn, 1975: 159). The position arrived at by Munn is supported by other researchers, but it is noteworthy that there are differences on the meaning attached to 'environment.' For example, it has been observed that:

In the 1960s and 70s, the term 'environment' was used without much thought for its implications. It meant, quite simply, the biophysical surroundings, excluding human beings and their constructed habitat. This definition reflected 2000 years of Western religious and cultural assumptions about the role of humans in the world. Human life was seen as fundamentally apart from, superior to, and in charge of the rest of the biosphere...In the 1980s, this world view began to crumble. Increasingly, the perceived gulf between ourselves and everything else is disappearing (Holtz, n.d.: 95-96).

The contention of Holtz, which corresponds with Munn's definition of what 'environment' has come to mean, is also a testimony to the opening paragraph of this section that a universally accepted definition of 'impact assessment' is unlikely. In point of fact, and apparently unbeknownst to Holtz, much research in the urban domain in the 1960s and '70s explicitly linked the built environment -- from houses to cities -- to the natural environment. For a discussion of the implications of the 'environment' broadly defined, including citations that go back to the 1940s and beyond, see Wellar (1969), who investigated the relationship between the quality of housing and its environment. Moreover, in the impact assessment portions of his Urban Affairs review, Wellar (1987) provides numerous citations and reports which attached a broad ecological-type interpretation to environment in the early 1970s, and well before the 1980s time frame that Holtz mentions.

As the third commentary on what 'environment' has come to mean, Fortlage (1990: 8) seems to make the underlying point that 'environment' is used broadly and inclusively as an all-encompassing term:

Originally the word 'environs' meant the surroundings or neighbourhood of a place; now the word 'environment' has come to be used more in the laboratory sense of the complete set of conditions in which an organism exists.

Holtz's intent, and that of Fortlage, is to describe the evolution of the word 'environment' from having a focus on the biogeophysical elements of reality to becoming a more comprehensive concept that also embraces cultural, social, economic, and even psychological concerns.

It appears that the evolution of the term began in earnest with the 17th century Cartesian distinction between mind and matter, which is sometimes cited as generating the underpinnings of the dominant worldview that separates humanity from the reality that surrounds it.

Descartes' so-called rational empiricist view involves seeing the environment "as a warehouse to be plundered," with little or no regard for the holistic realization that humanity is

intricately connected on a multitude of levels to the environment it inhabits (Rees, 1988:

275). The following chronologically-ordered selection of definitions serves to underline the encompassing nature of the term 'environment' that the word has now come to represent in the literature on impact assessment. The 'environment' is:

The totality of interrelationships between the social environment (including personal, interpersonal, and institutional components and dynamics) and the physical environment (including abiotic, biotic, and ecological components and dynamics) (Erickson, 1979: 283);

The term *environment*, in the context of the environmental impact assessment, has come to include the social and economic milieu of development proposals as well as the natural (biophysical) environment (Beanlands and Duinker, 1983: 18).

Environmental impact assessment initially was limited to, or was dominated by, analysis of effects and impacts in the physical, chemical, and biological environments....More recently, recognition that concerns about project-environment interactions are usually dominated by human environmental considerations and risks has forced the requirement for socio-economic environmental impact assessment (Conover *et al*, 1985: 343);

The Environmental Assessment and Review Process (EARP) deals with the physical and biological aspects of development proposals: air, land, water, plants, animals and people. Its scope covers the potential environmental and directly related social effects of proposals (FEARO, 1987: 1);

There has been a progressive move from an exclusive concern with physical environmental impact - air and water pollution, physical land-take, implications for flora and fauna, etc., - towards a wider concern embracing the social and economic impact to which a development proposal will give rise. This trend has been encouraged by the recognition that the total physical environmental impacts of a proposal will be heavily conditioned by the higher-order social, economic and political circumstances (Cope and Hills, 1988: 175-176).

Reference to the EIA literature indicates that the 'environment' should be broadly defined, so that it at least encompassess ecological, sociological and economic dimensions. It could be extended beyond that to include the cultural, political, and institutional framework of a society (Hundloe *et al*, 1990: 56).

And, as a final comment on the meaning of 'environment' in EIA, Fortlage (1990: 8-9) is again pertinent:

'Environment' is neither elegant nor very explicit, but it has been accepted internationally as being the set of factors in any given situation, their interactions with each other, and with factors outside the situation. Originally the factors were purely natural ones, but human factors such as 'cultural heritage' are now included in the term.

Compared to original definitions that revealed a tendency to include only biogeophysical elements, this brief listing demonstrates that the 'environment' is increasingly defined in terms of its inclusiveness within the literature on environmental impact assessment. Set within the context of the 'ecosystem approach' to planning that is being promulgated by the Royal Commission on the Future of the Toronto Waterfront (Crombie, 1992), an inclusive definition of the 'environment' facilitates multidisciplinary inputs into planning information systems. The 'ecosystem approach' to planning involves natural geographic units like watersheds instead of units that are politically defined. It involves planning for the entire geographic unit and all of its component parts, and focuses on the interrelationships among these component parts --> the natural, physical, economic, social and cultural elements of the environment (Crombie, 1992: xxi).

Given the current trends with respect to the 'ecosystem approach,' and that the 'environment' has come to mean everything and anything, it is tenable to contend that 'environmental impact assessment' is synonymous with 'impact assessment;' viz., the two terms can be, and are, legitimately used interchangeably (Beanlands and Duinker, 1983: 18). In other words, the adjective 'environmental' is redundant and, stripping away unnecessary verbiage:

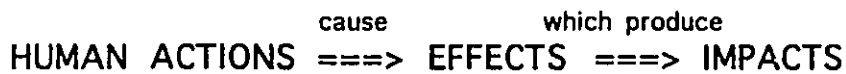
***ENVIRONMENTAL IMPACT ASSESSMENT = IMPACT ASSESSMENT***

In addition to establishing its content or substantive aspect, it is necessary to recognize that impact assessment can be viewed as a generic term referring to a process of inquiry. Moreover, it can be differentiated from (or regarded as an extension of) impact analysis because of its having due regard for the importance and significance of impacts arising from an action or non-action (Wellar, 1981a: 12). According to Wellar (1981b: 167), the key aspects of impact assessment are:

- 1) an emphasis on establishing and measuring the importance or significance of intended consequences and achieved accomplishments; and,
- 2) a directed pursued focus concerning such blunt questions as 'So what?' and 'Who cares?'

As stated, impact assessment refers to a generic process and modifiers appearing in front of the expression 'impact assessment' -- such as 'environmental,' 'social,' 'health' or 'urban' -- merely emphasize a domain and delimit the boundaries of the impact assessment in terms of the application or research focus. For example, any distinction between social impact assessment (SIA) and urban impact assessment (UIA) is incidental to the IA process (which is, methodologically, the same for both). Rather, any difference is due to the fact that UIA is IA done within a specifically urban context, with an overriding concern for the components of urbanism, urbanization, and urban systems that may be affected by human initiatives.

More specifically, the changes in the environment (urban and otherwise) that do result from human action are termed 'effects.' Effects are the outcomes of processes (e.g. the dispersing of pollutants, the displacing of persons) that are set in motion or accelerated by human activity (Munn, 1975: 21). In schematic form,



Therefore, effects precede and are distinct from impacts in that impacts are deemed not to have occurred until "a value judgment is applied to the change in the environment" (Folk, 1982: 1). Essentially then, an impact involves more than just a change to the quality of the environment. That is, it is also required that this change be perceived objectively or subjectively by particular individuals (Conover *et al*, 1985: 344) to be a matter of concern, which represents the basis of the 'so what?/who cares?' questions that were used by Wellar (1981b) to establish why impact assessment includes but extends beyond an action-reaction relationship.

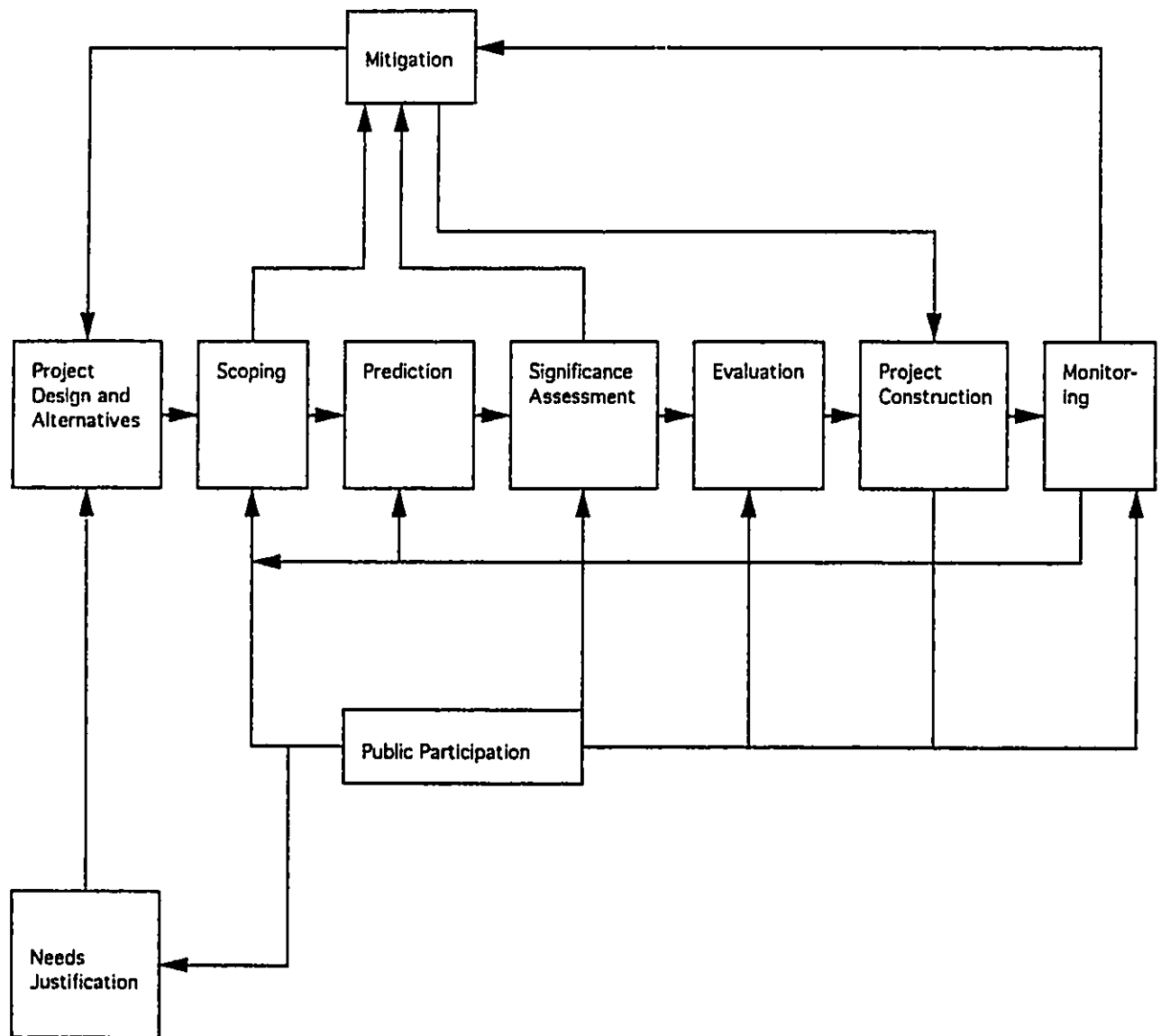
### 3.1 The Component Parts of the Impact Assessment Process

To provide insight into the application of IA as a process, a structural delineation of its component parts is presented to reveal the wide range of activities involved, and how each interacts. In the interests of providing a framework against which the strengths and weaknesses of other impact assessment processes can be judged, Whitney and Maclaren (1985: 2) itemize the following activity components for IA:

- |                            |                          |
|----------------------------|--------------------------|
| 1. needs justification     | 5. evaluation            |
| 2. scoping                 | 6. monitoring            |
| 3. prediction              | 7. mitigation            |
| 4. significance assessment | 8. public participation. |

Smith (1993: 88) identifies the Whitney and Maclaren framework as "a scientific

Figure 3.0 A Framework For Impact Assessment.  
(Source: Whitney and Maclaren, 1985: 3).



approach...[where] both social and ecological sciences are required elements of an integrated approach to impact assessment." More specifically, Smith (1993: 88) observes that the Whitney and Maclaren framework,

was developed to counter perceived weaknesses in existing methodologies for impact assessment, including a failure to distinguish between the predictive and evaluative aspects of impact assessment, a tendency to focus on either the predictive or the evaluative aspect of methodology, and a failure to understand the interplay between the objective and subjective aspects of impact assessment methodology.

For these reasons, the Whitney and Maclaren framework is accepted as a model against which individual cases of impact assessment process can be compared (Smith, 1987).

### **3.1.1 The Components of the Whitney and Maclaren Impact Assessment Framework**

#### **3.1.1.1 Needs Justification**

When an impact assessment framework is formulated, a needs justification stage is often overlooked. Recognizing this deficiency, Whitney and Maclaren argue that all policy, program or project proponents should provide adequate justification for the necessity and desirability of their initiative. The need for a particular initiative should be specifically identified, such as the need for a bridge crossing to ameliorate severe traffic congestion along a particular transportation artery (ASCE, 1986: 8). Essentially, a needs justification is like a market-viability study, and addresses the question of whether a particular initiative is warranted (Bauchum, 1985: 1).

#### **3.1.1.2 Scoping**

For Whitney and Maclaren (1985: 4), the scoping stage of their impact assessment framework involves a 'preliminary scrutiny' where the spatial and temporal boundaries of the impact assessment are defined, the environmental components of specific interest are identified, and

the relevant groups whose opinions will crystallize the criteria for significance are selected. Similarly, Duffy (1986: 17) defines scoping as being used "to determine the important issues and alternatives that should be examined." Beanlands and Duinker (1983: 29) observe that the norm in impact assessments is to "have a look at everything, at least superficially, regardless how insignificant to the public or to decision-makers." Scoping can be regarded as a mechanism to short-circuit the inclusion of these insignificant details and to facilitate the pinpointing of the issues that warrant in-depth study.

To accomplish the scoping, a mix of analytical and synthetical IA methods and techniques are used. Within the broader IA process, the methods and techniques of IA can be related as follows:

Methods aid the identification of impacts and the organization of results, while techniques provide the results. Methods and techniques are linked in impact analysis. First, impacts are identified using a method. Secondly, techniques are used to predict likely changes. Finally, data obtained using techniques can be organized, presented and, in some cases, evaluated according to the guidelines of a particular method (Clark *et al*, 1980: 17).

The following categories delimit the more common types of 'methods' noted in the literature:

1. *ad hoc* methods;
2. checklists;
3. matrices;
4. overlays;
5. networks;
6. quantitative or index methods;
7. models (Clark *et al*, 1980: 17; Rau and Wooten, 1980; Smith, 1993: 18-26).

To reiterate, in the impact assessment context, methods facilitate the identification of impacts and the organization of results, while techniques provide the results (Folk, 1982: 2). More generally, however, and from the perspective of inquiry, methods provide the logic behind the techniques selected for use in research, planning, IA, program evaluation, etc. (Ackoff, 1953: vii; Lang and Armour, 1980: v).

### 3.1.1.3 Prediction

Once the significant issues and concerns related to an initiative have been identified in the scoping, then the predictive dimension of IA becomes central. Prediction entails -- what to do, why, and how to do it -- an "explicit statement about the condition of an environmental component in the future" (Whitney and Maclaren, 1985: 8). The concerns of prediction focus on the likely nature of the impacts, and on when and where they will likely occur.

The contentious issues generally associated with prediction include the quality of baseline information, the lack or weakness of predictive methods and techniques for a variety of situations, and the uncertainty and lack of confidence in many predicted impacts (Lang and Armour, 1980: 274; Wellar and Harris, 1992). Prediction involves the application of techniques to ascertain likely or probable future states.

Some of the more common techniques used in impact assessment include the following:

1. metaphors, analogies and scenario writing;
2. simulation modelling (Lang and Armour, 1980: 275);
3. pre-project or pilot project experiments;
4. statistical techniques (e.g. analysis of variance and correlation);
5. 'expert' comparisons or extrapolations from similar situations studied elsewhere (both qualitative and quantitative);
6. time-series or trend forecasting (Lemons and Porter, 1992);
7. forecasting based on consensual expert opinion (e.g. the Delphi technique);
8. forecasting based on individual expert opinion (Whitney and Maclaren, 1985: 8-9).

By using these techniques, some indication of future conditions can be obtained for comparison with existing conditions. The quantification of future conditions normally addresses the following criteria: magnitude, prevalence, duration and frequency, risk, precedence, and importance (FEARO, 1978: 6; Duffy, 1986: 20). Overall, the prediction dimension is the "nuts

and bolts" of IA. The predicted state of the urban or other environmental element after the initiation of the action is the primary technical concern of the impact assessment process, and is a necessary condition for the assessment of consequences.

#### 3.1.1.4 Significance Assessment

Within impact assessment, there are different ways of applying the criterion of 'significance' to particular impacts. On the one hand, 'significance' can be regarded as a function of magnitude, prevalence, duration and frequency, risk, and precedence. These are the science-driven dimensions of impact assessment, whereby research and the quantification of impacts ascertain the significance of the impact.

On the other hand, the impacts of human initiatives are also judged according to the value attached to the type of impact. In general, there are a number of criteria that address the public interest, many of which are from the field of planning and include the following:

1. Health and safety;
2. Threats to livelihood;
3. Lifestyle modifications;
4. Recreational, aesthetic, educational and historical features;
5. Land use conflicts (Duffy, 1986: 20).

The preceding criteria, and others that may be specific to a particular initiative, are combined to determine the significance of the proposed action.

The Whitney and Maclaren framework makes a distinction between significance assessment and evaluation. For them, significance assessment refers to the component of IA that assesses the importance "of the magnitude of the changes forecast in the prediction stage" (Whitney and Maclaren, 1985: 4). For example, questions such as the following illustrate the sort of 'personality' that characterizes significance assessment: What value is attached, and by whom,

to the increased traffic congestion that is associated with the rezoning of a district shopping mall to a regional shopping mall?

The significance of predicted impacts, therefore, depends upon the values attached to them by the so-called 'relevant groups.' These relevant groups can be identified in the following three principal ways:

- In terms of their spatial proximity to the area affected by the policy, plan or program activity;
- In terms of the degree to which the particular group might be affected;
- In terms of the degree to which the group is able to organize their concerns and viewpoints into an effective instrument of opposition or support (Whitney and Maclaren, 1985: 6).

Since IA involves initiatives and choices of a public nature, IA is inextricably linked to the political process (Wellar, 1982). However, impacts may also be considered significant outside the realm of anthropocentric value systems. For example, schools of thought such as 'ecofeminism' or 'deep ecology' recognize some dimensions of the world as intrinsically valuable. As articulated by Naess (1984: 266), "the well-being of nonhuman life on Earth has value in itself. This value is independent of any instrumental usefulness for limited human purposes." The deep ecology and other perspectives may be of considerable importance, depending on the degree to which relevant groups are able to mobilize on their postulates.

#### 3.1.1.5 Evaluation

In the Whitney and Maclaren framework,

the evaluation stage is where decisions must be made about the importance of significant impacts within each component of the environment relative to the importance of significant impacts in other components. If several components are being compared, then the problem becomes one of evaluating and comparing the overall effect of significant negative and positive impacts on the biophysical and socioeconomic environments, for each alternative (Whitney and Maclaren, 1985: 13).

Smit and Johnston (1983: 173) suggest that alternatives can be considered against each other in terms of their potential to meet objectives such as net cost or net benefit (formative evaluation), or in terms of the success of their performance when operational (summative evaluation). The choice from among the alternatives requires some statement of the relative values of the impacts involved.

A number of evaluative methods and techniques exist, including the following:

1. Multiple objective evaluation;
2. Weighted summation (Whitney and Maclaren, 1985: 13-18);
3. Cost-benefit analysis (Howe, 1987: 5-19);
4. Decisions analysis (Bisset, 1980: 35-36);
5. The Sondheim method (Bisset, 1980: 36-37);
5. Goals achievement matrix (ASCE, 1986: 265; Won, 1990: 120-121; );
6. Multicriteria evaluation
  - the Saaty method (Maclaren, 1985: 228-230);
  - concordance analysis (Buckley, 1988: 65);
  - dominance analysis (Maclaren, 1985: 225-226).

By using these methods and techniques, it becomes possible to discriminate among the various alternatives formulated to serve designated ends or needs. Each method and technique has its own idiosyncracies, strengths and weaknesses, and should be adopted according to the requirements of each research environment.

#### **3.1.1.6 Mitigation**

Mitigation methods or measures are introduced or employed if the negative impacts of development are not acceptable. Duffy (1986: 27) defines mitigation as "an activity aimed at reducing the severity, avoiding or controlling environmental or social impacts of a proposal, through design alternatives, scheduling, and other measures." For example, the construction of a skyscraper next to a block of outdoor cafés might block access to sunlight for the cafés throughout the summer. By modifying the building design (e.g. employing a ziggurat style),

some sunlight exposure for the cafés might be maintained.

Where possible, enhancement of the physical and human environments is also to be attempted, although this is not, strictly speaking, mitigation (FEARO, 1978). Compensation methods are undertaken to provide relief from impacts that cannot be mitigated, recognizing that "compensation is due those who bear social costs without sharing equitably in the benefits" (Wolf, 1983: 271). Hence, mitigation involves efforts to control or counter-balance negative impacts.

#### 3.1.1.7 Monitoring

Monitoring involves the observation or measurement of environmental variables to determine actual changes to significant components associated with a particular initiative. It is used to produce the base data on changes arising from an initiative, and "to compare expected against actual impacts" once a policy, program or project has been implemented (Wolf, 1983: 272). According to Ontario's Ministry of Municipal Affairs and Housing (1982: 2), monitoring typically consists of the following elements when done in an urban planning context:

- a. Data collection of baseline conditions, and then of conditions following the implementation of the initiative (e.g. an urban plan);
- b. Data evaluation and comparison concerning the planned versus the actual performance of the initiative;
- c. Identification of actions required to correct a divergence between initiative intentions and initiative performance;
- d. Dissemination of results to decision makers;
- e. Amendment to initiative (e.g. plan amendment).

Three types of monitoring that are related to IA include the following:

- effects monitoring, which establishes whether a predicted change has occurred;
- compliance monitoring, which involves the verification of whether the proponent is respecting existing regulations and codes of good practice, and has properly implemented the mitigation methods they were committed to;

- compensation monitoring, which involves the documentation of supporting data that relates to any claims that may arise in relation to completion and operation of the proposed initiative (Duffy, 1986: 24; Dooley, 1985: 98-99; Duinker, 1985: 118-120).

### 3.1.1.8 Public Participation

Based on the moral recognition that those affected by a decision should have input to that decision, public participation may be defined as 'any action taken by an interested public (individual or group) to influence a decision, plan or policy beyond that of voting in an election' (Smith, 1993: 66; Smith, 1984: 253-4).

Public participation plays an important role in establishing the objectives of land use and resource use, as well as determining the acceptability of particular policies, programs, and projects as a means of achieving these objectives (Clark *et al*, 1980: 155). Within both legislated and operational IA procedures, there is normally a formal requirement for public participation whereby members of the public are permitted to express their opinions and concerns about proposed initiatives.

But despite the existence of formal requirements, Bregha (1992: 191) suggests that "the compartmentalization of environmental information among several departments, the manipulation of information to protect vested bureaucratic or political interests and, lastly, the [intentional] withholding of information" are among the central impediments to viable public participation. Nevertheless,

through the institutionalization of consultation and participation under general legislation, and also through the adoption of specific practices in which the planner and the decision-maker accept to be bound by participation procedures, the public's right to participate is guaranteed and, moreover, acquires legitimacy (Parenteau, 1988: 1).

Legitimacy is what makes public participation effective. By institutionalizing it, public participation becomes an established, formal means for the views of individuals, groups and corporations to be fairly expressed as part of the decision-making process in a democratic

society. Some of the public participation techniques that can be institutionalized include the following: information programmes, social surveys, open houses, public meetings and fora, public hearings, advisory committees, task forces, seminars and workshops, and simulation exercises (Smith, 1993: 67).

#### 3.1.1.9 Concluding Remarks Concerning the Whitney and Maclaren Impact Assessment Model

Two particulars of the Whitney and Maclaren model for impact assessment warrant emphasis:

1. The inclusion of a needs justification stage. From a developer's point of view, the usual overriding purpose driving development is profit and profit alone. A needs justification component helps ensure that the public interest is being considered alongside private interest;
2. The recursive nature of the IA process is highlighted. For example, instead of suggesting the public participation occur only after the completion of an EIS, Whitney and Maclaren (1985: 4) stress that public participation is a particularly important input into the process throughout the scoping, significance assessment, evaluation and monitoring stages.

Overall, the Whitney and Maclaren framework provides a reasonable model with which to compare a particular instance of impact assessment. Moreover, the major components that they include are in popular use in a number of IA sites and situations, and have shown themselves to be amenable to both scientifically- and socially-relevant circumstances.

In fact, like Beanlands and Duinker (1983: 7), Whitney and Maclaren (1985: 2) go so far as to suggest that the exercise of an impact assessment process can be regarded as a bonafide experiment. "In this experiment, an existing environment, composed of biophysical and socio-economic components, is perturbed by the introduction of a project, process or policy" (Whitney and Maclaren, 1985: 2). After the introduction of the external shock to the system under study, the researcher predicts the changes that will occur in the environment as a result of the initiative and its alternatives. The decision maker (normally not the researcher) then

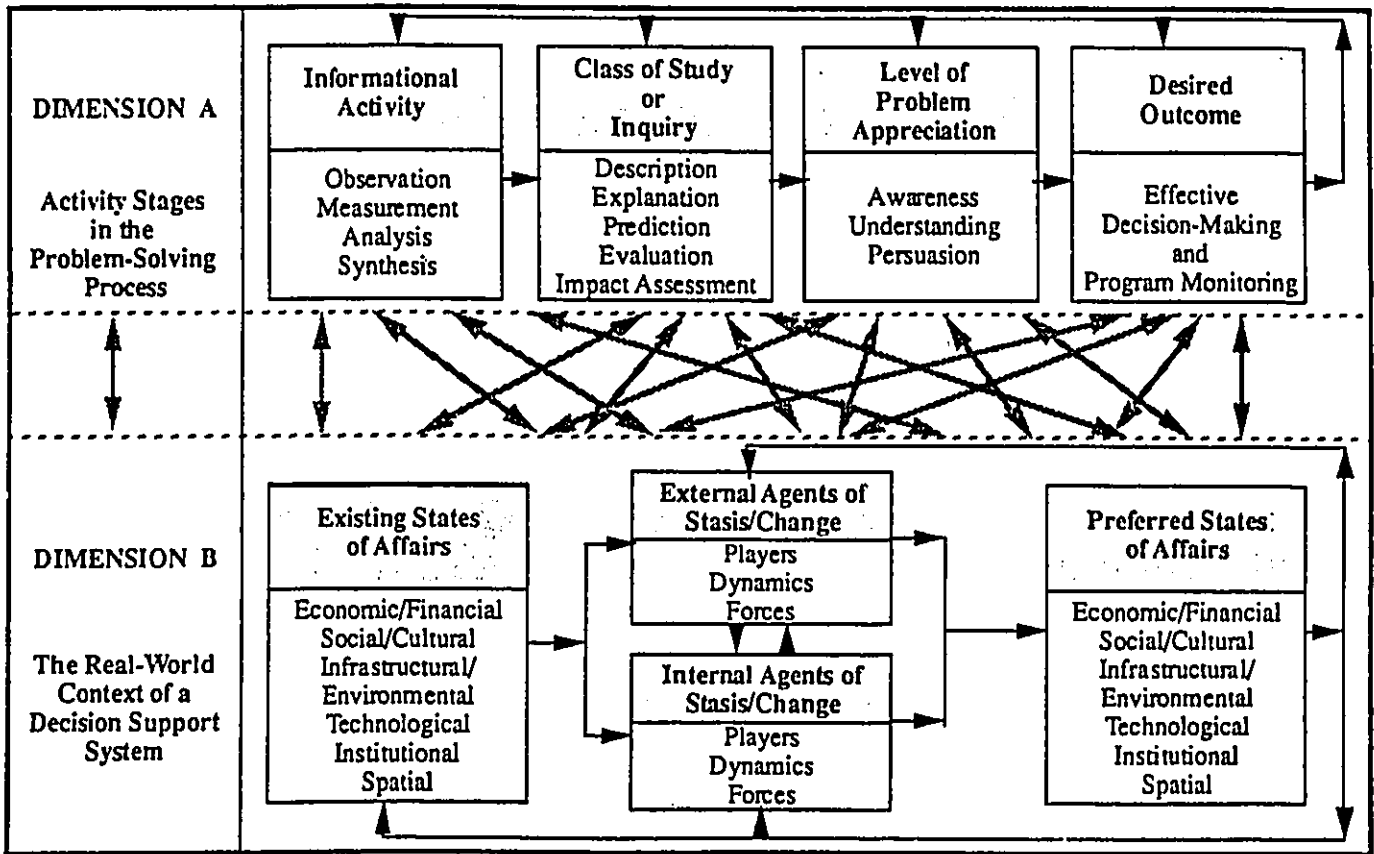
selects the option that optimizes the decision criteria. In this sense, the authors have formulated a normative process where "both social and ecological sciences are requirements of an integrated approach to impact assessment" (Smith, 1993: 88). The relationship of IA to decision making is one of support, and this is explored in Wellar's decision support system, the topic of the next section.

#### 3.1.2.0. Wellar's Decision Support System

In his framework containing the rudiments of a decision support system (DSS), Wellar (1992b: 89) delineates the activity stages in the problem-solving and decision-making process: informational activities, the class of inquiry, the level of problem appreciation pursued, and desired outcomes (Figure 3.1). Ultimately, as explained by Wellar, IA subsumes all the other classes of inquiry (description, explanation, prediction, and evaluation) because it deals with the one overriding question that the others are not designed to address or answer: What is the significance (to society and/or to the relevant groups) of the predicted impacts (consequences) that will arise from an initiative? (Wellar, 1987: 66).

Further, and following from the Wellar framework, impact assessment can be regarded as a decision support system on its own terms. The levels of problem appreciation (awareness, understanding and persuasion) are all, ideally, manifested in the impact assessment process. 'Awareness' is the process of taking account of or reacting to phenomena of all types, whether an idea, an external physical object or an internal condition (Drever, 1966: 26). In the impact assessment context, phenomena are the data of experience and are described, observed and measured in the needs justification, scoping, prediction and monitoring stages of the impact assessment process.

Figure 3.1 Rudiments Of A Decision Support System  
 (Source: Wellar, 1992b: 89).



Equivalently, 'understanding' is the process of becoming aware of the meaning of things, which entails the becoming aware of the relationship(s) between things (Baldwin, 1940: 775).

'Understanding' is the domain of science. In the impact assessment process, 'understanding' is a function of awareness and explanation. Explanation, rendered possible by analysis and synthesis, is evident in the prediction, significance assessment, evaluation and mitigation components of Whitney and Maclaren's impact assessment framework.

'Persuasion,' the third stage of problem appreciation, is the process or art of influencing an individual's opinions and actions, ostensibly by intellectual appeal (Drever, 1966: 209). The 'individual' in the impact assessment context can be identified as either members of the public (those affected by the initiative) or the decision makers (recipients of research findings, and those who ultimately decide on the fate of the initiative). Evident in the needs justification and public participation stages in the impact assessment framework, persuasion is the culmination of awareness and understanding, and is represented by the decisions and actions that are taken.

To recapitulate concerning the general nature of IA, its main functional objective is to provide decision makers and the public with an account of the consequences of alternative courses of action such that tenable decisions can be achieved. Impact assessment is concerned with asking the "so what?" and "who cares?" questions with respect to the implementation of a particular policy, program or project (Wellar, 1988a: 148). By asking those questions, impact assessment can be used by decision makers -- government, business, or individuals -- to account for the consequences arising from their decisions and activities. The process of IA has evolved considerably over the past few decades, an evolution that has involved both an enlargement of its scope and a refinement of its methods and techniques, thereby enhancing its utility to the decision-making process.

### 3.2 Impact Assessment in North America

In 1864, a Vermont-born geographer named George Perkins Marsh wrote Man and Nature. Marsh was an early commentator on the consequences arising from alterations to the landscape, and warned that "the world cannot afford to wait till the slow and sure progress of exact science has taught it a better economy" (Marsh, 1864: 52). It was a concern about unparalleled waste and poorly planned development that caused Marsh to posit that "the earth is fast becoming an unfit home for its noblest inhabitant [humanity]" (Marsh, 1864: 43). As shown by Marsh's observations of 130 years ago, recognition that urban development and other human initiatives can have deleterious impacts on the human and biophysical environments is not a new finding. However, the intensity and accumulation of accelerated environmental degradation has caused a crystallization of concern in the previous three decades.

The explosive growth of population, technology, and economic development following World War II brought second and third order consequences which, by the early 1960s, began to arouse public apprehension and concern (Caldwell, 1988: 76).

The first stirrings of the environmental movement began in the 1960s when "there was a vague unease about problems that accompanied unbridled economic growth and prosperity" (Couch, 1989: 5).

Politicians reacted by adopting new legislation or policies which resulted in the establishment of new administrative systems. Thus, by the early 1970s, many national and regional governments had set in place separate agencies to be responsible for environmental affairs (Beanlands, 1985).

More specifically, the *National Environmental Policy Act (NEPA)* became effective in the United States on January 1st, 1970. "The purpose of NEPA was to ensure that natural environmental considerations received equal consideration by federal agencies in their planning and decision-making" (Folk, 1982: 3). The environment was defined to include both biophysical and socio-economic dimensions. This Act is generally credited with spearheading impact assessment momentum throughout North America. An illustrative example of *NEPA* in practice is the study and report, Environmental Inventory of the Grand (Neosho) River Basin, done in 1970-71 for

the U.S. Army Corps of Engineers by a biologist (Cross) and a geographer (Wellar) working out of the State Biological Survey of Kansas and the Institute for Social and Environmental Studies, University of Kansas (Cross and Wellar, 1971). The terms of reference for their work included specific reference to both the biophysical and socio-economic dimensions as interdependent components of the environment.

In Canada, the first impact assessment process was established by the federal government on December 20, 1973 (Couch, 1989: 5). This process was called the federal Environmental Assessment and Review Process (EARP). In 1975, Ontario was the first Canadian province to pass comprehensive legislation, and it was called the *Environmental Assessment Act*.

Throughout North America, an environmental impact statement (EIS) became a legal requirement for projects deemed to necessitate an impact assessment. Originally, these EISs tended to encompass comprehensive inventories of natural environment components. The required thoroughness, however, ran counter to the immediate information demands of decision makers who were faced with specific issues that had been identified as critical by the 'relevant groups.' Initially, then, due to the complexity of methodology, the difficulty of actually conducting full-fledged impact assessments, and the tendency to apply IA to narrow matters of pressing concern at the moment, there was a sense that IA was too cumbersome and time-consuming to be of real value in the planning or political process (Wellar, 1990b).

However, over time, a number of changes occurred regarding the content, process and expectations aspects of IA. It has been suggested by Wellar, however, that a primary reason for convergence is that after 25 years "the world finally caught up with the original, deep-thinking that went into early papers like that of Steger and Lakshmanan (1968) in the Highway Research

Board's classic text on Urban Development Models. Now, and thanks in part to advances in electronic computing, we can better do what was conceptualized decades ago" (Barry Wellar, Pers. Comm.; see also Wellar and Harris, 1992). A second view is that presented in Table 3.0, that impact assessment evolved "from a single-purpose focus on ecological prediction to a more multi-faceted approach to development planning and control that routinely includes social and risk analysis, impact management, and so on" (Jacobs and Sadler, 1990). In other words, the scope of impact assessment "broadened from the methodology of impact analysis to encompass administrative and consultative procedures," as well as the strategic relationship between IA and decision making (Jacobs and Sadler, 1990).

In Table 3.0, adapted from Jacobs and Sadler (1990: 18), the major historical developments in the evolution of the conceptual and operational dimensions of IA are identified. One impression that can be drawn from the chronology in Table 3.0 is that the evolution of impact assessment in Canada and other Western countries appears to mirror the evolution of geography (Cope and Hills, 1988: 175). That is, many of the same questions and difficulties face the two research domains. The spatial and area studies traditions of geographical thought have been augmented by interest in human-land relationships in the past century, and by contextualism and other inter-subjective methods of inquiry in the past decades (Pattison, 1990: 203-205).

Further, in comparing the progress of IA and geography, IA has grown to embrace a concern for the environment in all its manifestations: physical, social, economic, political, institutional, financial, physiological, and psychological. An emphasis on the human element has supplanted any previous predilection to focus solely on the biophysical environment. For both domains, it appears that the original orientation (biophysical!) was in part due to the 'degree of difficulty' factor: that is, the biophysical element was the focus of attention because, in relative terms, it

Table 3.0 The Evolution Of Impact Assessment In Canada.  
Adapted From Jacobs and Sadler (1990: 18).

<u>Approximate Date</u>	<u>Evolution Of Impact Assessment in Canada</u>
1. Pre-1970	<ul style="list-style-type: none"> <li>• emphasis on safety of life and property</li> <li>• analytical techniques largely confined to economic and engineering feasibility studies</li> <li>• no incorporation of public review</li> </ul>
2. 1970	<ul style="list-style-type: none"> <li>• use of multiple objective benefit-cost analysis</li> <li>• emphasis on systematic accounting of gains and losses and their distribution</li> <li>• environmental and social consequences not formally adopted</li> </ul>
3. 1970-1975	<ul style="list-style-type: none"> <li>• impact assessment focused on description and prediction of ecological and land use change</li> <li>• formal opportunities for public scrutiny and review established</li> <li>• emphasis on accountability and control of project design and mitigation</li> </ul>
4. 1975-1980	<ul style="list-style-type: none"> <li>• multi-dimensional impact assessments incorporating the social impact assessment of changes in community infrastructure, services, and lifestyle is used</li> <li>• increasing emphasis on project justification in the review process</li> </ul>
5. 1980-1986	<ul style="list-style-type: none"> <li>• attention is given to establishing better linkages between impact assessment and policy-planning and implementation-management phases</li> <li>• research focus on effects monitoring, post-project auditing, and process evaluation</li> <li>• the search begins for more disciplined scoping, and less protracted forms of consultation based on negotiation and mediation</li> </ul>
6. 1986-present	<ul style="list-style-type: none"> <li>• scientific and institutional frameworks for impact assessment, planning and management begin to be re-thought and re-structured in response to the report of the Brundtland Commission</li> <li>• cumulative impacts of industrial and resource development on the global biosphere and regional ecosystems are new imperatives for policy reform and process adaptation.</li> </ul>

was more easily subjected to study by virtue of its readily observable attributes.

As a final note concerning the history of IA in North America, there are many parallels between the progress of IA and the progress of planning in both the content and process, or conceptual and operational dimensions. A key agent in both fields has been the emergence of increasingly sophisticated information technology (e.g. geographic information systems), which has been the enabling tool whereby complex analyses and syntheses underlying IA can be performed (Wellar, 1990c: 868-869; Smith and Wellar, 1992; Wellar and Harris, 1992: 88-91).

### 3.3 Impact Assessment In Canada

On December 20, 1973, the federal Environmental Assessment and Review Process (EARP) was established. The process was refined by a second Cabinet decision on February 15, 1977 (Couch, 1989: 13). The roles, responsibilities, and procedures comprising the process were further strengthened in legislative and political terms on June 22, 1984, when an Order-in-Council was proclaimed under the *Government Organization Act* (FEARO, 1987: 1).

The intent of EARP is to ensure that environmental consequences of federal proposals are assessed for potential adverse effects early in the planning process, and before irrevocable decisions are taken. The scope of the process includes identifying the changes that a proposed action may induce in the natural and human environments. EARP applies to all federal proposals, including those:

undertaken directly by a federal initiating department, that may have environmental effect on an area of federal responsibility, for which the federal government makes a financial commitment, or that is located on lands, including the offshore, that are administered by the federal government. This includes effects of proposals external to Canadian territory (Couch, 1989: 13).

Strictly speaking, only federal departments face EARP. However, Crown Agencies such as the

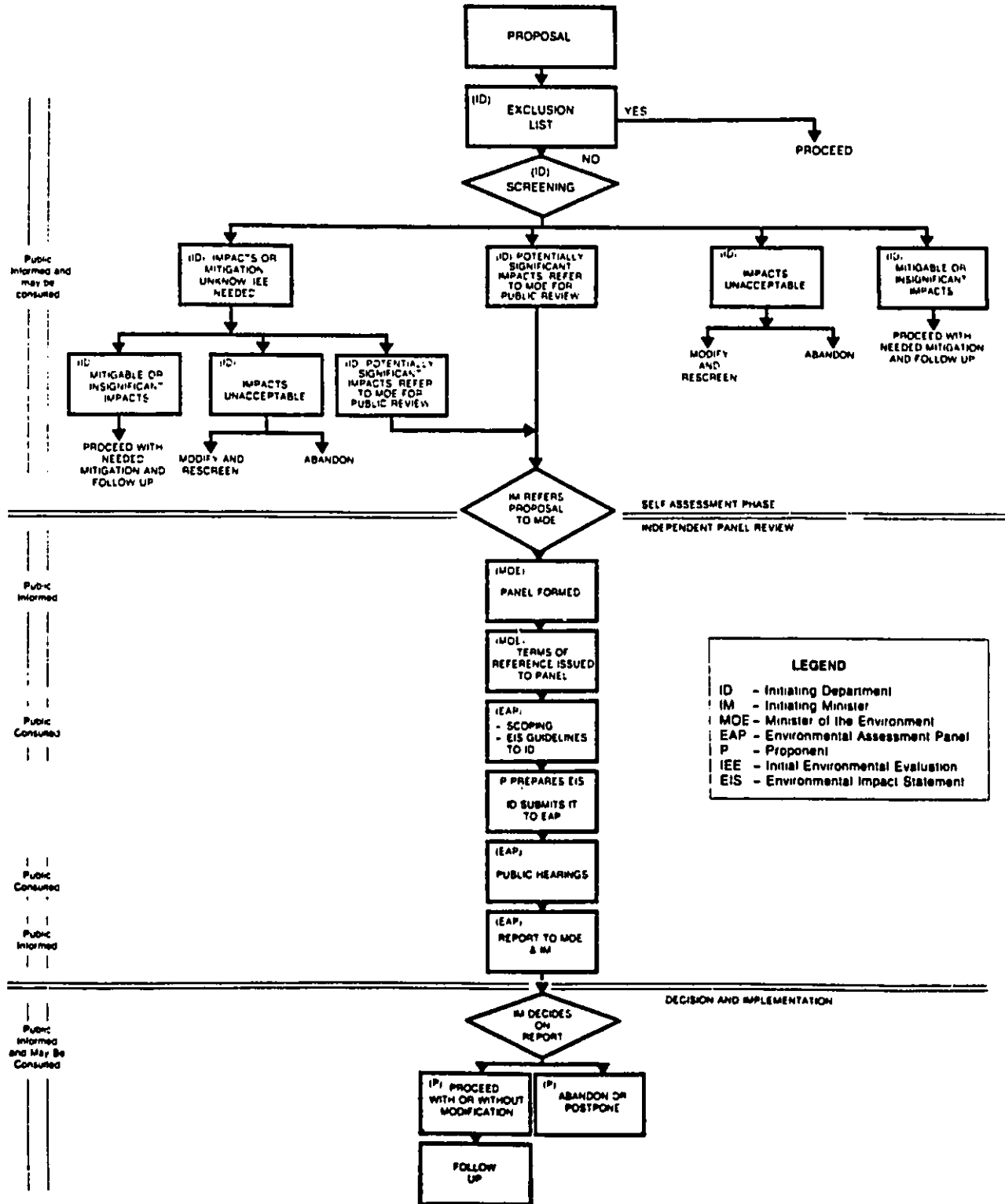
National Capital Commission in Ottawa have also adopted the mandate of the Order-in-Council (Louise Kingsley, Pers. Comm.).

In general terms, the EARP begins when the source department does a self-assessment or preliminary screening of its initiative to identify potentially significant environmental effects (Figure 3.2). The source department is expected to seek public comment even at this early stage. If there is some doubt surrounding the magnitude or risk of potential effects or impacts, an initial environmental evaluation (IEE) is undertaken. If the source department meets considerable public opposition, or if the potential impacts appear to be significant, then the Federal Environmental Assessment Review Office (FEARO) enters to review the proposal (Cullingworth, 1987: 392).

When a proposal becomes administered by FEARO, the formal dimension of EARP begins. A panel of scientific and technical advisors is convened to prepare guidelines for the preparation of an environmental impact statement. "These guidelines deal with the proposed content and detailed terms of reference for EIS preparation," and have input from interested parties, including the public (Cullingworth, 1987: 393). Once the EIS is prepared, it is submitted to the FEARO panel and is made available to the public for study. Public participation is considered crucial at this stage, and oral or written submissions are encouraged.

Finally, the FEARO panel prepares its own report and provides recommendations (Couch, 1989: 14). A number of scenarios can ensue: The Panel can recommend that the project be permitted to proceed as planned, or that certain changes or conditions must be met, or that the project is unacceptable because of potential impacts. Thereafter, the minister of the federal department involved makes a decision concerning the fate of the initiative. In the case of important or

Figure 3.2 The Federal Environmental Assessment and Review Process  
 (Source: Couch, 1989: 12).



high-profile proposals, Cabinet may address the initiative in Parliament (Cullingworth, 1987: 393). FEARO is independent of Environment Canada, although its Executive Chairman reports directly to the federal Minister of the Environment. The federal EARP, as of 1989, is shown in Figure 3.2.

Smith (1987: 12-13) argues that Canada's federal EARP is on the bottom rung of a four-rung ladder concerning the legislative provisions for IA. "The absence of any legislative basis for the Federal Environmental Assessment and Review Process (EARP) and the continued weakness of its bureaucratic position....consign Federal provisions for EIA into the bottom....category" (Smith, 1987: 13). It is noteworthy, therefore, that EARP was implemented as a Cabinet directive which gave the responsible authorities a wide range of discretionary power in its application, and not as a law of general application.

More recent federal legislation, Bill C-78 or the *Canadian Environmental Assessment Act*, was tabled in the House of Commons in June, 1990 (FEARO, 1991: 1). Bill C-78 was repealed soon after, and was reintroduced as Bill C-13. The new bill's First Reading was May 29, 1991 (LaBarge, 1991: 11) and was given Assent on June 23, 1992 (Government of Canada, 1992).

Substantial revisions to the EARP process were involved, including the following:

1. All major federal projects are to undergo mandatory assessment (currently there is substantial discretion permitted);
2. Legal requirements are instituted necessitating the investigation of cumulative effects, alternative courses of action, formalized public consultations, and justification for the proposal;
3. Public review panels are given the power to subpoena;
4. Monitoring plans are required (FEARO, 1990).

Notwithstanding these changes, Bill C-13 still does not include a formal enforcement mechanism that can be exercised, and the continued inclusion of discretionary language, (*viz.*, conditional instructions based on 'could' and 'should' and other assorted permissive terms)

continues to give federal authorities a wide range of discretion in undertaking EIA (Jenkins, 1992: 96). For example, Section 34 of the Act still permits an initiating department to implement an action if the impacts can be justified given the circumstances, which ultimately means that political expediency can take precedence over environmental objectives.

Despite the far-reaching scope of the existing EARP, one implication of not embodying EIA processes in legislation (as would occur with passage of Bill C-13) is that the federal government is not obliged to have, show or call for full commitment to the process. It has been suggested that the rationale for this lack of legislative basis for EIA is that "to prevent any direct inroads on the decision-making autonomy of established departments, EARP was assigned a purely advisory role" (Rees, n.d.: 4). Obviously, where there is no law, no law can be broken or enforced, which means that the public has no legal recourse in the courts if the impact assessment process needs to be challenged on its finer or broader points. Consequently, EARP requires Parliamentary endorsement, not just Cabinet's endorsement. The central shortcoming, therefore, is that a Cabinet directive (which is what EARP is) can easily be changed or ignored, without public or parliamentary debate, and is not binding on future governments. On the other hand, if embodied in legislation, EARP would be binding on succeeding governments (until revoked by another Act) and would comprise an expression of commitment by the current government. On the provincial level, most jurisdictions passed major EIA legislation or enhanced the legal basis of their EIA process between 1978 and 1988, following Ontario's lead in 1975 (Couch, 1989: 6).

### 3.4 Impact Assessment In Ontario

"The Ontario *Environmental Assessment Act*, which came into force in 1976, established the first formally legislated environmental assessment process in Canada and one of the first in the

world" (Gibson, 1990: 63). The *Act* is intended to inform decision makers and the public of an initiative's consequences before the initiative is implemented. "The purpose of this Act is the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment" (Government of Ontario, 1990: 6). In other words, the administrators of the Act have a broad mandate.

As to the content or purview of the *Environmental Assessment Act* (Government of Ontario, 1990: 2), the 'environment' is defined inclusively. The broad range of components of the 'environment' that are explicitly identified include the following: air, land or water; plant and animal life including man; social, economic and cultural conditions that influence living in Ontario; any building, structure, machine or other device or thing made by man; and any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activity. Consequently, the *Act* can have a wide reach when applied, since the 'environment' includes both the natural and built milieux and the relationship(s) between them.

In terms of its application or pertinence, the *Act* applies to undertakings by public bodies, the government, municipalities and any major commercial or business enterprise designated by regulation (Shier *et al*, 1991: 12). Implementation of the *Act* is by regulation, although the provincial Minister of the Environment may exempt proponents or undertakings from application of the *Act*. For example, Shier *et al* (1991: 12) observe that Regulation 205/87 provides a number of exemptions (e.g. all municipal undertakings costing less than three and a half million dollars).

Revisions to the *Act* formulated in 1980 included the "incorporation of municipal activities and the development of class environmental assessment as a new type of assessment" (Fitzgibbon,

1987: 35). Consequently, projects initiated by Ontario Government Ministries and Agencies, as well as large urban projects (e.g. those implemented by a utility), are subject to the Act (MOE, 1987: 2; Couch, 1989: 35).

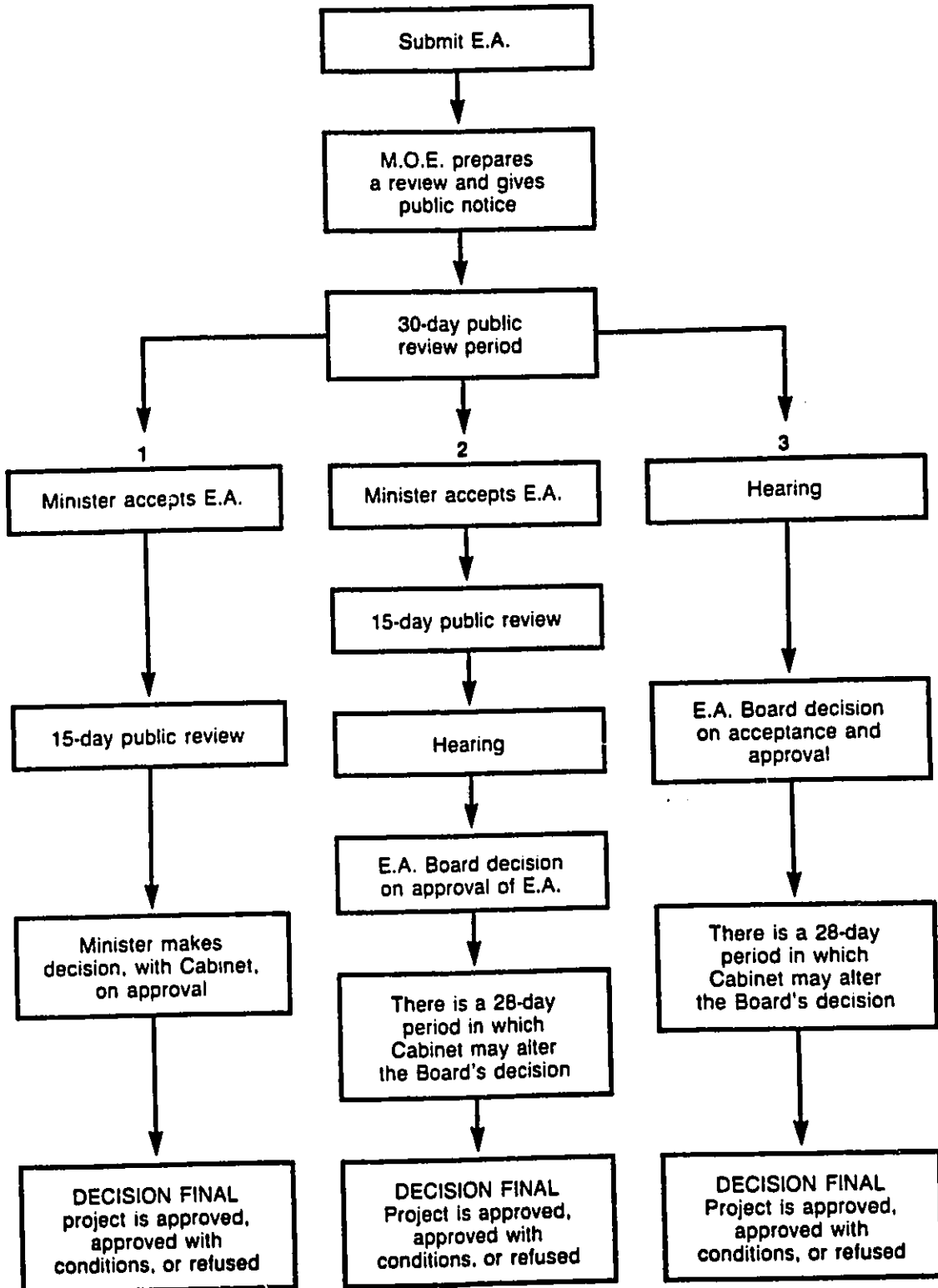
Within Ontario, an individual assessment is done for a project when special environmental effects are predicted. Conversely, a so-called Class environmental assessment (EA) "is prepared for certain types of projects which have common characteristics, are carried out in very similar circumstances, recur frequently, and have a predictable range of effects" (Couch, 1989: 35). With a class assessment, the environmental assessment process has certain standardized requirements (e.g. specific engineering studies, specified public consultations) that must be met in order for the proposal to get approval. For example, municipal water and sewage projects, as well as road widenings, face class environmental assessment. Conversely, municipal waste disposal sites and facilities involve individual environmental assessment processes (Shier *et al*, 1991: 15).

The process in Ontario involves two discrete decisions:

- Acceptance of the EA document, *viz.*, whether the document is sufficient for the Minister of the Environment or the Environmental Assessment Board to decide whether and under what circumstances the initiative can proceed;
- Approval of the undertaking, *viz.*, whether the Minister or the Board decides to approve or deny an initiative (Couch, 1989: 35).

The provincial counterpart to FEARO is the Environmental Assessment Branch of the Ontario Ministry of the Environment. The provincial process begins with the Ministry and is summarized as follows (Figure 3.3). First, the proponent must ascertain if the initiative is subject to the Act; this is done in consultation with the Environmental Assessment Branch. If the Act applies, then an EA is required and has to be submitted to the Minister of the Environment. The Environmental Assessment Branch distributes the EA to all interested parties (including the

Figure 3.3 The Review Procedure in Ontario under the *Environmental Assessment Act*.  
 (Source: Couch, 1989: 36).



public) and to the appropriate provincial ministries and agencies. At this point, the Minister may choose to either order public hearings (if public opposition is considerable), to accept the EA, or to request amendments or further research (Couch, 1989: 37). If public hearings are not necessitated, and with agreement from the provincial Cabinet, the Minister of the Environment decides on whether to accept the initiative (with or without conditions). There have been a number of critiques of the IA process in Ontario, including a great deal of coverage in the popular print media, and especially with respect to controversial projects. The writings of Smith (1987) and Fitzgibbon (1987) are now six years old, but it appears that their findings continue to hold, and to provide a reasonable interpretation of the status of IA in Ontario. In regard to the content of and authority or will behind IA-related legislation, Smith (1987: 13) argues that Ontario falls under a second tier category along with Quebec and New Brunswick.

Smith further suggests that first tier provinces have strong, clear legislation, are committed to protecting the environment and invoke strong public participation measures. The second tier category has the "same basic strong points" as the first tier provinces, but experiences problems due to legislative loopholes and political exemptions (Smith, 1987: 35). With respect to the adoption of IA, Fitzgibbon (1987: 38) observes that "impact assessment has developed into a widely accepted and reasonably effective process of environmental protection in Ontario." But more recently, Smith (1993: 40) has come to suggest that "neither Ontario nor the federal EARP represents a good normative model for impact assessment in Canada."

The Sewell Commission acknowledges some of the shortcomings of the existing legislation. For example, the review of infrastructure projects "is undertaken through a Class Environmental Assessment under the *Environmental Assessment Act*. Given the linkage between municipal

planning and infrastructure development, it would make sense to move review of these projects into a class environmental process under the *Planning Act*" (Commission On Planning and Development Reform In Ontario, 1992: 70). However, the Sewell Commission does not, at this time, appear to envision a larger role than this for IA and plan-making, and public and private development projects (Greg Tokarz, Pers. Comm.).

As it currently stands, engineering, transportation or public works departments of regional and municipal governments have a legislated responsibility to comply with the requirements of the *Environmental Assessment Act*. It is precisely with regard to legislation that IA and planning have a key divergence. That is, the provincial *Environmental Assessment Act* does not specifically empower a city in Ontario to introduce its own municipal impact assessment process. Instead, it is the *Planning Act* which regulates land use planning in the province, and to which one must turn for the relevant enabling legislation. The *Planning Act*, as it is currently written, does not require planning departments to implement a formal IA process (Greg Tokarz, Pers. Comm.). As discussed in Chapters 7 and 8, this has not prevented some forward-looking municipalities from adopting IA formally in their Official Plans.

### 3.5 Summary

In addition to briefly addressing the formal use of IA in Canada and Ontario, this chapter established the generic characteristics of impact assessment and the history of its application as accepted in the geographic, planning and environmental science literature. Because of the way the 'environment' is currently defined, it is suggested that environmental impact assessment and impact assessment are one and the same thing. When different modifiers such as 'urban,' 'health,' or 'social' appear in front of the term 'impact assessment,' this suggests a delimitation of domain, not kind; this is explored in the next chapter.

## Chapter 4 The Different Types of Impact Assessment Applicable to the Urban Domain

This chapter introduces different types of impact assessment: social impact assessment, health impact assessment, technology assessment, risk assessment, cumulative impact assessment and, central to this study, urban impact assessment.

### 4.0 The Different Foci of Impact Assessment

The literature on environmental impact assessment includes a number of specialized types of impact assessment: social impact assessment, health impact assessment, technology assessment, risk assessment, cumulative impact assessment and urban impact assessment. Although each has its own characteristics and features, strengths and weaknesses, the processes of each sub-type conform (more or less) to the Whitney and Maclaren general impact assessment framework presented in the previous chapter.

#### 4.0.0 Social Impact Assessment (SIA)

SIA is impact assessment that concentrates on the "distinctively human side of human environments" (Wolf, 1983: 255). A more stringent definition is provided by D'Amore (1978), that SIA:

is an attempt to predict the future effects of policy decisions (including the initiation of specific projects) upon people, their physical and psychological health, well-being and welfare, their traditions, lifestyles, institutions, and interpersonal relationships.

According to Gold (1978: 108), the central question addressed by SIA is: "What difference is the proposed development making and likely to make in the lives of residents of the area targeted for development?" Gold stresses the site-specific focus of SIA, that SIA's orientation targets the people who work, rest and play in the area affected by the initiative. The spatial delimitation of the SIA study area will, of course, vary and expand according to the terms of or area affected by a policy, plan or program. Like all the types of impact assessment, SIA is a proactive mechanism: it "offers an effective means of anticipating and planning for social impact prior to

project development or program implementation" (Burdge, 1987: 141).

Rau (1980: 2-1) notes that a wide variety of socioeconomic factors are considered in SIA, including:

social impacts (population growth, density, aesthetics, standards of living, congestion, incompatibility with surrounding community, increase in recreational requirements, and conflict in lifestyles) to additional requirements for public services (water, sanitation, telephone, natural gas, electric facilities, police and fire protection, solid waste disposal, and overloading of schools).

In view of the scope indicated by the above, there exists a basis to support the suggestion that "there is a nontrivial sense in which all impacts are social" (Wolf, 1983: 253). That is, people are ultimately involved or affected and, for most initiatives, there are likely to be both winners and losers. Social impact assessment is concerned with making the impacts on both groups explicit, and detailing and judging the consequences of those impacts considered to be the most relevant and/or significant.

#### 4.0.1 Health Impact Assessment (HIA)

Health impact assessment arose from the realization that the human health consequences of development were underplayed in traditional impact assessments (with their emphasis on the natural or built features of the environment). HIA is concerned with "assessing the health implications of development" (Wathern, 1988: 4). More specifically, HIA "involves the assessment of a proposed action with respect to its effects upon environmental parameters which are known to have an important influence upon health" (Giroult, 1988: 259-260). For example, the health impact of a new development is considered to be significant when the predicted concentrations of a pollutant associated with the proposal are expected to "exceed a given health standard or guideline" (Simpson, 1990: 160).

Environmental dimensions such as air and water quality, or noise and radioactivity levels, all have important repercussions for human health, and can be seriously compromised by certain types of development (particularly those of the toxic or noxious industrial variety). HIA attempts to identify and ameliorate the health debilitating aspects of development before they happen. The 'healthy community' concept now circulating in planning discussions can be intimately linked to HIA which, in turn, can be tracked back to the origins of traditional planning principles such as health and safety (Lucy, 1988: 147).

#### 4.0.2 Technology Assessment (TA)

"Technology assessment is a process consisting of the analysis of technological developments and their consequences as well as discussions following these analyses" (Leyton *et al*, 1986: 556). More specifically, technology assessment is concerned with the "comprehensive study of the possible effects on society resulting from the introduction or change of some technology" (Thomas, 1987: 19). According to Mitroff and Turoff (1973: 70), the central thrust of TA concerns technology's "effects on the organization (profits, markets, mission objectives, etc.)" and the assessment of "the effects....on society (changes in lifestyle, job markets, education, pollution, etc.)."

Technology assessment topics are wide-ranging, and include such diverse fields as information technology, machine technology, food processing technology, and virtually any other aspect of life for which goods and services can be produced and sold. With technology assessment, a topic of interest could be the consequences of introducing Geographic Information System (GIS) technology into an office that previously operated solely on the basis of manually-produced data bases and maps. Some of the impact indicators of interest might include: impacts on productivity; impacts on data security; disruption to existing work teams; costs of obsolescence

of the existing map inventory; new skills requirements for staff; changes to the work environment and work habits; and the effects on the quality of employees' work life (Wellar, 1993a; 1993b).

#### 4.0.3 Risk Assessment (RA)

Risk assessment involves identifying hazards (natural and other), estimating the threat that they pose to a particular group of individuals, and evaluating this risk. Essentially, risks are the "probability of an adverse consequence" arising from a natural event or human initiative (O'Riordan and Sewell, 1981: 20). "The estimation or measurement of risk attempts to determine both the likelihood of an event of a given magnitude occurring as well as the likelihood and nature of the associated consequences" (Mitchell, 1989: 193). There is usually a mathematical and/or statistical orientation to risk assessment due to its reliance on the theories of probability.

Identification of hazards (e.g. building on a fault line, in a flood plain, in an area prone to landslides) involves enumerating or preparing an inventory of acts, situations and processes that are deemed to constitute a threat. Estimating the risk or threat that the hazard poses involves two steps: first, determining the magnitude of the hazard should it occur (e.g. an earthquake, flood or landslide), and second, determining the likelihood and nature of the consequences (e.g. the probability of building destruction, the likely amount of damage to building contents, neighbouring sites and resident individuals). Social evaluation of the risk involved focuses on the importance of the estimated risk. Importance, as in other impact assessment contexts, is defined and determined by the assessors according to the value systems of the relevant groups (e.g. residents, neighbouring communities, politicians, the developer of the property, etc.).

#### 4.0.4 Cumulative Impact Assessment (CIA)

For the most part, IA is applied on a site- or situation-specific basis, and at a specified point or interval of time. There is, therefore, an apparent limitation to IA concerning "its inability to handle the consequences of multiple minor impacts, called the tyranny of small decisions" (Erckmann, 1985: 20-21). In the impact assessment literature, these incremental or small sequential changes associated with 'the tyranny of small decisions' are referred to as cumulative impacts. While IA tends to be site-specific, CIA (like TA) tends to address a much larger spatial context. CIA is considered a form of pattern analysis, and the management of cumulative effects is the management of patterns (Erckmann, 1985: 20). Essentially, "the bounding of forecasts with respect to geographic area, time, and variables included is broader with respect to cumulative impact assessment than it is with conventional environmental impact assessment" (Baskerville, 1985: 9).

Cumulative impacts can arise in a number of different ways:

- Time-crowded perturbations. This type of cumulative impact occurs when the environmental consequences of actions occur close enough in time for the effects of one action not to be dissipated before the next one appears, or when the ongoing impacts of a project or policy accumulate over time. These kinds of disruptions occur, for example, when inadequate time has passed for the affected area or resident population to 'recover' from one action before another is initiated.
- Space-crowded perturbations. Space-crowded perturbations occur when the cumulative effects of the policy or project are close enough spatially for the consequences to overlap. For example, the siting of district shopping malls in close proximity may lead to the future failure of the road infrastructure's ability to handle the cumulative traffic generated.
- Indirect effects. This feature of CIA refers to cases where the impact of the original effect becomes measurable at some time or distance removed from the original source. For example, the removal of parkland in a downtown may indirectly contribute to the urban heat island effect (because the pavement and building materials that replace the greenspace have heat-retentive properties), which can lead to the infestation of the downtown by pest species of insects that require higher temperatures to survive and breed.

- Synergism. This aspect of CIA refers to two or more environmental effects interacting to create an impact of greater magnitude than each on their own (e.g. the whole is greater than the sum of its parts). For example, two or more different airborne industrial effluents can combine to create toxic gases that poison the air of areas surrounding industrial zones (CEARC and U.S. NRC, 1985: 161; Needham and Swerdfager, 1989: 4; Smith, 1993: 27).

Institutional and legal arrangements often negate the requirement for IA if the predicted impacts of a particular project, policy or program are deemed negligible. Indeed, it has been a criticism of the Ontario Municipal Board that, at its hearings on planning actions, the Board has (for a number of years) tended not to take cumulative impacts into account (Valpy, 1990: A8). Clearly, if a number of initiatives are independently approved in, for example, a specific section of a city without consideration of their overall and interactive effects, potentially significant impacts would likely be overlooked.

Wellar (1989b: 3) states that one of the central forces driving the 'urban problem' is "a rate of urban growth which is too high relative to the capacity of cities and metropolitan areas and their residents to modify, adapt to, or absorb changes." In other words, anticipating and devising the means to properly deal with cumulative effects across an urban area, over time, must be accounted for in the planning process. Since the spatial scale of CIA is larger, formulation of a CIA program on a regional scale is usually appropriate (large enough to track the patterns of impacts arising from various initiatives, and small enough to be manageable). In the planning field, and as a basis for comparison, IA could function effectively at the block to several-block scale. CIA, in turn, would come into effect at the neighbourhood level, continuing up through to the metropolitan region scale and beyond (Barry Wellar, Pers. Comm.).

The essence of cumulative impacts is a focus on their spatial concentration in time. That is, whereas the traditional IA process assesses the significance of impacts on a project-by-project

basis, CIA assesses the significance of incremental impacts over time and space. Obviously, and this is the price paid for complexity, measuring and interpreting cumulative impacts can be very difficult because the time-frame of predictions is often very long-term, and many spatial relations and interactions can change substantially over time. Ultimately, the use of IA to address cumulative impacts may be optimal at the policy , plan or program level where the articulation of possible development alternatives is initially determined. Unfortunately, "there is increasing concern that neither scientists nor institutions work at the temporal or spatial scales needed for the assessment of cumulative effects" (CEARC and U.S. NRC, 1985).

#### 4.0.5 Urban Impact Assessment (UIA)

Urban impact assessment is impact assessment exercised in an urban or city context. A city can be characterized as:

a geographic area which is economically integrated. The area is tied inwardly to the core area or central business district through commuting to work, and outwardly in terms of the distribution of services and the circulation of information (Bourne, 1971: 15).

The central business district maintains strong linkages to outlying or suburban nodes of industry and commerce (if they exist). The people and activities of cities are connected with those in other places by a complex pattern of flows, movements, and transactions that can be collectively referred to as "spatial interaction" (Yeates and Garner, 1976: 51). Cities are concentrations of both people and, by extension, activities; they are complex entities with biophysical, economic, social, cultural, and spiritual dimensions. Impact assessment, when executed in an urban context, can be used to address each of these dimensions. When impact assessment is applied in an urban context, it can be referred to as urban impact assessment. In some jurisdictions, it is also referred to as municipal environmental evaluation, or urban environmental assessment (City of Ottawa, 1992a).

According to Lang and Armour (1976: 6), urban impact assessment differs from the more general impact assessment in two important ways:

1. UIA is applied in the most complex environmental milieu: the city. This means that there is "a bewildering mix of cause-effect relationships and jurisdictions" at work, alongside secondary and tertiary impacts, and cumulative impacts, that will be difficult to predict;
2. Social considerations are given prominence over those of the natural environment.

Urban impact assessment can be differentiated from urban impact analysis because of its concern with judging the significance of urban consequences or influences arising from human initiatives (Wellar, 1981b: 166; Wellar, 1987: 65). Urban impact assessment contains an explicit evaluative component regarding the consequences of human initiatives and interventions (Wellar, 1982: 41). In essence, UIA is impact assessment undertaken with specific attention to urban dimensions, and always includes "social as well as physical environmental evaluations" (Francis, 1975: 373).

The size and spatial configuration of cities is driven by the processes of urbanization, development and redevelopment. Cities require planning and informed decision making if chaos is not to result from the competing interests at work in these processes. Specifically, market forces (involving willing buyers and sellers) are insufficient to ensure orderly development because the market has a primary and overriding interest in profit, and only a tangential interest in contributing to the public good. Governmental and societal intervention is therefore required in the public interest. While much of the legislation on impact assessment concerns the control of publicly-funded development (e.g. resource extraction facilities, highway construction, pipeline corridors, etc.), urban impact assessment and the municipal by-laws or guidelines that govern it are concerned with both publicly- and privately-funded projects and other initiatives.

#### 4.1 UIA in Canada

In the late 1970s, Armour (1977: 15) wrote that "it is difficult to find Canadian examples of municipal EIA." While the use of impact assessment in an urban context has increased in Canada since then, progress has been slow. In the United States, UIA arises through federal and state governments consulting with local governments, federal and state cost-sharing programs requiring UIA as a condition of assistance, state legislation mandating UIA, and initiatives within municipalities themselves (Lang and Armour, 1976: 66). In Canada, the last instance is the one that appears to predominate. The federal government, under the aegis of the Ministry of State for Urban Affairs (MSUA), used urban impact assessment extensively throughout the 1970s to influence "the evolution of the process of urbanization in Canada" and to integrate federal "urban policy with other policies and programs of the Government of Canada" (Oberlander, 1987: 12).

However, as Wellar (1987: 65-87) documents, the "urban impact assessment perspective was by no means a guiding light that burned brilliantly." That is, MSUA used UIA but, bowing to the various contingencies of the day, often muted or diminished its UIA emphasis in deference to other priorities (before the Ministry was dissolved by the Liberal government in 1979). It warrants noting that a critical mass of specialists doing UIA was disbanded with the demise of MSUA. That loss of UIA focus and potential could amount to a major limiting factor or constraint concerning the diffusion of UIA to other levels of government, and to other agencies or institutions across Canada.

At the local level, municipal governments in Canada, acting in their own interests to meet the challenge of continually evolving and increasingly complex circumstances, have established impact assessment processes that can contribute to their urban planning process. In this sense,

the forward-looking municipalities are the ones with impact assessment processes. In 1991, Katherine Davies conducted a Canada-wide study of twenty-two cities; her purpose was to determine the use of impact assessment or environmental evaluation in municipalities.

Of the twenty-two cities surveyed, Davies (1991: 19) identified eight with formal environmental assessment processes either in place, or in the process of being incorporated into the city's Official Plan. These eight cities (east to west) are: St. John's, Fredericton, Ottawa, Guelph, Kitchener, Winnipeg, Regina, and Edmonton. The legal authority for all of these IA processes (except Winnipeg's) is or will be contained in the city's Municipal or Official Plan or its equivalent (Davies, 1991: 18).

The range of differences in these formal processes is made explicit in a study by Virginia Maclaren (1992), Sustainable Urban Development In Canada: From Concept To Practice. The Maclaren study uses the results of a survey of twenty-three Canadian cities concerning the implementation of sustainable urban development initiatives, of which urban impact assessment is considered one. Maclaren (1992a: 9-28) identifies the following circumstances necessitating urban impact assessment initiatives in the following cities:

1. For all initiatives (policy, program and project) with potential environmental impacts (Ottawa);
2. For all new city projects (Winnipeg);
3. For all new development (Halifax and St. John's);
4. For developments impacting on environmentally sensitive areas (Edmonton, Kitchener, Guelph, Toronto, and Ottawa);
5. For development of sites with potential soil contamination, abandoned pit and quarry sites, unstable slopes, waste management facilities, and snow disposal sites (Ottawa);
6. For developments involving river valleys and ravines (Edmonton), and for residential developments (Fredericton);
7. For new developments in suburban growth areas (Edmonton);
8. For new developments involving hazardous substances (Regina).

In regard to Maclaren's identification of Winnipeg as a locus of urban impact assessment, a clarification is required. Although Winnipeg was a pioneer in UIA, the process in that city met an untimely end shortly after its implementation in the mid-1970s. Davies (1991: 8) suggests that the process collapsed because "the public consultation process was too lengthy and it was felt the process did not accomplish anything."

While the observations of Davies may be accurate, Cristoff Kaufmann, in his thesis for a Masters In City Planning from the University of Manitoba, traced the collapse of the process in Winnipeg to additional causes. It was Kaufmann's finding that bureaucratic jealousy and inter-departmental bickering constituted the undermining of the process before its benefits could be realized. Senior administrators of municipal departments, whose projects became subject to Winnipeg's new impact assessment process (and therefore subject to the planning department), came to see the revision of planning practice as "a threat to their accustomed control and decision-making power" (Kaufmann, 1981: 105).

Davies (1991: 18) found that sometimes the impact assessment statements were prepared by the developer, and sometimes by the planning department. Commentary on the assessments came from municipal departments, external consultants, the provincial ministries of the environment, citizens and citizens' groups, and from municipal environmental advisory committees. Approval of projects is the responsibility of City Council. In most instances, there were few mechanisms to appeal Council decisions. Davies (1991: 20) cites the Ontario Municipal Board as one example of a mechanism used to appeal urban impact assessment decisions.

Concerning the difficulties associated with urban impact assessment, Davies (1991: 20)

identifies two prevalent weaknesses:

1. The lack of experience and expertise among municipal staff for the evaluation of both proposals and environmental assessments;
2. The lack of guidelines for the formulation of an environmental assessment in terms of content and process. The developer and the municipal planning departments sometimes had no idea concerning the ideal content of an urban EA document. The roles and rights of the participants (the developer, the planning department, the public) were also often unclear.

The first and second weaknesses can be ameliorated to some degree by increased training and education of municipal employees. Concerning the second suggested weakness, while the nature of and regard for guidelines concerning the process of UIA will likely vary by city as a matter of course, the content of an urban impact assessment, like other impact assessments, is not a matter of 'guidelines.' That is, by definition, UIA is concerned with the predicted changes to impact indicators after the imposition of the initiative.

#### 4.2 Summary

The impact assessment contexts presented in this chapter have been formulated to provide insight into the effects that human actions can induce. In many respects, the only substantive differences between the various types of IA are the specification of variables and relationships to be studied. Urban impact assessment, identified as the application of generic impact assessment in an urban context, is discussed in conjunction with urban planning in the next chapter. The utility of integrating impact assessment into the urban planning process is considered in subsequent chapters.

## Chapter 5 Urban Planning

In this chapter, the general nature and attributes of urban planning are established, and a brief overview of urban planning in Canada and in Ontario is presented. This discussion provides insights into the interaction of the central actors in the urban development context: municipal councils, developers, planners, and the public. Drawing on the tenets of the rational model of planning, the chapter also includes an examination of the urban planning process as a complement to that done for impact assessment in Chapters 3 and 4.

### 5.0 Introduction to Urban Planning

The underlying causes or forces that create the need for urban planning are urbanization, development and redevelopment. According to Wellar (1982: 39), urbanization refers to "the growth of urban centres (towns and cities) and to increases in the proportion of the population residing in urban centres." As the population of urban centres increases, so do development or growth pressures for residential, commercial, recreational and other land uses. Dunn (1971) defines development as "the ability of an organization, community or society to change (transform itself) as the result of research and planning." Hence, there is a dimension to development that involves the (intentional) direction of activities and construction as part of the process of urban change.

On the other hand, in regard to growth, Dunn (1971) defines it as a "scalar concept meaning only an increase in the scale of things." Growth, as such, can exist without evidence of forethought or reasoned guidance. Urban planning, therefore, is concerned with anticipating and addressing the consequences of urbanization, and with providing direction for development in terms of the where, when, what, etc. of change to the natural, built and human aspects of urban places and urban systems. In regard to planning and urban planning, they have been defined in many ways. For example, according to Feldt (1988: 44), "planning is a universal human activity, a basic survival skill involving the consideration of outcomes before choosing among

alternatives."

As for urban planning, it can be distinguished from planning in general by stressing its central concern for the urban context. Urban planning:

is done for a particular area and for the people who reside, work, relax, travel, or have an interest in that area....each alternative course of action under consideration has implications for some segment of that population, and the planner must consider the interested and affected constituency during all parts of the process (ASCE, 1986: 18).

As noted earlier and re-emphasized by the above, the urban context is exceedingly complex with highly interdependent relationships between and among urban components (e.g. the built environment, associated land use activities, culture, lifestyle patterns, etc.). Again, drawing on Feldt (1988:44):

in order to understand and anticipate how complex social systems operate and how they are likely to react to planned changes and interventions, it is necessary to draw on information and ideas from a number of different disciplines.

These 'different disciplines' include: ecology, economics, geography, political science, and sociology, and applied disciplines such as architecture, engineering and public administration. Without minimizing the importance of the other disciplines, it suggested that the linkage between geography and urban planning is particularly strong, and especially as it relates to and affects the linkage between impact assessment and planning.

That is, and in brief, geography and urban planning share many of the same research domains (e.g. spatial organization, an emphasis on location), and stress the understanding of the complex interactions between humankind and the environment. The value of geographical information to the planning process is indisputable, although the methodological underpinnings of the use of this information may differ. Stamp (1960: 10) suggests that "planning is the art of which geography is the science." As Freeman (1958: 15) argues, "planning has an inescapable

geographical bias...it is essential to the planner's work, for the planner must understand the existing landscape before he tries to reform it."

### 5.1 An Overview of Urban Planning in Canada

When urban planning is viewed historically in Canada, strong international influences, particularly from the United States, can be discerned. Originally, "planning practice and planning institutions in Canada developed in response to most of the same stimuli as in the United States," including an accelerating rate of urban growth, inadequate health and safety measures, congestion, and squalid slums (Hodge, 1985: 20).

In a general sense, three overlapping periods of urban planning history in Canada can be identified:

- Design and plan-making;
- Expert advice-giving; and,
- Technical administration (Beauregard, 1986: 173).

Early planners grappled with the original menu of urban concerns through plan-making and design, "bringing together disparate components of urban form into a coherent and aesthetic whole" (Beauregard, 1986: 173). Dzurik (1986: 37) identifies three distinct trends within this so-called 'utopian period': scientific efficiency (concerned with sanitary and health conditions of urban areas), the City Beautiful movement (concerned with integrating classical design, public parks and other aesthetic instruments), and social equity (concerned with neighbourhood and slum reform).

Local government institutions began appearing in Canada around the turn of the century (Hodge, 1985: 18), at which time the practice of planning shifted in form and content as planners began to be absorbed into municipal governments and planning became institutionalized. Planners

became synthesizers of the gamut of technical expertise needed to analyze, interpret and improve the conditions affecting and underlying a modern industrializing city (Beauregard, 1986: 173). The creation of the Town Planning Institute Of Canada marked "the official debut of urban planning as a profession [in Canada] in 1919" (Kiernan, 1990: 12).

A strong American influence on Canadian urban planning can be seen in the Canadian adoption of "zoning and the orderly arrangement and separation of land uses, streets, and utilities" (Kiernan, 1990: 12). "Zoning developed along the same general lines in both Canada and the United States, following the law of nuisance, to secure proper sanitary conditions and to protect property rights" (Hodge, 1985: 17). Zoning innovations appearing in the U.S. are reputed to show up in Canada after ten or fifteen years. "Canadian planners came to look at the achievements of their American colleagues in much the same way Americans had earlier looked admiringly at the successes of German zoning" (Hason, 1977: 10). The British public health and housing reform movement, which emphasized government intervention concerning the mitigation of the appalling conditions for the urban poor, was also a strong influence.

The new planners of the first half of this century were termed 'realists' and 'technicians.' Following the advent of zoning and master planning, the emphasis in planning became empiricism and a comprehensive view of urban problems. Nevertheless, despite the creation of the Town Planning Institute, urban planning maintained a low profile in Canada during this period.

While the plan-maker of the previous century acted as a consultant to civic groups and local governments, the expert advice-giver was an employee of the municipal government. Planners evolved from general commentators on urban form to specialists. The expert advice-giver left

implementation to administrators (Beauregard, 1986: 173). However, the prosperity of the post-World War II era precipitated a higher profile for urban planning. In 1945, the Central Mortgage and Housing Corporation (CMHC) was established with "a mandate to stimulate the flow of mortgage capital and to provide low-cost housing" (Kiernan, 1990: 12).

By increasing both the amount and the availability of residential mortgage money, CMHC, not inadvertently, fuelled, and indeed accelerated, the explosive development and growth of the suburban areas on the periphery of Canada's major urban centres. This led in turn to a dramatically increased need to plan and accommodate the new suburban growth, with a concomitant increase in provincial and municipal government planning activity and legislation (Kiernan, 1990: 12).

By that date, planning had largely quit the quest for a utopian form, and had substituted for it the use (and abuse) of rational processes. That is, the planning process became primarily concerned with a technical understanding of the mechanical city.

Planning practice in regard to land use control closely followed the U.S. mode of zoning until the 1950s. Then, largely through the efforts of British and British-trained planners who came to Canada, development control ("development permit") approaches entered planning practice...it [development control] is now the stock-in-trade of planners throughout the country and provides additional leverage beyond zoning's general guidelines to establish conditions for development on a property-by-property basis (Hodge, 1985: 21).

The rapid growth, diversification, and administrative fragmentation of planning after World War II generated the requirement for a generic planning process that could standardize planning practices (Beauregard, 1987, p. 367). The 1950s heralded the emergence of the Rational Planning Model (RPM). Within this model, planning is seen as a process of finding the means to achieve predetermined ends (Dzurik, 1986: 37). This style of planning, like impact assessment, places a strong emphasis on techniques of data collection, measurement, and analysis (Feldt, 1988: 49).

During the period of 1952-64, planning schools were established to provide professionally trained staff, and planning departments began to be established in many government agencies

(Fauquier, 1986: 31). Influenced by the 'quantitative revolution' experienced at universities during the late 1950s and throughout the 1960s, planners further abandoned design, refined their economics, and began experimenting with mathematical modelling. A number of quantitative techniques were used under the aegis of the rational planning model, including the critical path method, the program evaluation and review technique, linear programming and benefit-cost analysis (Feldt, 1988: 49). Despite the insensitivity of doing so, even the social concerns of the 1960s were treated as technical matters (Beauregard, 1986: 173). These trends are manifestations of "expert advice-giving." Design activities had been usurped by data collection and manipulation.

The emphasis on technical matters and technique notwithstanding, the 1960s "marked the real beginnings of the institutionalization of urban planning within the local government system" (Kiernan, 1990: 12). Prior to this period, most city governments had depended upon arm's length advisory planning commissions that prepared city plans with the assistance of outside experts and consultants. However, by the early to mid-1960s, most Canadian cities chose to create in-house planning departments that employed accredited planners. That was consistent with the tendency of local governments to view their principal mandate as being the prudent and orderly administration of physical services to support growth and development. Kiernan (1990: 13) argues that "it was only logical that urban planners would interpret their roles within these same narrow parameters," and that they increasingly focused their interest "on physical land use, subdivision design and zoning approvals."

Spending on social programs increased in the 1960s, and a new role for planners emerged: to enlarge the scope of the expert advice-giver. Urban renewal, community development, business partnerships (e.g. joint ventures), environmental permits and a range of other governmental

tools and instruments required that planners become administrators trained in the technicalities of implementation (Beauregard, 1986: 173). The rubric of planning now subsumed the mastery of assessment and monitoring. Planners returned to implementation, but as technocrats rather than designers. Concentrating on short-term, strategic problem solving geared to making their programs efficient and effective, planning became more administrative, quasi-political and specific to programmatic substance and legislative guidelines (Beauregard, 1986).

During the 1970s, planners found themselves operating within the vortex of increasingly mobilized citizen participation.

Citizen opposition to urban renewal, high-rise redevelopment, and urban expressways frequently placed planners directly at the axis of a three-cornered fight among their municipal government employers, private developers and a concerned citizenry...While the principal focus of urban planning during this period remained very physical -- on buildings and land use -- a much greater stress was placed on concerns about the social and environmental impacts of development, and on more participatory styles of planning, involving citizens as well as professional 'experts' (Kiernan, 1990: 13).

It is in the late 1970s, and throughout the 1980s, that impact assessment began to make an appearance, however haltingly, within the municipal context in Canada. Alongside this growing concern for the impact of development, Kiernan (1990: 13) suggests that urban planning in Canada has continued to evolve since the late 1970s, and currently embraces four central intellectual influences:

1. Fundamentally ambivalent Canadian attitudes concerning the legitimacy of public sector intervention in the urban land market;
2. Depoliticizing consequences of the situation of the urban planning function within the broader local government system;
3. The persistence of the notion that planning is essentially a rational, technical, professional enterprise; and,
4. The consequences of the macro-economic context -- that is, the recession and its aftermath -- for both public and professional attitudes towards growth and development.

"No new consensus on a single, best theory of planning has been attained since the rational planning model, but planning theory and practice has undertaken new directions" (Dzurik, 1986: 43). This is where the link between impact assessment and urban planning becomes central, and is considered in detail in the next chapter.

## 5.2 An Overview of Urban Planning in Ontario

During the years 1970-79, the federal Ministry of State for Urban Affairs engaged in research and policy activities in the urban, rural and regional domains, including the preparation of Cabinet Documents on numerous related topics. Since 1979, the federal government has had little or no direct involvement in matters affecting urban growth, urban planning, or urban impact assessment (Wellar, 1982). Not surprisingly, "the provincial level is the fulcrum of both planning policy and practice in Canada" (Hodge, 1985: 21).

At the federal level in Canada, for constitutional reasons, there is not an integral partnership role for the national government in planning urban development. The provinces avidly protect their rights in regard to land and other resources (Hodge, 1985: 21).

Each province in Canada revealed its own personality and proclivities through its planning act, since the federal government provided little or no basis for inter-provincial continuity.

In Ontario, the *Planning and Development Act* of 1911 required local governments to develop community plans focusing on the orderly development of land and various control (e.g. sanitary) regulations (Leung, 1989: 217). The planning acts and amendments that followed were altered in emphasis according to the social and economic conditions, and political attitudes of the day. For example, the *Planning Act* of 1947, reflecting both post-World War II conditions and attitudes, shifted the emphasis to future development and administration. As a result, planning became much more forward-looking and end-state oriented. The 1955 Act, on the other hand,

moved towards policy and program planning. The latest 1983 *Planning Act* "has been the legislative response to explosive urban growth, inefficient urban sprawl, imbalances of growth between types of uses, the demands of development on the provision of roads, schools, recreation facilities, water treatment, sewage and drainage systems and a wide range of environmental problems" (Dourmani and Thompson, 1984: 351).

In Ontario, the *Planning Act* provides the statutory framework for land use planning and implementation at the local government level. The *Act* establishes the machinery for the creation of planning units, and it organizes them in a pyramidal fashion, with the Minister of Municipal Affairs (acting for the provincial government) occupying the position at the apex. The *Planning Act* also provides for the preparation, adoption, approval and legal effect of statutory plans, official plans and redevelopment plans. It establishes a system of subdivision controls and delegates to municipalities both the power to enact zoning by-laws and to implement the provisions of the statutory plan by the exercise of land acquisition, management and disposal power (OEC, 1973: 1).

Moreover, the *Planning Act* is the basis of local planning administration on such topics as the preparation of planning policies, development control, land division, provincial interests *vis-à-vis* local planning, and the public's right to participate and have input into the planning process (MOMA, 1989: 43-44). In those regards, the *Planning Act* provides many points of context or terms of reference for an official plan.

Given that real-world responsibility for urban plans and planning has been delegated to local governments, it follows that a central activity of urban planning throughout the continent is the articulation, implementation and reformulation of a master plan. In Ontario, "this master plan

is called the official plan" (MOMA, 1985: 5). Official Plans are drafted and adopted by municipal governments and approved by the province. They are policy documents to be used to guide the following municipal government functions:

- The drafting of zoning by-laws;
- The control of land subdivision;
- Planning and programming of public facilities and basic infrastructure (Leung, 1989: 218).

Today, many municipalities in Ontario have secondary and tertiary plans, as well as site-specific plans under the Official Plan. Each of these plans is progressively more detailed and rigid until they more resemble zoning bylaws rather than a so-called 'vision of the future.' In some municipalities, functional plans operate within the overall Official Plan to deal with issues such as housing, roads, and parks.

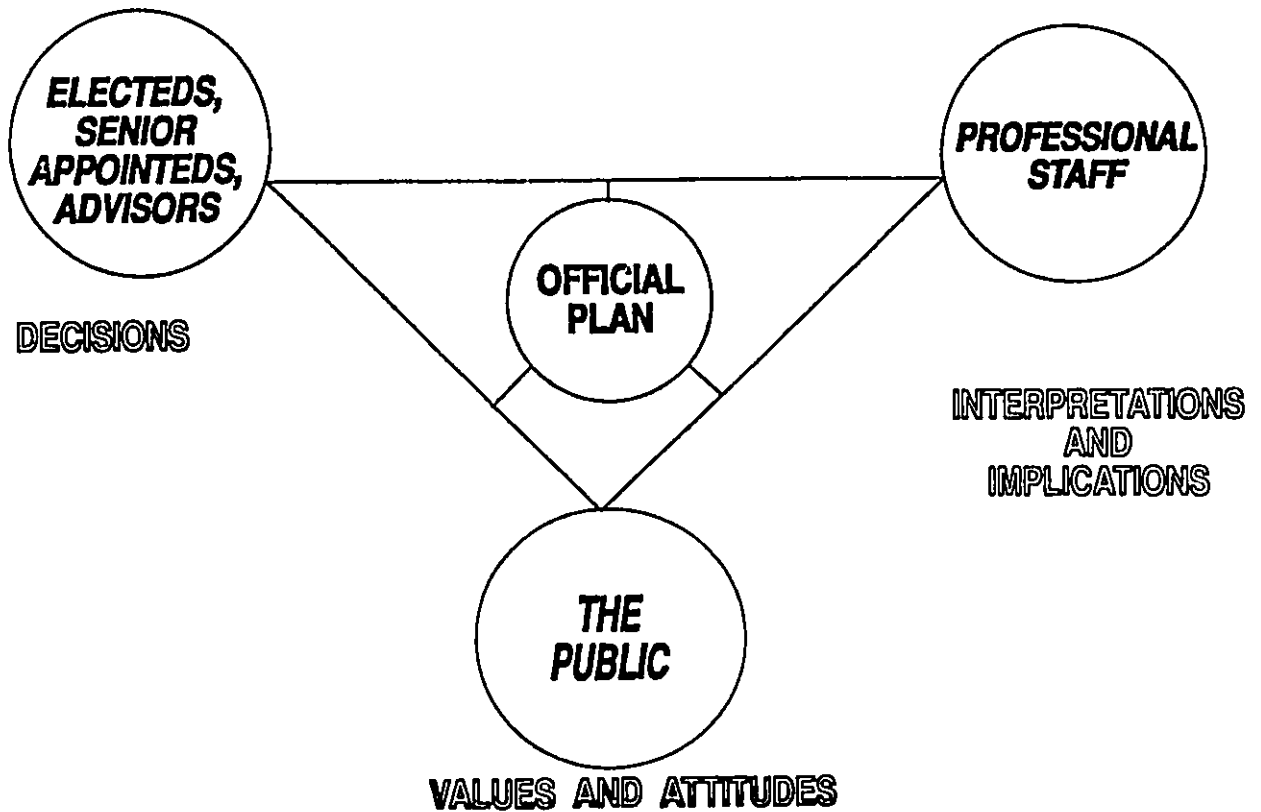
The principal actors in the Ontario urban planning context are:

- The public, including ordinary citizens and developers;
- Planning and other professional staff;
- Municipal council.

Their roles and relationships in the planning and development process have been elaborated by Wellar (1990d) and are depicted in Figure 5.0. Various models and schematics have been used to depict the three 'actors' (the public, planners and politicians) engaged in the planning process. Lash (1976), for example, also used a triangular arrangement. However, the Wellar model is preferred in this study because the the actors' activities are centred on the official plan, the primary contributions of the actors are explicitly designated, and the activities of the actors are readily understood in operational terms. As a result, the model shown in Figure 5.0 serves the IA process as well as the planning process and, in the final analysis, helps to integrate planning and IA in both the conceptual and operational respects.

Figure 5.0 Roles and Relationships in the Planning and Development Process.  
(Source: Wellar, 1990d: 754).

## ROLES AND RELATIONSHIPS IN THE PLANNING AND DEVELOPMENT PROCESS



It warrants restatement that the overriding and ultimate purpose of planning is to serve 'the people,' who may choose to express their wishes by voting in municipal elections, by making financial contributions to campaigns, through participation at public planning meetings, by joining or supporting a special interest group, or by organizing into a 'body politic.' These constituencies or relevant groups contribute to the definition of the significance of impacts associated with a particular course of action by stating what they want or do not, setting priorities, etc. The public provides the values and attitudes that underpin the planning process and, by extension, the IA process. It is the planner's responsibility, in turn, to ascertain the quantitative and qualitative impacts of the various alternatives, and to communicate this information to the relevant groups.

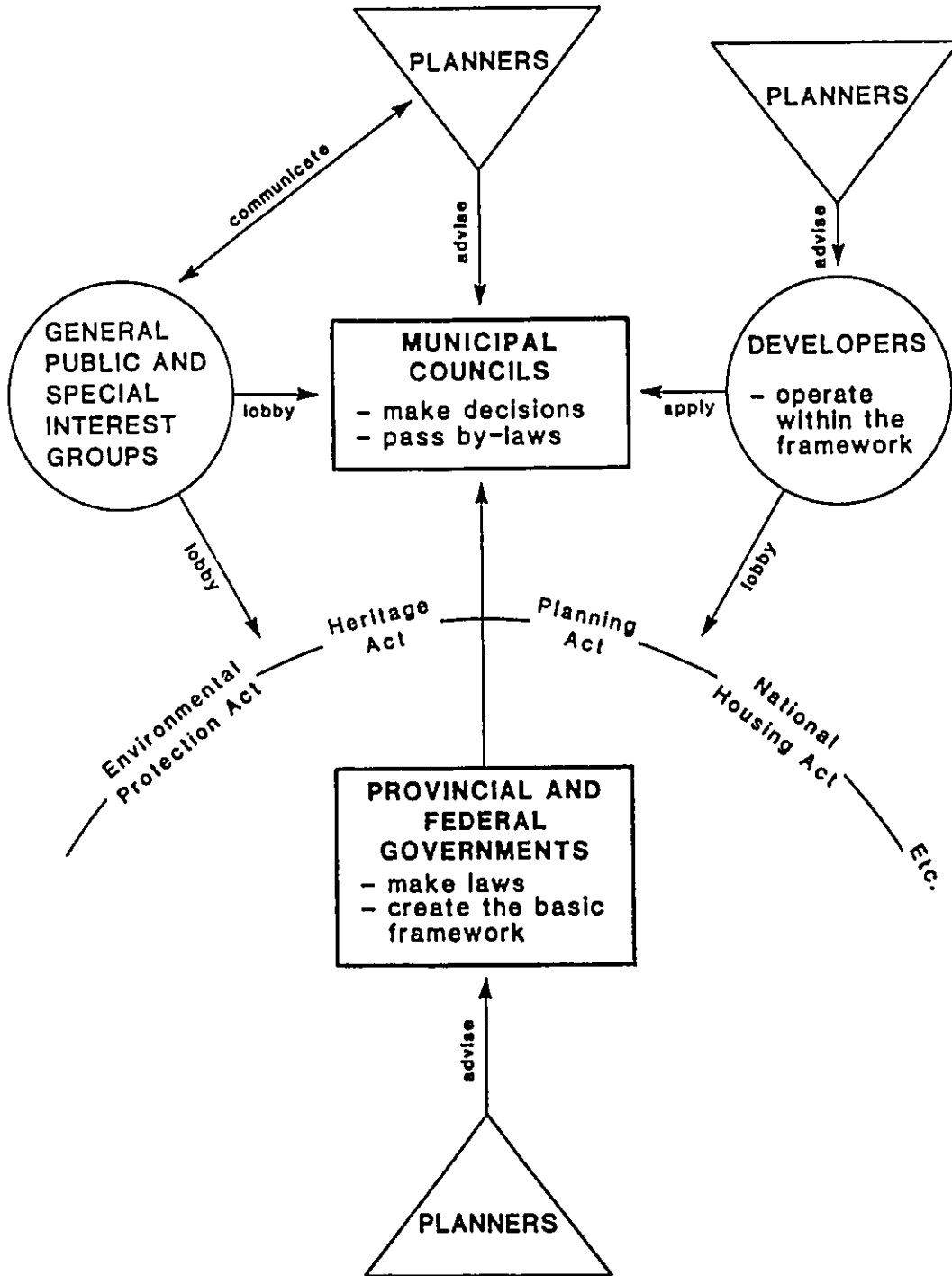
The municipal council, as the 'third actor' in the planning and development process, has both executive and legislative responsibilities and powers. As an executive body, the municipal council "initiates proposals for municipal action...and supervises the administration of the policies and programs of the municipality" (Tindal and Tindal, 1990: 184). In its legislative role, the municipal council makes, passes, amends and enforces by-laws. Given that these functions are combined into the action mandate of city council, the line between policy making and policy administration can be blurred at the local level. Consequences of this situation are not only the possibility for conflict of interest among individual councillors, but that entire councils could engage in a conflict of intent; that is, councils could be reluctant to carry out an IA if it threatened 'pet projects,' or to institute an IA if it threatened to uncover a 'bad' policy initiative on the part of council. The demise of Winnipeg's IA process, as presented by Cristoff Kaufmann (1981), was precipitated by the reluctance of other municipal departments to have their own (pet) projects subject to the decisions of the planning department (who administered the IA process).

In Ontario, and expanding on Figure 5.0, planners function in a technical and advisory capacity to municipal council, "providing data, forecasting futures, defining alternative courses of actions, and structuring strategies for implementation of formal plans" (Marsh, 1984: 9). As illustrated by Figure 5.1, planners also deal with the development objectives and objections of landowners who may seek to optimize their utility through a myriad of motives, including personal enjoyment, social interest or profit maximization (MOMA, 1985: 4). Landowners range from individual home-owners to development corporations, and also include public agencies acting in the public interest (with responsibilities for such matters as transportation, waste disposal, and heritage conservation).

Whether or not Ottawa can be considered a typical municipality in Ontario, the city's planning department can be used to indicate the functions of planning departments within the province. In Ottawa, the planning department is concerned with "managing and controlling urban development, use of land and buildings. Its chief responsibility is to provide Council and the public with sound, professional, objective, planning advice" (City of Ottawa, 1988b: 32). Planners (in the planning department) are concerned with research and evaluation functions, in terms of both plan-making and the ever-evolving list of development initiatives that are produced by the development community.

Conversely, the city's Department of Engineering and Works "manages activities related to the design, construction, and maintenance of the City's physical resources" (City of Ottawa, 1988b: 35). These physical resources include: sewers, storm drains, water, roads, parking and other hard services. Obviously, the focus of the city's planning and engineering functions is different: the first is oriented towards plan-making and control of development, the second is oriented to managing and upgrading the City's physical resources (e.g. hard services or infrastructure).

Figure 5.1 The Framework for Planning in Ontario.  
 (Source: MOMA, 1985: 5).



While the engineering and public works departments of city and regional governments in Ontario do use environmental impact assessment under the mandate of the *Environmental Assessment Act*, this is outside the scope of this research. Planning departments, on the other hand, have no mandated requirement for IA, but many municipalities use it as a planning tool. This is explored in detail in Chapter 7.

The preceding overview of the history and operation of urban planning in Canada and Ontario captures some of the salient, contextual influences that have shaped and been shaped by planning over the past century. Different social, political and environmental factors have affected the evolution of the process in terms of why, how and when it was modified. However, to understand the contribution that impact assessment can provide to urban planning requires a more rigorous definition of the urban planning process in both its theoretical and practical aspects.

### 5.3 The Process of Urban Planning

Like impact assessment, urban planning is difficult to define because of the range of planning activities that various authors choose to stress, either through a disciplinary bias, or through the restriction of the definition for a particular topic of study within the broader interests of planning as a whole. The following definitions reflect and emphasize the fundamental nature of planning as a process.

According to Ontario's Ministry Of Municipal Affairs (MOMA, 1985: 3), "the word 'plan' refers to an orderly arrangement of parts or a method of carrying out an overall design" for a city.

More specifically, the process of planning, in its most general senses, is:

A means for preparing for action to address an issue or concern, and involves "a conscious effort to systematically define and think-through a problem to improve the quality of decision making" (Levy, 1988: xv);

A process in which information is collected and analyzed, alternative courses of action are formulated that are consistent with the desired objectives, and a course of action is recommended (ASCE, 1986: 8).

Organized preparation for purposeful action. It is a basic everyday human activity, a way of thinking and getting ready to act. Planning involves analyzing a situation, working out what is desired, exploring and evaluation options, and devising a course of action. At the more complex scale of public planning, various interests initiate actions and are affected by other actions; such that planning, therefore, necessarily involves conflict and compromise (Lang and Armour, 1980: 20).

The process of identifying and analyzing problems, and exploring and assessing options open to an urban community in pursuit of general goals and specific land development objectives (Chapin and Kaiser, 1979: 63)

Urban planning remains explicitly geographical because the output of the process is an urban plan, which is "a spatial arrangement of land uses and as a course of governmental action to influence land use" (Chapin and Kaiser, 1979: 85). Khakee (1982: 72) stresses this spatial dimension in his definition of urban planning as "basically concerned with the location, intensity and amount of land required for various space using functions."

According to the American Planning Association (APA), the professional concerns of planners are to be guided by a manifesto on planning principles. Some of the APA's central principles include the following:

- Serve the public interest;
- Support public participation;
- Recognize the long-range nature of planning decisions;
- Expand choice and opportunity for all persons;
- Facilitate coordination through the planning process (Lucy, 1988: 147-149).

Urban planning, *per se*, does not include planning that directly addresses social goals (e.g. reducing unemployment or increasing incomes). However, social goals and objectives can be achieved by directing or controlling development so that the content or configuration of the built environment can contribute to achieving social goals. For example, zoning or rezoning a number

of downtown blocks near rapid transit nodes for high-density affordable housing can address the housing shortage faced by low-income residents.

In the literature on planning, a distinction is sometimes drawn between two types of urban planning: decision-making planning and technical planning. Decision-making planning involves "attitude surveys about present and future conditions, definition of relevant policies, articulation of goals, formulation of alternative courses of action, and selection of a preferred plan" (Marsh, 1984: 9). Conversely, technical planning stresses "the various types of analysis and related activities that are used in support of the decision-making process" (Marsh, 1984: 9). These support activities include environmental and built form inventories, engineering analysis such as determining soil suitability for building construction, and assessment of impacts that proposed land uses may have on the urban environment.

Geographical concepts play a role in both types of planning, which perhaps accounts in part for the view that "the line separating decision making from technical planning activities is often indistinct, and in most projects the two types of planning merge into one another" (Marsh, 1984: 9). The rational planning model (RPM) is one of many means that can be used to conceptually link and organize the technical and decision-making aspects of planning. The RPM was adopted for this study in part because it has structural and functional similarities to models and approaches popular in the IA process. From the point of view of the integration feature of the research hypothesis, therefore, the RPM was deemed an appropriate and advisable model to employ in this research. A logical future direction for research might be to extend the planning model domain to consider other 'models' -- disjointed incrementalism, mixed-scanning, transactional, advocacy, interactive, etc. -- and to examine them in terms of their ties to IA.

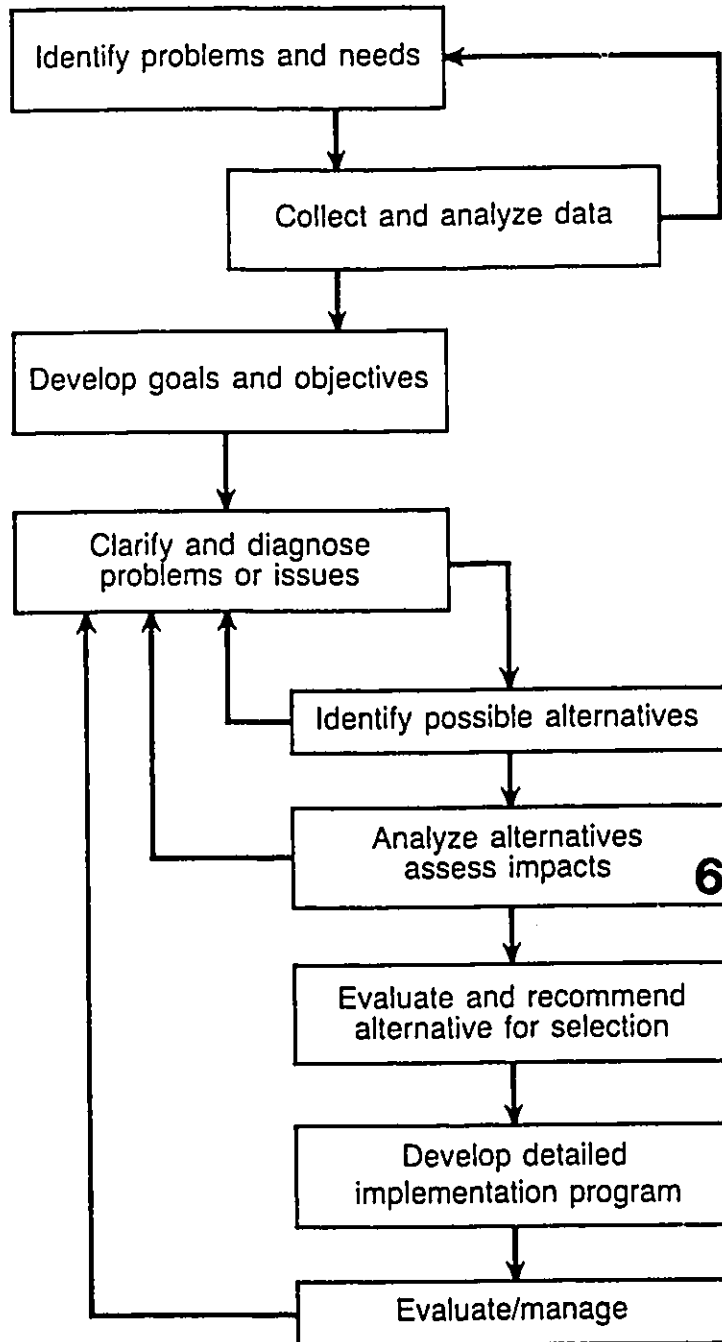
#### 5.4 The Rational Planning Model

The rational planning model remains a popular characterization of how planning processes in North America tend to be described. Despite mixing his nouns, Beauregard (1987: 367) identifies the Rational *Model* as "the dominant planning *theory*." Other writers (Jones, 1983; Fauquier, 1986: vii; Hodge, 1986; Feldt, 1988; Levy, 1988: 288; Wood, 1988; Nesbitt, 1990) concur that the rational planning model (or its facsimile) is the orthodox view. "The idea behind the model, as its name suggests, is to make the planning process as rational and systematic as possible" (Levy, 1988: 288). The basic components of the rational planning model are presented on the next page (Figure 5.2), and include the following steps:

1. Identify problems and needs. A definition of the problem, concern or issue to be solved requires elaboration;
2. Collect and analyze data. Here, there is an attempt to analyze the causes of the problem, and understand how it might be solved;
3. Development of goals and objectives. Goals are general statements of conditions which are considered desirable, and include such things as city-wide access to public transit or elimination of inferior housing;
4. Clarification and diagnosis of the problem. The problem and its context must be clarified so that alternatives developed later can be more responsive to identified goals and objectives;
5. Identification of alternative solutions to meet the planning objectives;
6. Analysis of alternatives and assessment of impacts. This analysis involves determining the impacts of alternative courses of action, and then evaluating them. Cost-benefit analysis, goals achievement matrices and other methods are standard methods used;
7. Evaluation and recommendation of actions. The chosen criteria for evaluation are implemented, and a decision is reached;
8. Development of implementation program for realizing the chosen course of action;
9. Surveillance and monitoring. Once implementation has been initiated, the process should be reviewed to ensure that the optimal course of action has been undertaken (ASCE, 1986: 8-17; Levy, 1988: 288).

These steps comprise the core of planning process work done in the planning and engineering departments of municipal governments. The process "provides a logical and rational approach to attaining clearly defined goals" (Dzurik, 1986: 39). The rational model of planning works well, in principle, "when all conditions are known, when a few simple goals have been established,

Figure 5.2 An Example of the Rational Planning Model.  
(Source: ASCE, 1986: 9).



when the means for accomplishing these goals are well defined and clearly understood, and when enough time is available to undertake the analysis necessary for arriving at a decision" (Feldt, 1988: 49). In practice, however, these conditions rarely hold. Hence, and despite the conceptual appeal of the rational planning model, a number of major operational problems exist:

1. The lack of data, information and/or knowledge to make good decisions, combined with the harsh reality that people -- politicians, planners, the public -- may differ widely about what could be or should be with regard to future states of affairs (Wellar and Harris, 1992). As Smith (1993: 58) observes, "absolute rationality is a myth. Decision makers usually operate in conditions of imperfect knowledge and uncertainty."
2. The continuing inability of manual or electronic information systems to provide decision-makers with reliable and pertinent data, information and knowledge bases for planning decisions beyond the simple or mechanical. These difficulties include data/information not collected at the time of an initiative, the loss of important information through aggregation of impacts (cumulative impacts), and the loss of reality that occurs in the transformation of data into mathematical models or representations (Wellar and Harris, 1992);
3. The limited validity of social models for the assessment of social impacts. Friedmann (1987: 165-166) suggests that rational decision-making models are unsuitable for social problems that are ill-defined or symptoms of other problems. Furthermore, while research often involves complexity, there are limits on what the public or politicians will 'tolerate' when confronted by numbers of variables and relationships in the research products. Also, changing social dynamics make it difficult to arrange for or achieve an orderly uncovering of the future. Rather, the future is 'revealed' through a series of crises, breakthroughs, and transformations which do not provide a stable framework for decision making (Dzurik, 1986: 40); And,
4. Implementation of the rational model has proven to be difficult to achieve except in the simplest of political or planning situations.

Attempts to compensate for these shortcomings have resulted in modifications and adjustments to the RPM through technical means (incrementalism, optimization, multiple objective approach) and socio-political means (advocacy planning, citizen participation, radical planning).

## 5.5 Summary

Urban planning is a collective exercise that considers and seeks to reconcile the competing

interests of the relevant groups (elected officials, citizens, developers, governments, self-interest groups, and planners). Addressing the consequences of alternative courses of action is central to both the conceptual and operational aspects of 'good planning.' This is where the utility of impact assessment arises. Adopting the rational planning model as a very general characterization of the functions of planning (while recognizing its limitations when regarded as more than a pedagogical device), and that the model shares a number of the content and process features of UIA, it is now appropriate to investigate the finer points of how urban impact assessment can be integrated into the urban planning process. The normative arguments for and against this integration are the focus of the next chapter.

## Chapter 6 The Integration of Urban Impact Assessment and Urban Planning

This chapter provides both a normative and practical investigation of the utility of integrating urban impact assessment into the urban planning process. After a brief overview of the relationship of the two processes, the intersection of impact assessment with the decision-making process itself is investigated. Then, the normative and practical advantages and disadvantages of integrating impact assessment into the urban planning process are discussed. Part of the central hypothesis of the thesis, that *impact assessment has evolved into a process of inquiry that should be integrated into the urban planning process*, is accepted. Based on that finding, five integration scenarios are presented.

### 6.0 A Brief Overview of the Urban Planning/Urban Impact Assessment Relationship

Given the overwhelming body of evidence that numerous things have gone wrong and continue to go wrong in many North American cities (Kemble, 1989; Wellar, 1988a; Wellar, 1989a; Wellar, 1990b; Bookchin, 1992) and cities elsewhere in the world (Lowe, 1992), the utility of integrating a tool that assesses the consequences of proposed policies or development initiatives into the urban planning process is compelling. As McDonic (1988: 163) suggests, "rapid urban and industrial change brings both direct and indirect consequences for the environment and society and requires an effective response from policy makers." Since the effectiveness of urban impact assessment is, by definition, tied to its intrinsic focus on the identification and assessment of the consequences of human initiatives on the social, economic, cultural, aesthetic, and ecological milieu of the city, it is, in principle, a prime candidate to bring before policy makers and plan makers alike (Wellar, 1990d).

One of the early discussions of the integration of IA into the urban planning process appears in Steger and Lakshmanan's article "Plan Evaluation Methodologies: Some Aspects Of Decision Requirements and Analytical Response." It appeared in Urban Development Models (Hemmens, 1968) and was one of a number of papers in the text that explicitly or implicitly related planning and impact assessment through models of urban development. That seminal article

addressed the fundamentals which underlie much of the current thinking on impact assessment, and attempted to locate impact estimation and evaluation within the planning process. For Steger and Lakshmanan, planning and impact assessment are two hats for virtually the same function.

Upon review, it appears that the definition of planning that the authors (1968: 45) provide for the planning process could easily be substituted for a summary of impact assessment. Steger and Lakshmanan (1968: 45-47) characterize the planning process as having the following components:

- Future needs and challenges are anticipated;
- Alternative strategies addressed to these issues are derived;
- Crucial impacts associated with the alternative planning strategies are estimated;
- The impacts of alternative plans or designs are evaluated according to general criteria.

Because of this seeming correspondance between impact assessment and planning, the proposition to integrate impact assessment with current urban planning processes seems redundant to some urban planners. In fact, a number of authors such as Wood (1988: 113) suggest that "the physical planning system in most places bears strong similarities to the EIA process." Planners with this perspective stress that much of the work of an urban planner is already concerned with the impact of human actions on the urban environment.

However, it is recalled and emphasized that impact analysis (e.g. of traffic, aesthetics) that is not synthesized, nor investigated in a replicable manner that can be used as a basis for input into a municipal environmental database, in no way constitutes formal impact assessment. Moreover, the view posited by Wood above presumes an impact orientation of the planning process, which is not generally the case in Canada. Planning places its emphasis on plan generation, updating those plans, and controlling development, while impact assessment focuses on a holistic scoping of the initiative in its proposed context, and then evaluates those impacts

that are deemed significant.

Planning has historically concerned itself with a broad notion of the 'public interest.' EIA begins from the perception of an historic imbalance in decision-making considerations and is directed toward correcting that imbalance by placing greater weight on natural and social environmental concerns and considerations (Lawrence, 1992: 23).

Moreover, planning has a degree of historical inertia, beginning with its institutionalization as a profession, that has yet to grip the practitioners of impact assessment.

Perhaps the strongest differentiating point between planning and impact assessment involves the end-result of each process. That is, and recalling Wellar's schematic in Figure 5.0 and other supporting viewpoints (Chapin and Kaiser, 1979; MOMA, 1985), planning is geared towards the preparation and application of an official plan or other mission statement. As such, Lawrence (1992: 23) argues that planning:

tends to emphasize the realization of the positive (the achievement of goals). EIA, as a field of practice, is more concerned with minimizing the negative (selecting the alternative with the least adverse environmental effects).

In effect then, while planning and impact assessment are similar in many respects, there are significant differences in the philosophies and perspectives that they bring to matters concerning the investigation and management of the urban environment.

Moreover, and just as the implementation of impact assessment moved to an increasingly inclusive definition of the 'environment,' so too has the practice of urban planning become more inclusive. Originally, urban planners tended to place emphasis on treating the city as a physical arrangement of streets, buildings and parkland. Even now, and many decades after the advent of the planning field, urban planners still "tend to focus more on the built form, than on the actual lands being developed" ( Hazra, 1992: 12). Nevertheless, there is widespread recognition of the

multi-dimensional nature of planning as a synthetic discipline that attempts to tie physical planning with economic development and social planning. "As the two fields have evolved, there have occurred numerous parallel, partially overlapping and, to some extent, redundant forms and functions" (Lawrence, 1992: 23).

The interrelationships between planning and IA are, therefore, substantial. In one sense, IA could be construed as a subset of planning that is oriented towards the assessment of the social, economic and natural environmental consequences of particular project types. In that context, IA can be regarded as a specialized type of development review (Lawrence, 1992: 24). As well, IA can be regarded as a process that evolved to meet needs not being met by the exercise of traditional planning, particularly the need for the systematic and comprehensive assessment of major or potentially detrimental projects or policies of a magnitude ranging from situation-specific to city-wide.

Further, planning and IA can trigger the need for each other. That is, the need for IA in planning processes is well-established through the realization that environmental considerations are often diminished through deference to engineering and cost considerations. Similarly, IA sometimes necessitates planning. Suppose, for example, that a large tract of land in a downtown becomes available for redevelopment. However, this tract of land is both contaminated by half a century of industrial pollutants, and has considerable heritage value (e.g. LeBreton Flats in Ottawa). An impact assessment addressing these parameters would require a context provided by extensive urban planning of the land use designations for residential and recreational areas, for heritage conservation, and for environmental management. In effect, the impact statement would provide the rationale for the creation or modification of urban plans as frameworks or contexts for the assessments. The first step in establishing the basis for integration of IA and urban

planning is, therefore, to examine the specific role of IA in the decision-making process.

### 6.1 IA and the Decision-making Process

Erickson (1979: 22) describes western 'technobureaucratic' societies as pluralistic; that is, "societies characterized by many different values and attitudes." In such societies, the value system associated with one institution (e.g. a particular religious body) can be antagonistic or adversarial to the values promulgated by another institution (e.g. a particular corporation). Since values determine the motivation to undertake specific courses of action, the identification of appropriate values is a complex process in pluralistic societies (Erickson, 1979: 22). To paraphrase, the crux of the decision-making problem in pluralistic societies is determining which values are more important or significant than others.

Steger and Lakshmanan (1968: 47) stress the difficulties associated with the inevitable trade-offs that accompany conflicting values and express the hope that planners, working "in cooperation with social scientists," can help resolve this problem by developing a multidimensional framework "that explores peoples' goals and desires in their plurality and communality." One multidimensional framework that fits into the integrative perspective they address is impact assessment.

The way in which a plurality (or even a dichotomy) of values and predicted consequences of actions are integrated to determine courses of action constitutes the selection system of a decision-making process. This component of the decision-making process may involve complex institutional and public interactions, as seen in citizens' initiatives in the United States, in referenda in Canada, or in public hearings that are legally or otherwise required in certain planning processes (Erickson, 1979: 22). A decision-making process can be analyzed in terms

of its experiential base, its prediction system its value system and its selection system (Figure 6.0).

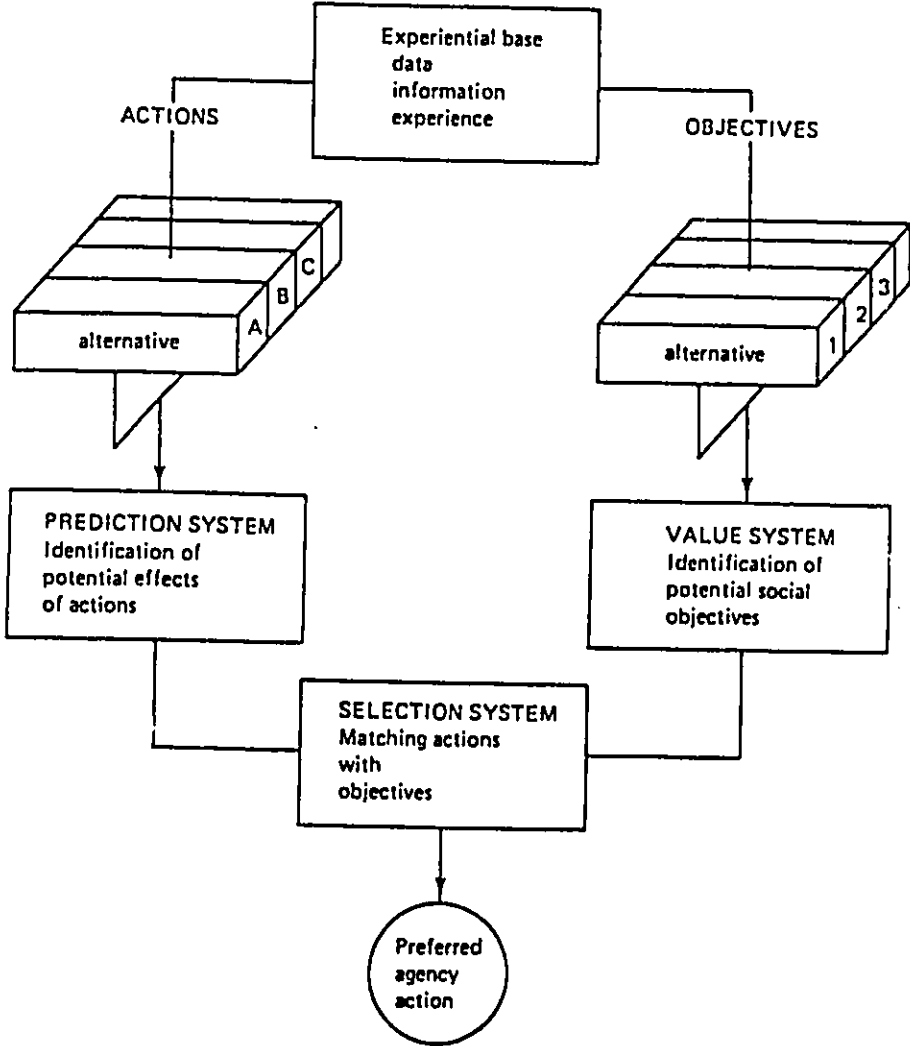
The experiential base of decision-making process represents the totality of all data, information and knowledge achieved up to the present. It consists of experience with both people and the physical environment. Similarly, for a government agency, it consists of the legal authorization and all previous actions and experiences in carrying out the mandates within its authority (Erickson, 1979: 21). The data and information of the experiential base helps decision-makers to identify the possible alternatives, as well as the goals and objectives that are to be achieved.

Good decisions are those that result in the realization of a selected future. Bad decisions are those that do not result in the realization of a selected future (Erickson, 1979: 21).

Erickson (1979: 21) goes on to suggest that, to some degree, the difference between a good and a bad decision pertains to the difference between a good and a bad prediction system. A good prediction system is a tool that permits decision makers to relate, with some accuracy, present actions with the future consequences of those actions. Achieving a good prediction system depends in part, however, upon first achieving good information and knowledge bases. This key matter is addressed by Wellar and Harris (1992) who examine it from a combined planning, impact assessment, and decision-making perspective.

In their review of progress made in the development of information and knowledge bases for decision-making, Wellar and Harris (1992: 87) emphasize relationships: that is, better data bases --> better information bases --> better knowledge bases --> better decision-making --> better decision outcomes. They note, however, that such a 'flow of enlightenment' depends upon a number of obstacles, conditions, or intervening steps between the ability to:

Figure 6.0 The Basic Components of the Decision-making Process.  
(Source: Erickson, 1979: 22).



- Identify what exists in the real world;
- Represent the real world through data and information;
- Interpret and explain the whys and hows of real world situations and relationships; and,
- Predict the outcomes of public and private decisions to intervene or not intervene in local, regional or global events, processes, or states of affairs (Wellar and Harris, 1992: 88).

In general, examination of those commentaries leads to the observation that impact assessment can be regarded as a decision-making tool. First, the needs assessment, scoping, and public participation stages of IA attempt to ensure that comprehensive baseline data are used to characterize the current situation. Second, IA's prediction stage represents a prediction system that identifies the potential effects and impacts of actions. Third, IA involves a value system through the operationalization of decision criteria in its significance assessment and evaluation stages. And fourth, IA itself is a selection system since decisions can be made on the basis of available data according to decision rules formulated during the process.

In particular, however, and more specific to IA as a decision-making tool, it is recalled that the main objective of impact assessment is "to provide decision-makers with information on the implications of alternative actions before a decision is made" (Folk, 1982: 1). It becomes imperative, therefore, for IA to be both an efficient and effective process of inquiry in the interests of meeting the needs of decision makers. As such, impact assessment is a structured approach, as well as a formal set of procedures for ensuring (if legislated or institutionalized) that physical and social environmental factors are accounted for in decision-making processes, whether local, provincial or national.

As Roberts and Roberts (1984: 100) contend, there is common agreement that the fundamental aim of impact assessment is to ensure that decisions are made on the basis of informed knowledge of the consequences of human initiatives and development. Whether or not the

initiative is permitted to proceed depends on the other factors that are weighed by decision makers, including considerations of specific sectoral or partisan needs such as local unemployment, requirements for fiscal restraint, or overriding local agendas (e.g. tourism, nationalism, defence). Steger and Lakshmanan (1968: 48) recognized early on that "decision-makers in the political milieu will tend to seek solutions which ameliorate existing problems rather than allow an approach to a set of pre-determined goals." Be that as it may, however, impact assessment *per se* is neither discounted nor negated. This holds because IA has both a long- and short-run capability that ensures its integrity as a means to assess the consequences of change, regardless of time frame.

Clearly then, and this point warrants being made explicit, impact assessment cannot, of itself, ensure that the adverse impacts of human initiatives will be avoided. However, if the stages of the inquiry that are normally associated with the process (e.g. as seen in Whitney and Maclaren's normative framework in Chapter 3) are implemented, public participation ensures, at a minimum, that decision makers are apprised of the public's views concerning the conclusions of the impact assessment statement. Moreover, it is noted and emphasized, and following from the preceding discussion, public participation is only one dimension of impact assessment that relates the process of IA to decision making and, more generally, to planning. Hence, the utility of, or rationale for, integrating IA into the urban planning process becomes a crucial question when considering ways of increasing the efficiency and effectiveness of the urban planning process.

In response to the overriding question, Should impact assessment be integrated with the urban planning process?, it is the finding of this research that the proper response is 'yes.' Given this response, under what conditions and for what purposes is integration desirable? These are the

central questions to be addressed in the next section.

## 6.2 The Integration of IA into the Urban Planning Process

The inertia of tradition, and the law, has determined the necessity of integrating impact assessment into the planning process, and not the other way around. As expressed by Thomas (1987: 12):

Historically, land use planning was embodied in legislation before EIA so that most attention has been given to incorporating EIA into the 'planning process.'

Given the historical precedent of incorporating planning into legislation in Canada, the federal government has, in principle, decided that impact assessment should be integrated into the planning process. For example, when the Canadian government adopted EARP in 1973, the precise purposes of the process were to:

1. Take environmental matters into account throughout the planning and implementation of new projects, programs and activities;
2. Carry out an EIA for all projects which may have an adverse effect on their environment before commitments or irrevocable decisions are made; projects which may have significant effects have to be submitted to the Federal Environmental Review Office for formal review;
3. Use the results of these assessments in planning, decision-making and implementation (Effer, 1984: 114-115).

Second, and given the many deficiencies associated with planning on the one hand, and negative results that occur from failing to respect the environment in decision-making processes, the central argument for integrating the two processes is compelling. That is,

While it is true that environmental goals are often implicit in the land-use planning process and, therefore, that some provision for considering environmental matters in plan preparation already exists in many cases, the planning provisions in most countries fall well short of rigorous EIA procedures (Wood, 1988: 104).

Acceptance of the finding of Wood, which is shared by others (Armour, 1989; Armour, 1991), sets the stage to examine arguments for, and against, the integration of impact assessment with the urban planning process.

### 6.3 The Benefits of Integration

Obviously, the benefits of integration include all of the advantages of impact assessment. The overriding contribution of impact assessment is that it is a formalized and replicable method of inquiry concerned with minimizing the environmental consequences of human initiatives.

Furthermore, impact assessment, as an analytical and synthetical method of inquiry, meets a number of criteria that establishes its value to the planning process. First, IA has an intuitively understood appeal: maximize the good and minimize the bad associated with a particular initiative. Second, IA is applicable to a wide range of initiatives, including projects, policies, programs and plans. Third, IA is not entirely data-dependent. When the limitations of time and cost affect a particular research environment, IA can be executed accordingly. Finally, IA uses proven methods. The city is not an experiment of the laboratory variety, and proven methods that have faced considerable peer review should be used (Carroil, 1975: 2-3).

#### 6.3.0 Specific Benefits For the Project or Policy Proponent

For the project or policy proponent, conducting research within an IA framework is claimed to yield the following benefits:

- Enhance the project's or policy's marketability;
- Reduce the need for an Ontario Municipal Board hearing;
- If required, provide a full disclosure document acceptable for formal hearings convened by the OMB or in court;
- Promote good public relations;
- Provide the public with environmental information that can optimize the content and design of project or policy alternatives;
- Ultimately, reduce the possibility of litigation arising from environmental impacts through mitigation measures explored and implemented (Curtis, 1983: 24).

#### 6.3.1 Specific Benefits for the Municipality

For the municipality, the following advantages can be associated with integrating impact

assessment into the urban planning process:

- Increased assurance that decisions concerning project, policies and programs are executed in the highest and best interest of the general public, and that the natural, social, economic, and cultural environments of the municipality will be protected and/or enhanced;
- A formal IA necessitates the creation of an environmental data base which, by implication, provides better data for other planning activities or uses;
- Increased familiarity with IA enhances a municipality's ability to obtain approval from the province under the requirements of *The Environmental Assessment Act* for municipal projects requiring approval (Curtis, 1983: 24).

### 6.3.2 Specific Benefits for the Public

For the public, benefits of integrating IA with planning processes include:

- Helping to ensure that details concerning the proposed initiative are made available;
- Formalizing opportunities for public comment with respect to predicted consequences, and;
- Mandating that some discussion of alternative courses of action is offered.

The latter feature is particularly noteworthy in that it is not necessarily a condition of a planning proposal.

### 6.3.3 The Benefits of Integration that Mitigate the Weaknesses of the Urban Planning Process

#### 6.3.3.0 Impact Assessment as a Mechanism to Ensure that Impacts are Considered Early in the Project or Policy Design Phase

Government officials realized that impact assessment offered a procedural mechanism whereby different types of concerns and consequences could be factored into the planning process.

Specifically, the use of impact assessment can ensure that environmental or socio-economic impacts are considered at the same time as economic and engineering factors in terms of deciding whether and how to proceed with proposed policies or projects (Armour, 1989: 3).

In addition, more discussion of impacts is, as a rule, clearly desirable, especially when there are complex or sensitive aspects that could 'erupt' into public debate after an initiative has been approved. For example, it is disruptive for developers when they have to postpone, alter or abandon an initiative because they have not anticipated the governmental response to it (Couch *et al*, 1981: 19). The point of delayed reaction is pursued in Holling (1978: 6):

The result of simple reactive assessment is therefore intolerable. How can we know what to measure for base-line information or assessment if the detailed character of the policy or development is not revealed until it has largely crystallized?

Holling's point is pervasive throughout the literature on impact assessment, namely that the IA process must intersect with the development process in its earliest stages. A similar argument is that "the effectiveness of environmental impact assessment as a preventive strategy is related to its point of intersection with planning and decision-making processes" (Armour, 1977: 10).

If timed properly, environmental assessment can provide useful inputs to functional and comprehensive planning. The information developed through an inventory and analysis of the environment, the prediction of potential environmental effects of proposed action, and the examination of mitigation measures, can be used in plan preparation to promote environmentally sound site selection and development. Further a regular before-the-fact evaluation process such as EIA provides a means of testing the continued relevance of plan policies and objectives (Armour, 1977: 13).

Normally, the predominant method of development planning involves design within an economic and legal context. That is, considerations concerning how much it will cost and whether the municipality, the developer, or objectors can be sued are the central concerns, and there are numerous instances that detail the inadequacies of such an approach. The fundamental properties of any initiative (policy, program or project) are set very early in the design stage. "If problems arise because the original context was too narrow, any fundamental redesign is extremely difficult unless there is extraordinary pressure. Confrontation is guaranteed as different groups identify clear conflicts with their own interests" (Holling, 1978: 6). Obviously, it is early in the design stage that IA is most effectively applied.

### 6.3.3.1 Amelioration of the Static Nature of Planning

According to Lang (1977: 64), one of the basic weaknesses of the urban planning process is that once an inventory of existing conditions is complete, future-oriented plans will continue to reflect an inventory that is no longer representative. Obviously, conditions in any environment change, and perhaps nowhere more quickly than in the city, and especially just prior to or during surges of growth or decline. Consequently, a mechanism such as impact assessment that can introduce currency into the planning process is desirable.

Further, not only can existing conditions change, but so can the perceptions of the desired future state. That is, impact assessment addresses a proposed project or policy's impact in an *existing* environment, with the facts representative of the existing situation. On the other hand, however, "plans were traditionally quite general and became static and negative, dictating what can't be done instead of providing the flexibility to adapt to more rapidly changing economic and social factors" (Tywoniuk, 1989: 278). In the sense of injecting an element of 'dynamism,' therefore, it appears non-arguable that impact assessment can help planning become more timely *vis-à-vis* existing states of affairs, and more forward-looking *vis-à-vis* preferred states of affairs (recall Dimension 'B,' Figure 3.1).

### 6.3.3.2 Impact Assessment as a Mechanism to Address Cumulative Impacts

Endemic to any planning and development problem is the issue of incremental changes adding up to unacceptable holistic or final changes. This is particularly applicable to land-use decisions because hindsight offers so many examples where small positive sequential changes, each viewed in isolation, led to a negative over-all effect (Dorney, 1985: 147).

Cumulative impact assessment, designed to address environmental change on a larger spatial and temporal scale than typical impact assessment, addresses the overall negative effects and impacts of incremental or synergistic development and other initiatives. Put another way, the

'tyranny of small decisions' is specifically addressed via the cumulative impact assessment approach.

#### 6.3.3.3 Impact Assessment as a Mechanism to Short-Circuit Cross-Jurisdictional Complexity

Another strong case can be made for the integration of impact assessment into the planning process through the recognition that many of the current issues plaguing cities have *widespread* origins and manifestations. Lang and Armour (1980: 283) observed that "an inescapable feature of much public planning, and of environmental planning in particular, is that issues and actions to cope with them tend to transcend the boundaries of individual agencies." Issues such as air and noise pollution, suburbanization, urban sprawl, and second and higher order impacts arose after the jurisdictions of most government organizations were delineated. Many of these issues have a cross-jurisdictional nature, which complicates their management and any planning that may exist to combat them (Wellar, 1982).

Solving cross-jurisdictional issues "requires a capacity to appreciate the *structure* of both the substantive problems themselves and the institutional relations that respond to them" (Lang and Armour, 1980: 283). These new issues, particularly environmental ones, are capable of challenging the *status quo* in terms of the allocations of resources, organizational structures and even the legitimacy of institutions. That is, councils, departments and agencies with a municipal mandate may wish to look after their jurisdiction without interference from other parties. However, due to the trans-boundary nature of environmental factors (e.g. air quality, noise, use of municipal infrastructure), 'business as usual' is not likely to be sufficient, and changes may be required in regard to what is done, how it is done, and who does it.

For example, the planning department of a municipality in Ontario deals with the built form of the urban landscape, as well as the "whole spectrum of issues related to the desirability of a proposal, including environmental issues" (Hazra, 1992: 12). An already onerous burden can be made more so by the input of other layers of government, of other agencies, and of committees and tribunals. By way of illustration, conservation authorities address impacts along rivers, the Ministry of Natural Resources or the Environment is concerned with impacts on flora and fauna, and the Regional Planning Department may address a full range of regional concerns. And, other agencies, such as the Department of Public Works or the Ontario Municipal Board may affect a particular proposal, depending on the situation.

John Sewell, Chair of the Sewell Commission, observed that "there's no coordination of land uses at the Provincial level. Each Ministry has its own Minister. Its own Act. Its own staff. And its own turf. God forbid any integration" (Hardy, 1991: 6). The integration of the concerns and requirements of the different agencies involved is a formidable task, both politically and operationally. Generally speaking, "the fragmentation of responsibility for various aspects of the environment, in many cases, precludes a comprehensive and integrated approach to assessing the long-term consequences of a development" (Hazra, 1992, p. 12). Impact assessment, in its synthesizing role as the integration point for a number of disciplines and agencies, can serve to streamline and funnel different mandates into one process, thereby helping to reduce differences that may be solely or primarily of a bureaucratic nature.

#### **6.3.3.4 Concluding Remarks on the Overall Benefits of Integrating Impact Assessment with the Urban Planning Process**

The preceding points represent the cornerstones of the rationale for integrating impact assessment with the planning process. The emphasis of IA on the consequences of human

initiatives:

offers to planning a dynamic approach to the inter-relationships among human, the built and the natural environments complementary to the inter-relationships addressed through traditional planning approaches (Lawrence, 1992: 25).

Armour (1989: 4) states that the integration of impact assessment with the planning process is "the raison d'être of impact assessment." That assertion brings the next question to the forefront: How can impact assessment be integrated with the urban planning process?

#### **6.4 Five Possible Frameworks for Integration**

There are a number of contexts in which the integration of impact assessment and urban planning could occur. First, changes to administrative procedures would be required, and this would entail ensuring that "development law and policy are made to explicitly include statements specifying that impact assessments are necessary before development plans are accepted by legal authorities as legitimate" (Rickson, Burdge and Armour, 1989: 348). This proposal addresses the legalities of integration, and establishes a basic point of departure to make impact assessment a legal and/or formal part of the urban planning process.

In Ontario, "municipalities have the statutory authority to integrate environmental assessment into existing land use planning processes," even those concerning privately-funded initiatives (Curtis, 1983: 25). The integration process could be realized by instituting an IA requirement in the Official Plan for application to specific development types, to specific land areas, or to specific land use changes. Second, institutional processes would require modification. One suggestion involves a fundamental alteration and "refers to changes in attitude and 'ways of doing business' such that social and environmental effects are incorporated into all stages of development-related decisionmaking, from the initiation of plans through their implementation" (Rickson, Burdge and Armour, 1989: 348).

This dimension of integration involves the rudimentary considerations of values, private and public interests, compromises, 'deals,' etc. associated with development. By way of elaboration, it is broadly held that the essence of local politics is short-run goal realization so as to influence the electorate at election time. Since it is difficult to convince politicians to forego short-term, vested objectives in favour of the long-run benefits of environmental management, or the imposition of sound planning principles (Wellar, 1990b: 1-4), ways and means of altering mind-sets to think and act with due regard for longer management horizons are required to overcome this institutional barrier to integration. While IA is not a panacea, by its very nature of explicitness, and its focus on minimizing negative consequences, it holds promise as an instrument for change in political values and attitudes about the planning-development relationship.

Concerning the actual procedural integration of impact assessment with urban planning, there are a number of possible scenarios. The five most obvious possibilities include the following:

- No integration;
- Intersection of impact assessment with the urban planning process at a discrete point;
- Partial integration;
- Total integration;
- Replacement of the planning process with IA.

The implications of each of these possibilities are wide-ranging. Since the effectiveness of integrating impact assessment with the planning process "ultimately depends on its point of intersection with the planning and decision-making process" (Armour, 1989: 5), it is appropriate to explore and establish the relative merits of each of the possibilities.

#### 6.4.0 The First Framework: No Integration of Impact Assessment with the Urban Planning Process

At present, the use of formal impact assessment processes by municipalities throughout North America is not extensive. In other words, while IA has been 'exposed' to elected officials, planners, and other professionals through the mainstream literature and via presentations and references at numerous conferences in the fields of planning, urban geography, urban and regional information systems, transportation, environment, public administration and regional science, many planning departments have done little to formally integrate IA into the planning process. This is the 'meltdown scenario,' where the advantages of using impact assessment are entirely overlooked.

Nevertheless, this tacit policy of 'non-action' may, in fact, reflect a policy decision, although this possibility may never be made explicit. That is, there are many arguments put forward to justify the point of view that there is no need to, or that there are even reasons not to, integrate impact assessment with the planning process, including the following:

1. First, "since most professionals have been trained in universities that are organized around disciplinary departments, and professional associations are primarily based on disciplines, planning techniques promoting the necessity of interdisciplinary relationships will meet some resistance" (Rickson *et al*, 1990: 235). Because of the wide variety of impact indicators and the comprehensiveness of the definition of the environment, impact assessment draws on the expertise of many disciplines; in this way, IA is one such planning technique. Armour (1989: 7) identifies the problem as 'disciplinary chauvinism.'

Similarly, Rickson *et al* (1990: 238) identify this difficulty as 'disciplinary inertia,' where individuals, organizations or communities "cannot respond productively to change or opportunity." More specifically, disciplinary inertia is a situation in which professionals (e.g. engineers, biologists, sociologists, economists) are so narrowly specialized that they cannot effectively collaborate with each other. The difficulties associated with this so-called disciplinary inertia represent one of the most prevalent arguments against the integration of impact assessment with the planning process.

However, this argument against integration 'confuses apples with oranges.' Disciplinary inertia already exists within urban planning, and within those disciplines oriented towards impact assessment (e.g. geography, engineering). The target for this argument is the tradition of education as a whole, and while not irrelevant to the integration position it appears inappropriate as a means of addressing the issue.

2. Some conservative planners view impact assessment as a disruption to existing practices that already work well. While planners alone are not being held accountable for all that has gone wrong, Wellar (1990b: 1) raises serious challenges to any claim or pretext that planning practices have been working well:

The following are some of the symptoms of our planetary bill of ill health: widespread degradation and destruction of land, water and air resources; loss of farmland, wetlands, forests and rainforests; the greenhouse effect; overflowing garbage and toxic water dumps; lack of medical, educational and social services; inadequate and deteriorated infrastructure; inappropriate urban development; destruction of established communities; etc., etc., etc. And worse, unfortunately, the general state and quality of our local to global health is apparently deteriorating at an increasing rate, in increasing numbers of areas, with increasingly painful and often disastrous results.

The overview by Wellar, and the Brundtland Commission, both supported by widespread tangible evidence of things gone wrong in the 1960s, 1970s and 1980s, suggest that, in point of fact, there is no basis to conclude that existing practices work well at or between the local and global scales.

3. Some contend that collusion between developers and planners could be facilitated by introducing a process such as impact assessment which can, if manipulated, merely give the appearance of the impacts being considered. As Livingston (1990: 110) writes, "EIA is a grandiloquent fraud, a hoax, and a con...while sanctimoniously reciting the catechism of 'environmentalism,' it anoints and blesses the process of 'development.'" In other words, developers will do what they've always done, but with the tacit approval of a process that deceives the public into thinking that potential impacts are and have been considered. Livingston (1990: 110) goes so far as to suggest that impact assessment has become the "handmaiden" to development. Similarly, Roberts and Roberts (1984: 148) argue that:

the greater the stress placed on early collaboration between local planning authorities and developers in advance of public inquiries, the greater the potential erosion of public influence and indeed of established political processes. EIA will be dangerous if it is seen as a means of taking the heat out of adversarial inquiries.

Obviously, collaboration between developers and planning departments could induce a tendency to overlook, downplay, or intentionally exclude potential impacts that would otherwise be of considerable concern to the public. As it stands, Armour (1989: 5) suggests that impact assessment is used "as a means of justifying planning decisions rather than contributing in any meaningful way to them."

Nevertheless, the fact that IA *can* be used in a meaningless way in no way necessitates that this is how it has to be. Removal of discretionary clauses within the legal framework for municipal IA would also negate this counter-argument. Universality of application of the process to certain types of development would ensure its meaningfulness and legitimacy.

4. Some critics posit the view that "the sheer volume and weight of paper generated by EIA will tend to pre-empt discussion of alternatives at the public inquiry" (Roberts and Roberts, 1984: 149). Volumes of analysis of impacts, garbed in 'techno-speak' and quantitative 'science-speak,' may lead the public to a state of disinformation, rather than adequately apprising them of the impacts that concern them. In the interests of comprehensiveness, the impact statement may undermine its fundamental objective: informing the public and decision makers.

While a valid concern, it is no different (in large measure) from the paper problem caused by numerous lawyers and expert witnesses appearing at a hearing. Moreover, this criticism of IA can again be dismissed in light of recent trends toward the inclusion of scoping in impact assessment, which effectively limits the issues under investigation to those of the greatest concern to the relevant groups.

5. Roberts and Roberts (1984: 149) also contend that "when a particular local planning authority favours a development, it will have no incentive to press for a truly exhaustive EIA." Without the proper motivations underlying the decision to study a particular development proposal or policy, there is little doubt that exhaustiveness and adequacy will *not* be adjectives that could be used to describe a particular impact assessment process.

However, exhaustiveness is no longer considered a critical criterion for adequacy of an EIS. Once the scoping is completed, only those impacts of significant concern to the relevant groups are to be addressed. Once again, questions of proper motivations driving the behaviour of planning actions return to the elements and intricacies of the process itself. If the process has universal applicability to certain types of development and certain types of initiatives, and if that

applicability is not undermined by the opportunity for discretionary decisions on the part of City Council or the planning department, then this criticism can be legitimately dismissed.

6. A number of specialists working in the impact assessment field have identified a scattering of methodological difficulties associated with impact assessment. Some contend that the obstacles are insurmountable, particularly the lack of basic city-level data, and inadequacies associated with the methods of prediction (Jones, 1983: 69).

An inadequate data base is, of course, a serious problem for the successful application of a formal IA process. However, once an IA process is in place, the municipal data base will, by necessity, be required to increase. The research of external consultants, internal employees, and the public all contribute to the expansion of this data base. Predictive capabilities in other disciplines started with similar methodological uncertainties. Like predictions in the hard sciences such as chemistry or physics, the predictability of environmental systems will increase with use over time, a matter that was explored in detail by Wellar and Harris (1992) in their examination of information and knowledge bases underlying urban and regional planning methods and models.

7. Cost is frequently cited as a criticism of IA, particularly when considering the voluminous EISs that have appeared in the past on major projects.

However, this is not presently a valid criticism since the production of EISs is now recognized as both a small proportion of total project cost, and as one of the best methods of anticipating and planning for long-run costs of data/information base development and use (Thomas, 1987: 23). By way of illustration, the average cost of EIS preparation has been estimated to be less than 0.2% of the total cost for construction (Thomas, 1987: 23). In the United States, percentage costs associated with EIS production involve figures of 0.5% for state projects, and 0.1% for federal projects (Hart, 1984: 356).

"A small scale project may, however, incur EIS-related costs in excess of 1 or 2 percent since there is a minimum threshold cost of environmental review regardless of project size; controversy may also drive up the cost of EISs for large-scale projects" (Hart, 1984: 356). Research in the Regional Municipality Of Waterloo in Ontario revealed that the cost of preparing an EIS is less than 1% of total development cost and that even this cost is defrayed by the "time saved in using the information collected in the environmental assessment as input for succeeding land use planning processes" (Curtis, 1983: 24).

8. Some authors suggest that there is an inherent government-based bias against a process like impact assessment. A "government has a total distaste for statutes which enable outsiders to sue it - regardless of whether or not the public interest might benefit from litigation" (Roberts and Roberts, 1984: 147).

This concern prompts the notion of an institutional barrier to the integration of impact assessment and urban planning. However, municipal law in Ontario clearly permits citizens and other interest groups (including developers) to sue the city if a breach in a by-law can be substantiated. The obvious counter-argument for this difficulty concerns the question of the purpose of the courts themselves. The courts provide a mechanism for jurisprudence to come as close to an approximation of 'justice' as possible. By enshrining impact assessment in law, the process would simply continue to facilitate criticisms that, in the Canadian system, involve 'fine-tuning' plans or by-laws to best serve the needs of the public. And that, in the final analysis, is the ultimate purpose of urban planning, to best serve the needs the public. Consequently, entrenching the IA process in law can be regarded as a gain, not a loss, for planning and the public.

9. Personal interviews by the author, and sources in the literature, reveal that there is considerable reluctance for government, particularly local government, to tamper with development issues, particularly when volatile political issues such as employment and tax revenues are involved. "There is substantial resistance by Government, to which DOE [Department of the Environment] is attentive, to the introduction into the planning system of impediments to industrial development - apparently because of the recession (Roberts and Roberts, 1984: 147).

Both public and private projects provide employment and badly needed tax dollars. In the early 1990s, Canada is again facing a nation-wide recession and cities are competitively pursuing commercial inputs into their own jurisdictions. Any added complexity to an already complicated development approvals processes, it is argued, is likely to make developers and businesses aware of which locations to avoid.

On the other hand, experience with the renowned 'beauty contest' for buildings in San Francisco, where architectural and environmental design requirements are the most stringent in North America, indicates that design edicts have not greatly interfered with the number of developers trying to work there. On the contrary, the new requirements merely achieved their stated purpose: improving the design and environmental sensitivity of downtown buildings. In other words, as long as the viability of the city is expected to continue, development pressure will be maintained, despite the nature of the development approvals process in place.

10. IA is sometimes attacked because it is assumed to be an analytical and critical process rather than a creative one. Instead of generating solutions, it sets limitations or requirements on what can be allowed (Holtz, n.d.: 103). While the IA process itself may not be proactively creative in the purest sense, it does engender creativity. In fact, IA is an enabler and facilitator of creativity. That is, given an unacceptable impact that an initiative is predicted to have, project or policy designers are compelled to seek either design alternatives, or to articulate sufficient mitigation methods to compensate for deleterious effects that

have been identified. When project or policy approval is at stake, along the line of 'necessity is the mother of creation,' creativity can be encouraged. There is every reason to expect that IA can contribute to the call for creativity.

As shown, there are arguments that attempt to discount the advantages of integrating impact assessment with the urban planning process. However, each of the identified (types of) objections can be successfully challenged. As a result, and in principle, impact assessment remains a valuable component to incorporate into the planning process. Therefore, by denying the integration of impact assessment into the planning process in practice, municipal governments ignore an opportunity for realizing substantial advantages. They include such public interest benefits as the minimization of environmental impacts associated with development, enlargement of the municipality's data base and information base, and study of cumulative impacts. Those matters are all part of 'good' planning and 'good' government, which are based on informed decision making among all the players in the planning and development process (Smith and Wellar, 1992).

#### **6.4.1 The Second Framework: Intersection of Impact Assessment at a Discrete Point in the Planning Process**

In this framework, impact assessment is regarded as a tool that is entirely subservient to the planning process. For example, Nesbitt (1990: 37) writes that "in determining policy and regulating development, society has a spectrum of environmental management tools available to it. Environmental planning and impact assessment are two." Translating Nesbitt's view, IA is something to be inserted into the planning process as a matter of choice among tools, and is not intrinsic to planning.

The rational or orthodox model of the planning process was provided in Chapter 5. In the rational model depicted in Figure 5.2, impact assessment intersects at only one stage of the

planning process: Box 6. In this case, the two processes are exercised in isolation of each other. In essence, the impacts of the various alternatives (i.e. projects, policies, and programs) are assessed in terms of their physical, social, economic, fiscal, environmental or aesthetic implications for the study area and are then inserted into the planning process at just the one point (ASCE, 1986).

In this model, impact assessment is a supplement to existing planning processes, and seems to be used to fill in the gaps or deficiencies without involving major alterations to current practices. However, and although some of the benefits of impact assessment are realized in such a framework, many of the advantages associated with the IA process are downplayed or overlooked entirely when such a strategy is used. Within the broader, general context of the limited use of urban impact assessment as discussed in Section 4.1, this appears to be the most common incidence of how impact assessment is actually used in urban planning.

This situation suggests that impact assessment:

has generally meant conducting an impact study in the project review stage of the planning process, either when alternative solutions are to be evaluated or when detailed implementation requirements are being drawn up (Armour, 1989: 5).

The major weakness of this style of integration is that IA is being narrowly used as an evaluation tool only, in the same way that a technique such as cost-benefit analysis is used. As a result, the full potential and capabilities inherent in the IA process itself are not being tapped. More specifically, the "full potential of impact assessment as a preventative measure is not being realized" (Armour, 1989: 5). And, of particular concern is that the multi-dimensional stages of the impact assessment process remain underutilized in this scenario, particularly in regard to the needs justification, mitigation, and monitoring stages.

#### 6.4.2 The Third Framework: Partial Integration of Impact Assessment with the Urban Planning Process

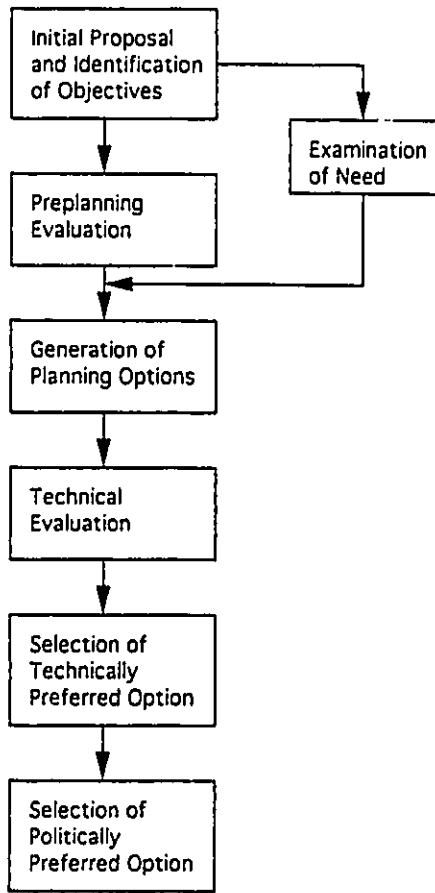
The partial integration of impact assessment with the planning process involves a greater synthesis than at one discrete point (Figure 6.1). In this case, the IA process and its result (the EIS) are part of the iterative planning process. Here, IA can best be seen as a substantial supplement to the existing process where intersections with the planning process are numerous and iterative. Once again, impact assessment can be regarded as a supplement to existing planning processes to fill in gaps or deficiencies without involving substantial alterations. Although subject to the discretion of the administrators who formulate the process, the increased presence of IA in this model yields more opportunities to maximize the advantages of impact assessment.

#### 6.4.3 The Fourth Framework: Total Integration of Impact Assessment with the Planning Process

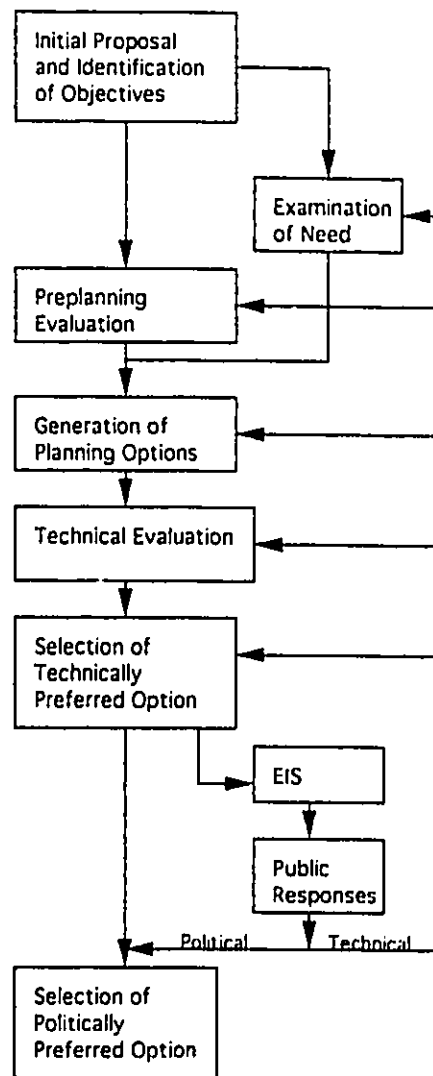
As expressed in Figure 6.2, total integration of impact assessment into planning involves "reformulating the planning process" so that impact considerations are central to it from start to finish (Armour, 1989: 5). Here, the IA process merges with the planning process so that each stage of the planning process is enhanced with an evaluative component concerning either initiative goals or impacts, alongside explicit assessment of those impacts of greatest concern.

Ideally, the levels of public participation and iteration among stages would be increased as well. While ambitious, this option recognizes the full merit of impact assessment and fully recognizes that "impact assessment can only be useful if done in the initial stages of the planning process" (Rickson et al, 1990: 241). While Rickson may have overstated the case with his 'only be useful' condition, it appears consistent with the literature to conclude that if this option is chosen, then all of the advantages of integration (as discussed in this chapter) can be realized.

Figure 6.1 The Planning Process without Impact Assessment, and then with Partial Integration. (Source: Thomas, 1987: 13).



The Planning Process Without IA

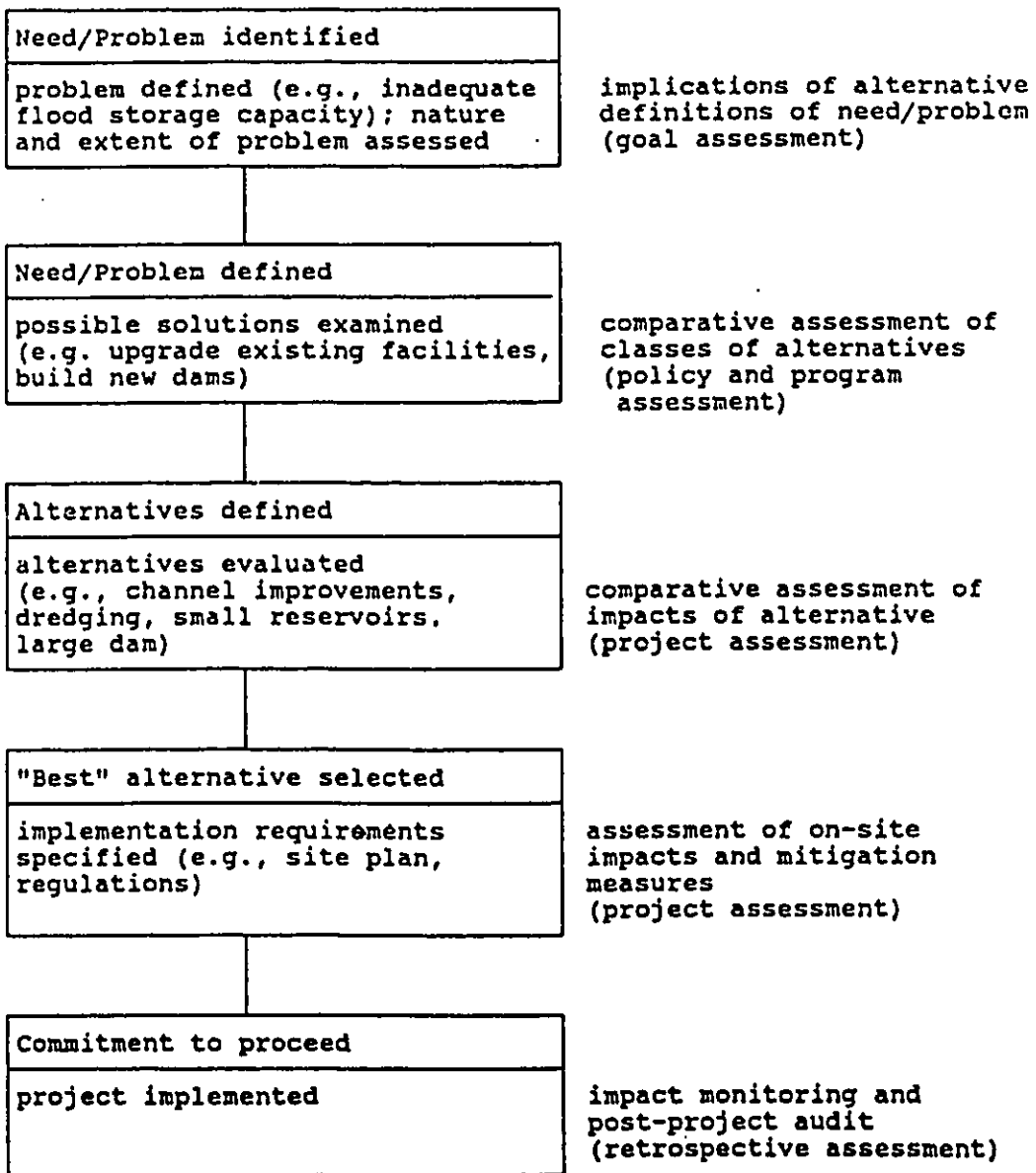


The Planning Process Incorporating IA

Figure 6.2 A Representation of the Total Integration of Impact Assessment with the Urban Planning Process.  
 (Source: Armour, 1989: 8).

*The Planning Process*

*With Total Integration of IA*



#### 6.4.4 The Fifth Framework: Possible Replacement of the Urban Planning Process with Impact Assessment

Obviously, there are a number of reasons why the replacement of the planning process with impact assessment is not an appropriate choice. First, the two processes are, despite their similarities, quite distinct in terms of their roles in public affairs. The mandate of planning is oriented towards identifying and achieving a preferred future, and generating plans to do so. The focus of impact assessment involves an attempt to understand the implications of human action and to optimize the consequences of these actions. Essentially then, the objectives of the two processes are different: compatible, but different. Second, there is a deep historical and institutional inertia associated with planning. As a result, its outright replacement by IA is not desirable because of the different nature of the planning function, and it is not likely because the established planning profession is not inclined to 'rock its own boat.'

#### 6.5 Summary

Although the logic of integrating impact assessment with the planning process is compelling, "there is little evidence that, in practice, it is taking place to any substantial extent" (Wood, 1988: 113). More specifically, Armour (1989: 5) argued that it is standard practice for impact assessment to be conducted as a process separate and apart from the planning process. Along with limited resources and other arguments itemized against the integration of impact assessment with planning, Wood (1988: 114) also cites the lack of educational input concerning the IA process in schools of geography, planning, engineering, and the other departments that feed the planning discipline. Like the introduction of any new administrative or technical tool in bureaucracies, impact assessment is meeting, and will continue to meet, resistance.

When any process or procedure is formalized in our society, especially within government agencies, it becomes an extension of the technocratic apparatus. That apparatus understands only numbers (Livingston, 1990: 110).

In the quotation above, Livingston is addressing the need of technocrats for numbers to make decisions. Unless 'hard' data and good information are available, bureaucracies are reluctant to commit themselves to decisions that can interfere with the political objectives (e.g. increasing employment and tax revenue) that can be facilitated by development. One conclusion to draw from that line of argumentation is that until urban problems or the failures of planning become so serious and transparent as to require and receive attention, impact assessment will continue to be a 'hard sell.' That will occur because long-run goals normally take a backseat to short-run goals on the local agenda. Those brief, summary remarks are empirically 'tested' in the next chapter, which examines the degree to which larger Ontario municipalities have adopted or intend to adopt impact assessment.

Chapter 7  
The Use and Application of Urban Impact Assessment  
in the Larger Municipalities of Ontario

This chapter contains the first section of the empirical research component. It is based on a series of interviews with planners and a sixteen-question survey mailed to 33 of the largest municipalities in Ontario. The responses to the interviews and the questionnaire are presented and examined. The overall result is a report on the existing and preferred state of affairs concerning the use and application of impact assessment in the larger municipalities of Ontario.

**7.0 A Brief Restatement of the Research Methodology**

As expressed in Chapter 2, following the review of the available literature, an empirical investigation of the impact assessment/urban planning relationship of the larger Ontario municipalities was undertaken with five research instruments. Planners in all municipalities of the research population responded to the questionnaire, either through the mail-back or through a telephone interview. The results of administering the questionnaire follow.

**7.1 Characterization of the Respondents**

All respondents to the questionnaire (the questionnaire package is presented in Appendix 4) were employed in one of the following four occupational categories: planning, environmental planning, policy planning, or policy analysis. Except for the one individual who identified himself as a policy analyst, everyone else was a planner by title. The bureaucratic level of respondents ranged from mid-level to top-level management. It is noted that the questionnaire was sent to the planning commissioners of each municipality.

The reasons for the selection of planning commissioners as the questionnaire recipient were two-fold. First, rather than presume to know who to contact, it was deemed appropriate that the municipalities select their respondents. Second, it was suggested by those knowledgeable in such matters that whoever the commissioners chose to complete the questionnaire would likely do so

more quickly than if a 'bottom-up' approach had been adopted. It is further noted that seven of the 33 respondents were either the Commissioners of Planning themselves, their equivalent (called a director of planning in some municipalities), or the director of a branch such as the Director Of Long Range Planning.

The respondents represented a range of educational backgrounds in terms of levels attained and fields or disciplines of training. The four most common educational backgrounds were: geography, planning, architecture, and economics. One individual listed political science, and another listed environmental studies; these were the only two exceptions from the four central educational streams. No respondent mentioned disciplinary specialization in any of the natural or life sciences.

Twenty-three of the 33 respondents listed planning as part of their educational background; eight of these twenty-two listed planning alongside other disciplines such as geography, architecture, economics and political science. Fourteen of the 33 respondents listed geography as their educational background. Of these fourteen, eight listed geography alongside either of two other disciplines: planning or architecture. Those respondents with geography backgrounds were evenly distributed between those municipalities using impact assessment, and those not using it. Other educational backgrounds mentioned (either alone or in combination with planning or geography) were architecture (three), economics (two), political science (one) and environmental studies (one). At least seven of the respondents mentioned that they had graduate degrees, although this information was not specifically requested in the question.

## 7.2 The Distinction between Formal and Informal Impact Assessment

In his overview of urban impact assessment in public policy processes, Wellar (1982) made an

explicit distinction between formal and informal IA. "Official or formal impact assessment processes are...those which are announced, evaluable, and verifiable according to specified performance measures" (Wellar, 1982: 48). In his discussion of IA in the public policy process, Wellar (1982: 50) further observed that:

Conversely, however, informal policy impact assessment processes associated with urban impacts are best characterized as numerous and diverse practices and activities in search of a principle. In this regard, informal processes are considered to be those which are unannounced, non-evaluable, and frequently ad hoc and disjointed. Further, they tend to be research- or project-oriented, and under the auspices of persons who are neither policy decision-makers nor decision-takers.

That distinction is of fundamental importance to the present study, the only difference being one of kind: emphasis has shifted from the policy process to the planning process, from policy makers to planners, and from policies to plans.

It is also possible, however, that the formal-informal distinction will take on increased significance as the IA-planning connection evolves. Therefore, in the interests of completeness, and of making this report self-contained on the topic of the formal-informal distinction, Professor Wellar was asked to explain why he made the distinction a key theme in his overview of the UIA-policy process connection (Wellar, 1982). His reply follows:

As a senior research officer, director, and senior policy advisor (Ministry of State For Urban Affairs, Government of Canada, 1972-79), I was very familiar with claims frequently made against governments, departments and agencies about hidden agendas, phony promises, studies for the sake of studies, data excuses, lying with statistics, flawed methodology, political expediency, etc. In my opinion, then and now, only those IA processes and studies which satisfy the terms and conditions of formal arrangements or inquiries are capable of not being swamped by the cynicism and distrust in which governments at all levels are held by citizens. And by other governments and agencies.

In other words, for an IA activity to serve the public interest, the activity must be a matter of record (thus, be publicly announced). It must be openly or transparently subject to 'tests' of consistency, reliability, reproducibility, etc. (that is, be verifiable), and it must have an established before-the-fact set of goals, objectives, mechanisms, procedures etc. against which the IA direction and effort can be examined and rated or graded on its commonly accepted merits (or demerits as the case may be).

That is, the IA activity must also be evaluable, which completes the triumverate of attributes (announced, verifiable, evaluable) for formal impact assessment.

And all that, of course, sets the stage for debating the significance of consequences arising from decisions and actions to maintain the *status quo*, or to allow or seek change (Barry Wellar, May 18, 1993, Pers. Comm.).

It was deemed appropriate to adopt the dichotomy for this study as well, and to identify a performance measure that satisfied the conditions or could be made to satisfy the conditions of being announced, verifiable, and evaluable when related to the impact assessment process.

Although other performance measures may be available, one performance measure was appropriate and adequate for this study. That is, for IA to satisfy the initial conditions set out by Wellar, it was necessary that the IA activity be explicitly incorporated in a municipality's Official Plan. Anything less than recognition of IA in an Official Plan was taken to make it an informal activity, and to render it subject to the kinds of negative judgements cited above.

It also warrants noting that, because of its incorporation in the Official Plan, an IA activity, or lack of IA activity, would be the basis of public meetings, committee meetings, and perhaps a hearing before a quasi-judicial body such as the Ontario Municipal Board (OMB). As a performance measure, incorporation in an Official Plan appears to be a necessary and expeditious means to ascertain a municipality's intention concerning impact assessment.

### 7.3 Handling of the Questionnaire by Respondents

Most respondents successfully completed the questionnaire following the guidelines given (in point form, concise answers, inclusion of documentation, etc.). However, despite an explicit differentiation between urban planning and impact assessment in the "Notes To Respondent" insert that accompanied each questionnaire sent (Appendix 4), an element of confusion remained

for some respondents. This apparently occurred due to the perception that urban planning had entirely integrated IA simply because impacts were considered when reaching decisions concerning development approval.\*

Feedback during the questionnaire preview also suggested that such a perception could arise, even if IA was expressly differentiated from planning in the "Notes To Respondents."

Fortunately, however, any ambiguities in responses were clarified through examination of answers to other questions, or by means of the final interview circuit by telephone. As a result, it is concluded that the handling of the questionnaire was satisfactory.

#### 7.4 The Use of Urban Impact Assessment in the Large Municipalities of Ontario

The following municipalities indicated that a formal impact assessment process was not used in their urban planning process:

1. City of Burlington
2. City of East York
3. City of Gloucester
4. City of Hamilton
5. City of Kitchener
6. City of Mississauga
7. City of Nepean
8. City of Scarborough
9. City of Thunder Bay
10. City of Toronto
11. City of Windsor
12. City of York
13. Regional Municipality of Durham
14. Regional Municipality of Niagara

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\* Planning stresses plan generation and plan realization, while IA focusses on project or policy assessment in terms of minimizing negative impacts and has a series of distinct activity components such as impact identification, impact prediction, impact interpretation and communication (Lawrence, 1992: 23).

15. Regional Municipality of Ottawa-Carleton
16. Regional Municipality of Peel
17. Regional Municipality of Sudbury
18. Regional Municipality of York.

The planning departments of these municipalities did not demonstrate, in either principle or practice, the use of a formal impact assessment process in their urban planning process, viz., IA was not formally incorporated in word or deed in their Official Plans.

Of course, many of these municipalities use IA as a legislated requirement of the province's *Environmental Assessment Act*, but this use was normally undertaken and administered by the Department of Engineering or Public Works, and not by the planning department. Nevertheless, a number of planners in these cities repeatedly insisted that they were doing impact assessment. In fact, when asked about other municipalities using IA, one respondent suggested, "all of them, whether they know it or not." While it holds that all municipalities are concerned with the impacts of development, fewer than half of those studied have a formal (that is, contained in the municipality's Official Plan) and/or comprehensive impact assessment process that is integrated with existing urban planning processes.

#### 7.4.0 Possible Resistances to the Integration of Impact Assessment with Existing Urban Planning Processes

Municipal planners who indicated impact assessment was not a formal component of their planning process were asked to respond to only one more question: "If impact assessment is not used by your planning department, what do you believe are the strongest resistances to doing so?"

Among the eighteen municipalities not using an IA process, the most common arguments against the integration of IA into the urban planning process were:

1. Lack of staff time and resources required to administer a formal IA process, particularly during a period when municipal governments are aggressively engaged in cost-cutting activities, including staff reductions;
2. No legal requirement to implement an IA process in the planning process, so binding incentives to formulate a process are not there;
3. IA is not perceived as important by senior management;
4. Enormous growth pressures (prior to the recession) led to a focus on growth process and quantity, not quality, for some municipalities;
5. Insufficient growth pressure to justify complicating the development process further;
6. Belief that "excessive analysis can lead to paralysis" of the planning process;
7. Lack of generally accepted techniques to measure impacts;
8. Expertise at the municipal level is not sufficient to administer or manage a UIA process;
9. The *Planning Act* and the *Environmental Assessment Act* need to be integrated before individual municipalities can be expected to do it successfully;
10. Fear that the development approvals process is already too slow, and that an IA process would only complicate matters;
11. Impact assessment duplicates existing planning processes. It was the most common resistance mentioned. Many planners seemed to believe that impact assessment was merely piggy-backing on existing processes and made the entire development procedure overly complicated. For this reason, they maintained that integration was not a good idea.

#### 7.4.1 Municipalities in Ontario that Use a Formal Impact Assessment Process

Because of the lack of certainty as to whether all the respondents were able to differentiate between planning and impact assessment, a decision criterion based on practice was employed during the review of responses. This criterion focussed on whether there was a formal presence or demonstration of impact assessment in the Official Plan of the municipality concerned. This

means that its triggering mechanisms, the stages to the process, and its component parts are identified and described in the Official Plan. As well, the administering agencies or groups involved are also identified. For example, the process as it exists in principle in the Oakville Official Plan (1991) is presented in Appendix 5. Whether or not the process is, of course, actually applied in practice is another matter entirely.

In fact, a number of planners stated in their responses that even though they had an IA process, their city councils continued to give exemptions to most developments facing the process. Because of the city councils' discretionary power, the IA process could, in many instances, be circumvented entirely.

The following fifteen municipalities formally demonstrate impact assessment, at least in principle, in their Official Plan:

- |                       |   |
|-----------------------|---|
| 1. City of Brampton   | 9. City of St. Catharines               |
| 2. City of Etobicoke  | 10. City of Vaughn                      |
| 3. City of London     | 11. Metropolitan Mun. of Toronto        |
| 4. City of Markham    | 12. Regional Mun. of Halton             |
| 5. City of North York | 13. Regional Mun. of Haldimand-Norfolk  |
| 6. Town of Oakville   | 14. Regional Mun. of Hamilton-Wentworth |
| 7. City of Oshawa     | 15. Regional Mun. of Waterloo.          |
| 8. City of Ottawa     |   |

Of these fifteen municipalities, none exhibit what can be considered full integration of impact assessment and urban planning. Full integration of the two processes involves the integration of all of the stages of impact assessment (for example, refer to Whitney and Maclaren's IA framework presented in Chapter 3) into the planning process, the integration of disparate and often competing interests (the development community, local government and the general public) into a unified process, and the integration of government functions into a cohesive set of requirements. Conversely, a partially-integrated process is one where the IA process intersects

with the planning process at a number of discrete points, or during a planning phase.

The City of Ottawa's proposed IA process, which appears to be among the most comprehensive in the province, is a partially-integrated process. This is the case because Ottawa's process omits a needs justification stage and separates socio-economic indicators from the IA process (in initiatives involving Land Development Applications). It cannot, therefore, operate at the level of integration expressed as 'full integration' in the previous chapter. (A complete discussion of the Ottawa process is presented as a case study in the next chapter). Along with the City of Ottawa, the Metropolitan Municipality of Toronto and the City of London are other municipalities that have what may be considered a partially-integrated process.

In Metro Toronto, the existing Metropolitan Official Plan (approved in 1980) has a limited formal IA process. It only applies to development affecting major river valleys, and large or contentious development proposals. However, in the new Draft Official Plan for Metropolitan Toronto, a Metropolitan Impact Evaluation (MIE) Process is included which is intended to assess whether a development initiative meets the requirements of the proposed Official Plan. This means that proposals will be evaluated in terms of anticipated community-wide impacts on the natural, built, economic and social dimensions of the environment. Methods for reducing impacts will be necessary. If approved, the requirements and evaluation criteria to be employed would be explicitly established for the development community, the planning department, and other affected parties.

The City of London has passed and applies a process called Planning Impact Analysis or PIA. The PIA is an impact assessment methodology used to review Official Plan amendments and Zoning By-law amendment applications. Each land use chapter in the Official Plan (e.g. Residential,

Commercial) details the application of PIA. As in the Metropolitan Toronto process, evaluation criteria are provided in the London plan so that the development community and the general public know how the planning staff will assess a particular amendment.

To reiterate, the three processes in Ottawa, Metropolitan Toronto and London are considered examples of partial integration because the respective IA process is distinct from the planning process, but intersects at a number of discrete and established points in the planning process. Processes in other municipalities are also considered partially integrated, but are more accurately characterized by the *occasional* basis in which they are applied (e.g. according to certain situations or circumstances, such as when the proposed development project is of considerable magnitude, or is adjacent to an environmentally sensitive area).

#### 7.4.2 Triggering Mechanisms for the Application Of IA

Many types of municipal initiatives must be accompanied by an impact assessment specifically because of the legislated requirements of Ontario's *Environmental Assessment Act*. "Regulations to bring municipalities under the *EA Act* were approved in June 1980" and agreement was reached for exemptions to be accorded to all initiatives deemed a "minor undertaking" as well as to those having insignificant environmental impact (MOE, 1990: 45). However, for projects involving significant impacts, the *Act* necessitates either of two types of impact assessments: specific environmental assessments (EAs) or class environmental assessments.

Specific EAs are required for projects (involving such land uses as sanitary landfills) that are deemed to have considerable environmental impact under unique circumstances (MOE, 1990: 46). Conversely, class EAs are done for similar projects that are small in scale, occur frequently and have predictable and similar effects if executed under comparable circumstances

(e.g. highway widenings, sewer pipe installations). Both specific and class EAs must fulfil Section 5(3) of the Act, which details the content requirements of an environmental assessment (Curtis, 1981: 6).

Many exceptions to the Act exist. For example, municipal projects costing less than \$3.5 million are exempt from the provisions of the Act unless significant and contentious impacts are expected (Government of Ontario, 1990: 54). However, the salient point here is that public works projects involving sewage, utilities or transportation are usually within the purview of municipal departments of engineering and/or public works, not planning departments. Consequently, impact assessment functions often exist at the municipal level, but not necessarily under the aegis of the planning department, which makes them outside the scope of this thesis.

Concerning impact assessment used by municipal planning departments, fifteen of the thirty-three municipalities under study refer to impact assessment in their Official Plans. However, referring to IA in principle in an Official Plan does not necessarily mean that it is actually applied in practice. Furthermore, the application and practice of impact assessment differs widely across the province. Some of the processes, as seen in Metro Toronto or Ottawa, can involve the assessment of projects, policies and programs, whereas most processes address project assessment alone. Generally though, those municipalities using IA tend to confine its application to large-scale projects and proposals for Environmentally Sensitive Areas (ESAs)\* and hazard lands.

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\* ESAs normally include those geographic areas that provide habitat for significant species of plants and animals and/or include significant features of the natural environment such as hydrological or geological features. For example, an ESA could be a wetland area used by geese and other waterfowl, or waterfalls, woodlands, or river valleys.

Of the fifteen municipalities that mention IA in principle in their Official Plans, ten specifically use impact assessment to control development in or around ESAs. As mentioned, the other central uses for impact assessment are for investigation of the implications of large development projects, and for Official Plan amendments. Generally speaking, the following municipalities have designated environmentally sensitive areas (or something similar such as 'environmentally significant areas') and use IA to address development occurring in or adjacent to them: Etobicoke, Haldimand-Norfolk, Halton, Hamilton-Wentworth, Metro Toronto, Oakville, Oshawa, Ottawa, St. Catharines, and Waterloo.

Four of these ten municipalities use IA only for proposals affecting ESAs and for no other situation. A planner at one of the ten municipalities claims that although their ESAs are highly-valued in principle, city council in that municipality has tended to give waivers for all initiatives affecting the ESAs.

The emphasis on the biogeophysical environment in EISs done for proposals affecting ESAs also has a side effect that warrants noting. That is, the relevance and capacity for socio-economic investigation is being ignored. More specifically, a number of planners remarked that since the *Planning Act* already covers socio-economic components, there is no need for using IA to address this dimension. The result is that for the entirety of the socio-economic dimension of planning, IA is not called upon. That practice is in stark contrast to the view that the systematic investigation of socio-economic impacts is one of IA's strengths (Wolf, 1983; Rickson, Western and Burdge, 1990).

Hazard lands were also a common situation associated with impact assessment, since developing them is often dangerous or is associated with risk to human health and safety or ecosystem

stability. Hazard lands include flood plains, unstable slopes, contaminated land, hydro transmission corridors, and pits and quarries.

Other municipalities such as the City of London and the City of Vaughn use impact assessment for Official Plan and Zoning By-law amendments. Municipalities such as St. Catharines and Markham use IA to address the environmental consequences of large development proposals. In St. Catharines, any proposed retail project over 30,000 square feet requires a study that addresses the impacts of the proposal on the character and function of existing commercial functions, on road and intersection capacity in the vicinity, and on a range of other project attributes. The planning department of North York, as is done in Metro Toronto and Ottawa, uses IA to investigate policies and their potential impacts.

#### 7.4.3 The Enhancement of Urban Planning with IA

The most common enhancement of the urban planning process mentioned by respondents from municipalities in which IA was adopted was the institutionalization of environmental considerations into the planning process. Specifically, environmental objectives and concerns were being treated on par with engineering and economic considerations, if not exceeding them.

The second common enhancement of the urban planning process mentioned involves the improved ability to lessen or avoid adverse environmental impacts by changing design elements, assuming that the IA process is applied early enough in the process. The term 'proactive' in reference to planning was used on a number of occasions, referring to the capability of IA to account for perceptions of future conditions, rather than merely reacting to existing conditions. For example, a planner from Toronto responded to one question by writing that the application of IA will "make the planning process more 'proactive' than its traditional 'reactionary' and

regulatory focus."

Another advantage of impact assessment is that it often requires, at the very least, an inventory of existing environmental characteristics capable of being converted into a monitoring data base against which future conditions can be compared (Cross and Wellar, 1971; Mitchell, 1989: 200; Wellar, 1989c). A number of Ontario planners commented on the enhancement of a municipal data base achieved through the application of IA. Such a data base can be incorporated into a GIS to yield development approvals information, to facilitate the review and amendments of urban plans, and provide a baseline against which future conditions can be compared. Further, the ability to accelerate the development approvals process as a by-product of an expanded municipal data base was stressed as a rudimentary basis for adopting and applying IA.

There were, in addition, a number of other advantages identified by one or more respondents. Two of the advantages that have long been mentioned as central arguments in support of IA are summarized as follows:

- 1 ) Environmental criteria were set out ahead of time, ensuring that the public and the developers were aware of how projects would be assessed by planning staff. This created a level playing field for the relevant groups, and a framework within which to operate;
- 2 ) IA leads to better planning and therefore better decisions by addressing the complicated interaction of development scenario components.

Concerning the fifteen municipalities that use IA, it is important to stress that no negative feedback concerning the use of IA was received.

#### 7.4.4 The Possibility of a Larger Role for Impact Assessment in Urban Planning

On questions related to the extent to which impact assessment should be used, there were no

comments indicating that impact assessment should be used less. However, planners in five of those fifteen municipalities using IA indicated that "things were fine as they were," that the planning process already worked well, and that changes to the role of IA in the planning process were not required. The central argument provided for not enlarging the role for IA was that IA already duplicated existing planning functions.

Ten of the fifteen respondents using IA believed that enlarging the role of IA in municipal planning was a good idea. To justify a larger role, many of the same arguments that were used to discuss the enhancement of planning by integrating IA were presented: IA made planning proactive rather than reactive; IA could be used to address cumulative impacts; and IA will increase the environmental sensitivity of development.

Other arguments suggested for enlarging the role of IA in planning included the assertion that IA will increase public involvement, the belief that more discussion of impacts is an important end in itself, and that since the urban context is constantly evolving and changing there has to be some investigative mechanism capable of dealing with the anticipated consequences of rapid change. Further, and taking the larger role literally, it was suggested that the scale at which IA was presently being applied in one municipality was too restricted. Instead, it was envisioned that the scope of IA should become more regionally-oriented.

Overall, the respondents provided a wide range of justifications for enlarging the role of impact assessment in the municipal context. This can be interpreted as acceptance that IA is working to the satisfaction of planners. The fact that no planner suggested that the role of IA in municipal planning should be curtailed is also an indication that IA is working and working well.

#### 7.4.5 How to Make the Integration of IA into the Planning Process More Effective

Over a quarter of respondents believed that the integration of IA with the planning process was either already effective, or has been integrated without difficulty. In other words, IA is now "just part of doing business." Other respondents, however, were more pointed in their suggestions concerning how to increase the level of integration of IA into the planning process.

As noted in the previous chapter, the effectiveness of IA depends on the point or points of intersection with the planning process. To optimize effectiveness, IA must be integrated sufficiently early to ensure that (a) other alternatives can still be considered, and (b) the design of the initiative can still be changed. If not, the application of IA can be considered after-the-fact and will miss many of the advantages associated with the process.

In regard to the timing of the integration, one respondent emphasized the advantages of having all the affected parties 'put their cards on the table' early in the process. The objective is to minimize expensive changes to designs and plans later on, and especially after there has already been considerable commitment of funds, research activities, public meetings, etc. in support of a particular course of action. Similarly, reaching an early consensus concerning the most important impacts and issues associated with an initiative, as well as what the information requirements are for studying these issues, would increase the effectiveness of integration substantially.

While a number of respondents to the questionnaire expressed satisfaction with the degree of effectiveness exhibited by present conditions, some of the respondents identified other opportunities for increasing the effectiveness of integrating IA into the planning process.

Synthesis of the *Environmental Assessment Act* and the *Planning Act* was identified as one way to prevent duplication of functions. As mentioned, some aspects of the *Planning Act* (e.g. the investigation of socio-economic impacts associated with large development proposals) may be more suited for inclusion under the *Environmental Assessment Act*. The Sewell Commission is currently examining this matter.

Along legislative lines, other responses indicated a need to amend the *Planning Act* to bring it up to the current level of public consciousness. This included explicit and mandatory, as opposed to permissive, references to environmental protection, and making it a paramount *Planning Act* concern or objective. As well, it was suggested that municipalities should be empowered through legislation to be able to refuse development on the basis of inadequately considered environmental factors.

The quality of EISs created by consultants came under considerable criticism. A number of respondents suggested that consultants had to be more objective in the articulation of EISs, which refers both to more reliance on methodological inquiries rather than on personal convictions, and a reduction of bias in all aspects of the IA/planning process.

Integration could also be enhanced by staff training in the methods and techniques of IA. That is, in their replies, respondents identified the lack of staff training or familiarity with IA as a major stumbling block to the effectiveness of integration and application of the IA process. Moreover, one respondent asserted that once 'on the job,' planners by nature are wary of change and anything new. If so, then perhaps it would be beneficial for planners to receive their introduction to the application and process of IA in planning schools, departments of geography, or other sources of IA instruction before they become employed. As well, the cost of integration

was identified as a barrier. Obviously, as some respondents observed (and all other things being equal), if more funds are available, then the more integration can be achieved and the more comprehensive assessments can be conducted.

A strong policy framework was also identified as a necessary but not sufficient condition for implementation of IA. That is, planning departments, development communities, the public at large, and members of councils often have varying and conflicting agendas. The message from respondents in this regard was two-fold:

- a strong policy framework is required as a context for the findings of IA-generated research results, and;
- the research results of the IA process have to be used in a consistent manner for the integration to be effective.

However, and as one respondent observed, it may occur that either or both city council and the Ontario Municipal Board do not apply the findings of the municipal impact assessment process in a manner that lends credibility to the process, which comes back to the *caveat* noted previously: a strong policy framework is a necessary but not sufficient condition to ensure integration of IA into planning.

#### 7.4.6 Completing the EIS

Generally speaking, the designation of the individuals who were charged with carrying out the research dimension of a municipality's IA process (e.g. investigate impacts, address the significance of impacts, formulate mitigation measures) was a function of the type of initiative(s) involved. In those municipalities where IA was only applied to development proposals, and not generally across the policy or planning domains, the applicant or proponent was always listed as the party responsible for the completion of the research activity. This normally meant that the proponent hired external consultants to complete the EIS. In this

instance, the planning department acted in an administrative and guiding capacity, and supervised the application of the process.

In municipalities such as North York and Ottawa, where policies are also inputs to the IA process, some of the research activity is or will be executed in-house by planners on staff. Respondents in Oshawa and Markham also stated that there was a mixture of in-house and external researchers working on IA research. The remaining municipalities used external consultants. Three respondents indicated that the relatively recent appearance of impact assessment in the municipal planning arena explained why in-house assessments were not yet conducted in their municipalities.

#### 7.4.7 Involvement of the Public in Existing Urban Impact Assessment Processes

Five of the respondents stated that the public was not mandated (in their Official Plan) for involvement in their municipality's impact assessment process. More specifically, no public notification of an impending environmental assessment is provided as a matter of course by these municipalities. In other words, the entire process is internal and at the sole discretion of the municipal governments. By way of illustration, in the Regional Municipality of Waterloo, members of the public are not specifically notified. However, upon learning of topics or matters of interest, members of the public can participate in the Ecological and Environmental Advisory Committee's (EEAC) meetings. In another municipality, the resulting EIS was made available to the public only if specifically requested.

Mechanisms for accommodating public participation in the IA process existed in the other ten municipalities. These mechanisms included the following: public notices of development

proposals; public meetings; public information workshops and fora; open houses; local media coverage; and public hearings. Despite this range of mechanisms for informing and involving the public, none of the respondents (except Ottawa) provided substantive accounts of how public input was aggressively sought out and used in the IA process, although Metro Toronto indicated that public participation provisions were likely to become more widespread in the future.

In regard to informing the public about IA activities or allowing the public to inform itself, impact statements themselves were generally made public. However, sometimes the EIS documentation was only available for perusal at public meetings. Occasionally, as in North York, EISs were not created for public consumption, although the conclusions were presented at public meetings. It appears fair to suggest that, overall, opportunities for seeking out or allowing for informed public participation in IA have not been seized.

#### 7.4.8 The Use of Geographic Information Systems (GIS) in Urban Impact Assessment

Of the fifteen municipalities using impact assessment, twelve have or are in the process of developing a geographical information system or GIS. However, of the twelve, five are still at the data input stage (more a geographic data system (GDS) than GIS), which means that only about half of those municipalities with an IA presence also have a GIS capability to support IA. Those municipalities without GIS indicated that their municipality was thinking about getting a system, although none of the details (e.g. choice of software or hardware, available funds, data requirements, connection to existing systems) had been addressed.

In terms of their technical abilities, available GIS software packages in use have rudimentary capabilities for executing IA techniques. For example, the software used by the Regional

Municipality of Ottawa-Carleton is capable of doing overlays that can indicate areas of least environmental sensitivity to particular types of development, or can indicate the dispersion of different impacts from a particular initiative. However, while the software has this capability, Ottawa-Carleton is not exploring this application at the moment. Software packages mentioned include: Geovision, Intergraph, GeoRef and Terrasoft. The Intergraph System can be used for three dimensional modelling for visual impact assessment (which is suitable when there is concern for architectural continuity), shadow studies (e.g. how a new building will block the sun exposure of adjacent sites) and other details concerning the facade of a proposed physical structure.

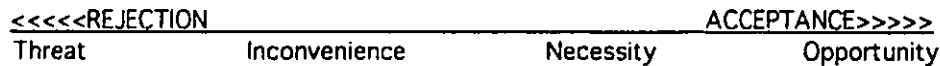
#### 7.5 Commentary on the Research Results

Of the thirty-three municipalities involved in the empirical component of the thesis, fifteen had an impact assessment process mentioned in principle in their Official Plan. Among those fifteen municipalities in Ontario using IA, there is a wide range of IA processes and applications in place and/or pending. As discussed, the reception given to the implementation of IA was generally positive and, when negative, it was passively rather than vigorously negative. Further, there was a mixed response concerning the possible enlargement of the role of IA in municipal planning in that there were arguments on both sides.

While the focus here is not on the whys of adoption/rejection, it is a matter that is considered later in regard to GIS, and emerges as a thematic concern when considering the evolving relationship between IA and planning. That is, the response to an innovative idea (IA) by professionals (planners) can run the gamut from finding it threatening (because of a lack of familiarity or the perceived difficulty associated with the idea) to realizing the excellent opportunity that the idea presents for meeting the demands of working in increasingly complex

situations (Figure 7.0 below).

Figure 7.0 Response To An Innovative Idea.  
(Source: Lang, 1977: 59).



To gain acceptance in the academic arena, an idea must have intellectual appeal, which is tied to its logical or scientific persuasiveness. To gain acceptance in the workplace, however, the innovative idea must contribute to the efficiency and effectiveness of how the problems addressed in the work environment are investigated and solved. Respondents from eleven of the fifteen municipalities using IA listed ways in which IA served to enhance the planning process, which is taken to indicate that IA was well into the adoption/acceptance phase in a number of Ontario municipalities.

A further general finding is that most of the respondents appeared to realize the opportunity presented by impact assessment; namely, that a new way of organizing and implementing the investigation of environmental problems could be very successful when 'backed up' by legislation. For example, if 200 acres of agricultural land in the urban fringe was bought by a developer for the purpose of creating a subdivision, an Official Plan amendment would (likely) be required to give a suitable zoning to the property. The various implications of this sort of initiative (viz., impacts on the ability of the infrastructure to handle more intensive land use, on the ability of neighbouring communities to acclimatize to an influx of new residents, on the

carrying capacity of significant natural resources such as wildlife habitat, or on the diminishing reserve of viable agricultural land) can be explored, and a rational, evaluable decision can be reached as to whether the Official Plan amendment is appropriate.

The results indicate that IA is deemed particularly useful and acceptable for large development projects since its strength as a synthesizing research instrument can be optimized. In particular, many environmental components affected by a substantial development project can be investigated and integrated into one cohesive EIS. However, concerning the more specific application of impact assessment to ESAs, there appeared to be a tendency in some quarters to still restrict 'environment' to mean the biogeophysical milieu (at the expense of the socio-economic dimension). Using IA in this narrow manner short-circuits many of the established advantages of the process. Moreover, to further elaborate the concern about such narrowness,

'jobs vs. the environment' has become a recurrent dilemma...social impact assessment has been seen as a procedure to ensure the accordance of equal significance, in project and program appraisal, to nonenvironmental (and possibly less directly quantifiable) but politically important factors (Cope and Hills, 1988: 177).

The larger message about IA and the environment in which IA occurs may therefore be expressed as follows: socio-economic factors are intrinsically tied to biogeophysical capacities and vice-versa, and separating the two dimensions of reality is antithetical to the present understanding of the meaning of 'environment' (see Chapter 3). Again, while in general that view prevails, there are some situations where the narrow view exists and the full potential of IA is not realized.

Another reason why the advantages and capabilities of IA are not being optimized in the province is that to date only a few municipalities (North York, Metro Toronto and Ottawa) apply IA to 'policies.' As Wellar (1982) emphasized more than a decade ago, and Wood (1992: 3) recently

wrote, "the concept of extending EIA from projects to 'higher order' actions [policies] has begun to gain wide acceptance throughout the world." In brief, IA applied to policy in advance of plan or program initiatives provides better conditions and terms of reference for investigations of temporally or spatially cumulative impacts. Moreover, with an emphasis on policy variables, an explicit IA-policy connection can be the basis upon which to ensure that alternative approaches are considered in the planning and design stages (Wellar, 1987; Smith and Wellar, 1992). Consequently, regional municipalities in particular could benefit from the integration of IA with the planning process at the higher order policy stage.

Another important finding of the research is that five of the fifteen municipalities using IA did not have a formal public participation stage. Since full integration of public participation into planning is one of the essential characteristics and a central normative advantage of IA, this appears to be serious cause for concern. That is, for reasons which reflect good planning in principle and practice, and by order of the *Planning Act*, the public is recognized as a relevant group on matters involving any development activity that results in a planning action.

Concerns raised by community activists in Ottawa about the unfair financial burden that involvement in planning imposes on ordinary citizens (Wellar, 1988b; Wellar, 1989b) were forerunners to the Sewell Commission's recommendations on intervenor funding. If the rationale for respecting public participation, in practice as well as principle, needs further support or encouragement, it may be instructive to recall that the second of thirteen ethical principles promulgated by the American Planning Association is "support citizen participation in planning" (Lucy, 1988: 149).

In terms of purpose and means, then, IA is an effective and appropriate way to encourage and

accommodate public input into planning. Support was presented for formal mechanisms to facilitate public participation in the impact assessment process, including legislation that requires IA as part of planning, and public participation as part of both IA and planning.

The timing of public participation within the IA process is, of course, a vitally important consideration. On the one hand, current practices indicate that the usual place for public participation is 'at the eleventh hour' or after-the-fact, in both the planning and IA processes. The argument for this kind of staging is that once an IA statement exists, the document can serve to focus public concerns and enable a comprehensive examination of the impacts that may occur. Supposedly, if public participation is initiated too early in the process, then opinions and sentiments will be based upon "partial knowledge, prejudice and misconceptions" (Clark *et al*, 1980: 156).

Conversely, an argument can also be made for initiating public participation early in the planning and IA processes. In particular, by virtue of them being involved from the outset, concerns of ordinary citizens are incorporated into the design phase of plans, policies and programs. By corollary, if implemented early, the public participation stage should expedite the formal authorization and completion of the initiative since concerns will have been dealt with early in the process. As well, input from the public early in the process may identify problem areas that may have gone unnoticed by the experts and consultants.

Concerning GIS, the difference between a longstanding appreciation for using GIS in planning, and the limited progress of Ontario municipalities in actually having a GIS in place to support planning or IA is notable. And, it is an important topic that not only warrants investigation in its own right, but is well beyond the purview of this study. However, there are several remarks

that are pertinent here because there appear to be some significant parallels between IA in planning and GIS in planning.

To remain within the study terms of reference, the comments are limited to reasons that might affect the adoption of GIS for planning purposes in general, and for IA activities in particular.

First, there is the matter of dealing with technical difficulties which has existed in the electronic information systems field since its inception some 30-35 years ago. Those difficulties are compounded in situations involving IA with onerous data requirements and complex data handling operations (Wellar and Harris, 1992).

Second, and as established by Arbeit (1992), planners have been singularly slow to make use of GIS in planning in general and much less in IA which can involve a relatively higher usage of quantification procedures. Third, and for reasons involving a number of institutional and organizational factors, the pay-offs from GIS in governments have not kept pace with technological progress (Wellar, 1993a; Wellar, 1993b). As Wellar found, the yields from GIS in general have been, to date, less than expected. It is not surprising, therefore, that GIS has yet to make a significant contribution in the politically sensitive world of IA where institutional and organizational issues and concerns are often dominant.

The potential technological contribution of GIS to impact assessment is substantial. Software packages are available for two- or three-dimensional analysis, synthesis, modelling, and visualization tasks; and, they can support many different kinds of descriptive, explanative and predictive studies in support of IA. However, in part for the reasons given above, as well as financial constraints, the use of GIS in impact assessment in Ontario municipalities is not yet widespread. Dueker and Delacy (1990: 490) suggest that the high overall expense of

maintaining an updated data base for GIS and the difficulty of co-ordinating data sharing among organizations has contributed to the slow advance of GIS into planning circles.

These conclusions are immediately amenable to interpretation within the context of the Sewell Commission, formally known as the Commission On Planning and Development Reform In Ontario. In their Draft Report, the Commission (1992: 1) states that they were:

given a broad mandate to recommend changes both to the *Planning Act* and to related policy that would restore integrity to the planning process, would make that process more timely and efficient, and would focus more closely on protecting the natural environment.

Despite wording that alludes to "protecting the natural environment," the Commission (1992: 12; 57) explicitly refers to the 'environment' in terms of both its socio-economic and biogeophysical dimensions. The Commission (1992: 6) suggests that "the principles of environmental planning should be built into the *Planning Act*, and a class assessment procedure should be included in the *Act* for some municipal infrastructure." Within this context, impact assessment could be advantageously applied.

Concerning the formulation of municipal plans, the Commission (1992: 12; 57) offers a standardized planning process that incorporates many of the characteristics of impact assessment. However, the thrust of impact assessment, the minimization of the negative impacts associated with human initiatives, is not rendered explicitly. In *The Purposes Of Planning* chapter of the Draft Report, the protection of the 'environment' is stressed, rather than the minimization of negative impacts *vis-à-vis* municipal initiatives. Furthermore, it is suggested that "smaller projects would not be subjected to this kind of review," meaning impact assessment would not be mandatory (Commission, 1992: 64). This statement also reveals that the Commission's recommendations will not account for cumulative impacts, thereby

overlooking one of the strongest capabilities of impact assessment.

Overall, the Sewell Commission appears to recognize the utility of impact assessment, and attempts to provide a planning context where impact assessment can be more highly integrated with planning at some later date. However, the exact manner and overall seriousness in which the Commission will undertake this task remains to be seen in the Commission's Final Report, expected in mid-1993.

## 7.6 Summary

Responses to the questionnaire were received from the entire survey population of thirty-three municipalities. Eighteen of the municipal planning departments in the survey did not have a formal impact assessment in place; fifteen did. Ten of the fifteen planning departments that have implemented IA use it to control development applications and activities in or around environmentally sensitive areas, and IA is also 'activated' for matters involving hazard lands and Official Plan amendments. Further, the planning departments of North York, Metro Toronto and Ottawa use IA to investigate policies and their potential impacts. Overall, there is little evidence that IA is uniformly or stringently applied in the province's larger municipalities.

Research revealed that two cities, Oakville and Ottawa, have relatively detailed impact assessment processes in their Official Plans. However, the processes are considerably different. The Oakville process is small-scale, and applies mainly to development proposals adjacent to ESAs or involving contentious issues. To date, the process has been rarely applied in the format expressed in the Oakville Official Plan. Conversely, Ottawa's process will be applicable to private and public initiatives equally, and will embrace policies, plans and programs as well as projects. In the preceding general context of a province-wide survey, the UIA processes in the

two cities are not directly comparable. However, a more in-depth examination and critique of the two processes in the next chapter provides some valuable 'lessons learned' for other municipalities seeking to implement or enlarge IA principles and processes in the planning function.

## Chapter 8

### Case Studies of Urban Impact Assessment as Applied in Oakville and Ottawa

Two Ontario municipalities which manifest both similar and different aspects of the relationship between urban impact assessment and urban planning are discussed in this chapter. The case studies are a means to present a more in-depth discussion of key constants and changes in the impact assessment/planning relationship over time. It is emphasized, however, that the case studies are illustrative rather than representative of the IA-planning situation in the surveyed municipalities. Moreover, they are presented at the level of indicative as opposed to comparative research. In this search for 'lessons learned' from these two very different instances of UIA, the general attributes of both municipalities and the two processes are illustrated, followed in each instance by a critical examination of their respective UIA experiences to date.

#### 8.0 General Introduction to Oakville and Ottawa

Oakville and Ottawa are two of the cities in Ontario that have integrated impact assessment into the urban planning process. The two integrations were instituted at different times, but for the same reasons: to account for environmental considerations in urban planning, and to minimize the adverse consequences of urban development. This investigation of instances of IA/urban planning seeks to elicit 'lessons learned' that may have applicability elsewhere.

Since both municipalities are economic successes with respect to growth and unemployment rates being experienced elsewhere in the province, they can reasonably expect to continue to face considerable development and re-development pressures over time. For this reason, their respective experiences with IA provides insight into the development-IA relationship. As well, the two municipalities represent the earliest (Oakville) and the most recent (Ottawa) instances of integration of IA into municipal planning in the province. Despite some broad similarities, the actual degree of integration of impact assessment and urban planning is substantially different in Oakville and Ottawa. Table 8.0 on the next two pages summarizes some of the basic attributes of the IA processes in the two municipalities.

Table 8.0 Summary of IA Processes in Oakville and Ottawa  
(Source: Town of Oakville, 1991; City of Ottawa, 1992a).

OAKVILLE

OTTAWA

Name of the Process

Environmental Impact Assessment

Municipal Environmental Evaluation Process (MEEP)

Date of Inclusion of Process in the Official Plan

First appeared in the Region of Halton's "Guidelines For Environmental Impact Assessment" in 1980. This was integrated with the Oakville Official Plan on December 21, 1984.

First appeared in Ottawa's February 1991 Official Plan. Adopted by Council on March 3, 1993.

Municipal Department Administering the Process

Department of Planning and Development

Environmental Management Branch of the Department of Engineering and Public Works

Spatial Boundaries Pertinent to the Application of the Process

Oakville's EIA process applies only to those areas of Oakville designated as Environmental Protection Areas, and wherever 'major' developments occur within the town.

MEEP applies to the entire geographical area within the City of Ottawa

Triggering Mechanism(s)

Any development proposed for an Environmental Protection Area, and any 'major' change in land use or land supply.

Initiatives involving the Greenway System, contaminated sites, pits/quarries, unstable slopes, areas of natural and scientific interest, waste management facilities and snow disposal sites; all SCHEDULE C and any initiative with substantial works.

How the 'Environment' is Defined within the Process

Constrained to the biogeophysical elements of the natural environment.

Encompassing definition that includes the biogeophysical, socio-economic and lifestyle dimensions of the environment.

Type of Initiatives Normally Facing the Process

The types of proposals permitted in Environmental Protection Areas include the following: conservation, forestry, wildlife management, public open space, agriculture, public works, and private open space (1991: 73). Policies and programs are not subject to the process.

Any projects, policies, programs and other initiatives involving impacts on the local biogeophysical and socio-economic environments.

Table 8.0...cont'd

Table 8.0 (Cont'd)

**Level of Discretionary Control Evident by the Administering Department**

"In all cases where an E.I.A. Report is required, it will be at the discretion of the Town to require a full E.I.A." (Official Plan, 1991: 73).

The use of an Automatic Inclusion List that identifies the types of initiatives requiring application of MEEP appears to be a mechanism that may be universally applied. Therefore, discretionary behaviour by City Council can be minimized.

**Relationship of the IA Process to the Planning Process**

The E.I.A. process intersects the planning process at a number of discrete points, viz., the Department of Planning and Development reviews the draft impact statement, circulates it to the other appropriate departments and agencies (e.g. Halton Region Conservation Authority, Halton Region), and then requests the appropriate mitigation methods. The final impact statement is then reviewed by the Planning Committee.

MEEP can be regarded as 'piggy-backing' on the development control process already used by the city's planning department. Overall, it is more integrated than in Oakville. It intersects with the planning at a number of points.

**Use of In-house or External Consultants for Completion of the Impact Statements**

Done in-house, and by external consultants, depending on the circumstances.

Municipal departments are responsible for their own initiatives. Developers will use the services of consultants.

**Public Participation**

Public participation is not a formal component of the process. That is, it is not enshrined in the Official Plan.

Public participation is a formal and crucial component of the Official Plan. That is, it is enshrined in the Official Plan.

**Relationship to GIS and other Software**

While Computer Assisted Design (CAD) is used by the Department of Planning and Development, it is not a formal component of the city's E.I.A. process.

While still in the planning stages, the City of Ottawa is considering the use of Geovision software (the GIS package used by the Regional Municipality of Ottawa-Carleton's Planning Department).

## 8.1 Introduction to Oakville

Oakville is located in the so-called 'Golden Horseshoe' of Ontario. It lies on the shores of Lake Ontario between the cities of Burlington to the west and Mississauga to the east (Figure 8.0). Oakville ranks among the top three municipalities in Canada in terms of highest average household incomes (P5, 1992: 2). Since 1978, Oakville's population has almost doubled (P5, 1992: 6). Growth is expected to continue because of the proximity of Oakville to Toronto, which is Canada's largest metropolitan area.

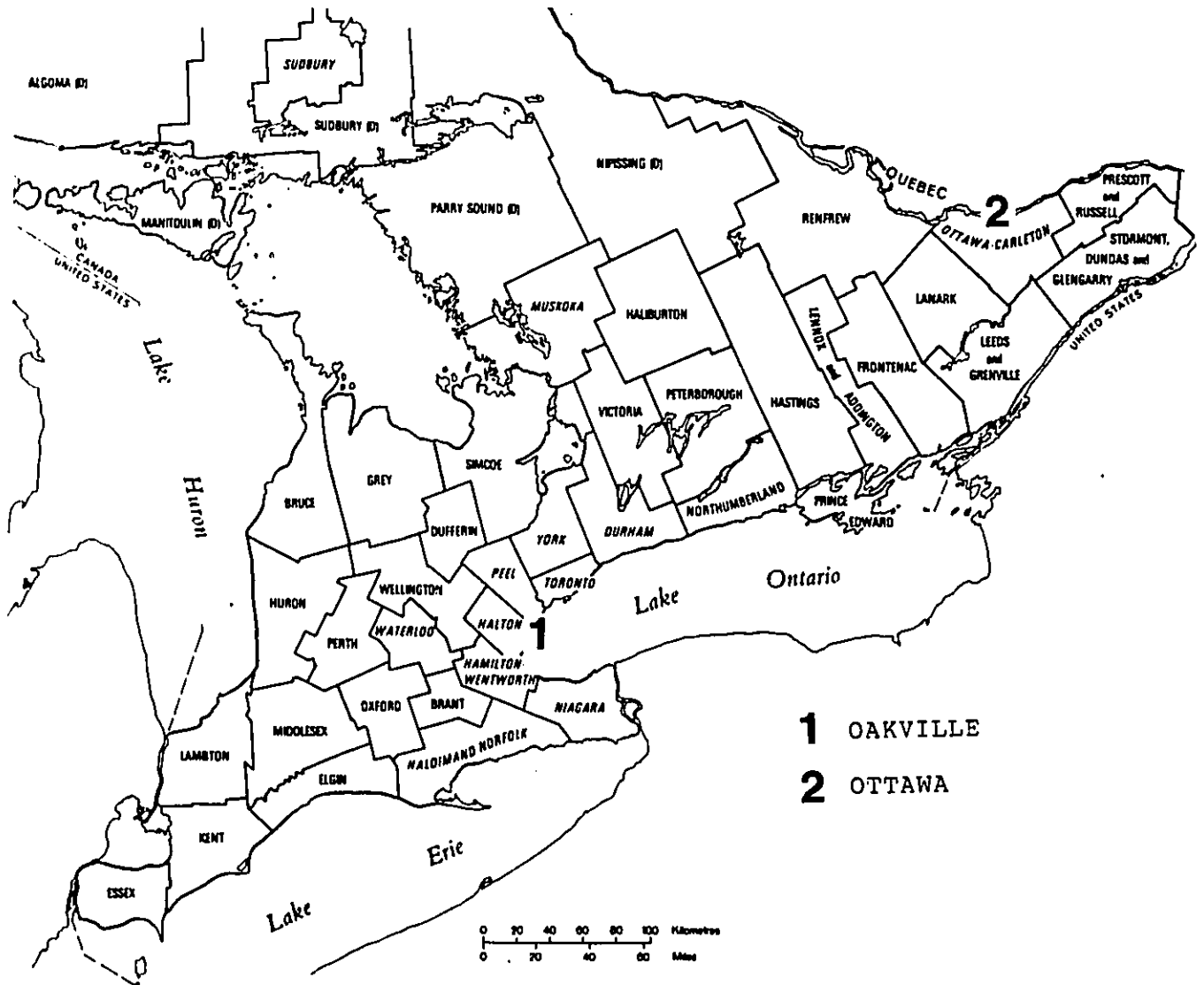
### 8.1.0 A Brief History of Oakville

The area now comprising Oakville was originally inhabited by the Mississauga Indians, a tribe of Ojibwa origin that lived in semi-permanent villages, cultivated corn, and supported themselves by hunting and fishing (McKeon and McKeon, 1986: 11). In 1827, a United Empire Loyalist from Nova Scotia named William Chisholm purchased 960 acres of land at the mouth of Sixteen Mile Creek, now at the centre of Old Oakville. Chisholm's initial intent was to create a harbour for the schooners that he owned. However, the town's commercial growth ultimately came from the industry that was based on the white oak timber logged upstream (Town of Oakville, 1991). Harbours were eventually created at Sixteen Mile Creek and at Twelve Mile Creek (six kilometres to the west).

By the 1830s, there were five sawmills along Sixteen Mile Creek. As the large timber disappeared, second-growth timber began taking its place in sawmill activity (McKeon and McKeon, 1986: 36). The trade in oak timber gave Oakville its name. From 1832 to the 1860s, Oakville was a successful commercial port, where shipbuilding and the transport of grain, potash and timber were the main commercial activities. By 1857, Oakville had a population of 2,000 (McKeon and McKeon, 1986: 39).

Figure 8.0

The Locations of Oakville and Ottawa.  
(Source: University of Western Ontario, 1980).



The fruit industry developed during the last quarter of the 19th century, and companion businesses such as basket-making arose. Other manufacturing enterprises also started appearing, including factories for aluminum pots and pans, rubber tires, and vinyl sheeting. Oakville survived the Great Depression better than many Canadian cities. Growth during and following World War II was stimulated by the construction of a four-lane highway (in 1939) known as the Queen Elizabeth Way (the QEW) that connects Hamilton to Toronto (McKeon and McKeon, 1986).

In 1951, the Ford Motor Company moved into the Oakville labour market and changed the town substantially with its presence, and by attracting many complementary businesses. The first car came off the assembly line in 1953 (McKeon and McKeon, 1986: 103). Since then, the industrial base has diversified considerably. In 1992, the eight largest employers in Oakville were: Ford; Sheridan College; the Regional Municipality of Halton; Oakville Trafalgar Memorial Hospital; the Town of Oakville; Menasco Aerospace Ltd.; GE Canada; and the Hudson's Bay Company (P5, 1992: 3).

#### 8.1.1 Spatial Attributes and Population of Oakville

The Town of Oakville is approximately 14 kilometres in width, 11 kilometres in depth, and 14,165 hectares in area (Town of Oakville, 1991: iii). The 1991 population of the Regional Municipality of Halton, which includes the towns of Halton Hills, Milton, Oakville and the City of Burlington, is 313,136 (Statistics Canada, 1992a: 9), which represents a 15.4% growth rate over 1986. The population of the Town of Oakville grew from 87,107 in 1986 to 114,670 in 1991 (Statistics Canada, 1992a: 65), representing a growth rate of 31.6% (one of the highest in the province). On the matter of designation, and despite having a population over 100,000, the Oakville Council has chosen to continue calling Oakville a 'town,' rather than a city.

The current development climate in Oakville is best expressed in the town's own words: "OPEN FOR BUSINESS" (P5, 1992: 3). The population growth rates for both the town and Halton Region are high by provincial standards, which suggests that upon recovery from the current recession development pressure will continue. Indeed, strong growth pressure is predicted for the entire Greater Toronto Area (GTA) and the expectation is that Halton Region and Oakville in particular will continue to capture an increasing share of the GTA growth due to its strategic location, strong transportation links, low land costs relative to other areas, and a comprehensive array of environmental and recreational amenities (IBI Group, 1988).

### 8.1.2 The Government Actors in Oakville

#### 8.1.2.0 The Regional Municipality of Halton

The Town of Oakville is situated within the Regional Municipality of Halton, which was created by the *Regional Municipality of Halton Act*. Every local official plan and every by-law passed under Section 35 of the *Planning Act* that affects the municipalities in the Halton Region must be in conformity with the Regional Plan (Town of Oakville, 1991: iii). The Regional Plan for the Halton Planning Area was adopted by Regional Council in 1978 under By-law 69-78 and was approved by the Minister of Housing in 1980 (Regional Municipality of Halton, 1991: EN-1).

Like other regional municipalities in the province of Ontario, the Region's use of impact assessment is determined and guided, in a general sense, by the province's *Environmental Assessment Act*. Under the policies of the Regional Plan, impact assessment is situation specific and operates within guidelines developed by Regional staff, the Ecological and Environmental Advisory Committee and the appropriate provincial agencies (Regional Municipality of Halton, 1991: V-4). An Environmental Assessment Board is established for reviewing EISs to ensure that the provisions of the provincial *EA Act* are met.

#### 8.1.2.1 The Town of Oakville and its Official Plan

The Oakville Official Plan was adopted by the Town of Oakville on July 5, 1983, by By-Law 1983-114, and was approved by the Minister of Municipal Affairs and Housing on December 21, 1984. A consolidated version of the Official Plan dated October 1, 1991, is the latest version of the Official Plan available to the public and to others (Town of Oakville, 1991: Foreword).

#### 8.1.3 The Environmental Impact Assessment Process in Oakville

In 1976, the Town of Oakville prepared an environmental plan "to enable the municipality to pursue the practice of environmental management and develop a capability for environmental problem-solving" (Armour and Walker, 1977: 36). The intent of this environmental plan was to integrate environmental impact assessment with the existing urban planning process. The two central purposes of this environmental plan were to:

1. Incorporate environmental considerations into the planning and decision-making process;
2. Promote an approach to planning that was more amenable to the inclusion of environmental concerns (Armour and Walker, 1977: 36).

Originally, the environmental plan was to be made operational by:

- (a) Developing an environmental data base and inventory through which land capability could be analyzed;
- (b) Developing an environmental review process that would integrate EIA into the town's planning, decision-making and corporate management processes, and;
- (c) Formulating innovative policies for energy, vegetation, wildlife, stormwater management, growth, density, and environmentally sensitive areas (Armour and Walker, 1977: 36).

In terms of implementation, difficulties were encountered in each of the three dimensions.

First, according to an environmental planner working for the Town of Oakville, the data base never fully materialized in the manner originally intended. That failing is perhaps associated with the fact that, unlike many other Ontario cities, a GIS is neither used nor planned for the

city. As a result, there are severe limits to the ways and extent that either staff or the public can use whatever environmental data may have already been collected. Moreover, in terms of having access to literature on what to do and how to do it with respect to analyzing land capability, a site visit revealed that the library of Oakville's Planning Department was almost entirely bereft of information on impact assessment methodology in general, and cases of impact assessment in particular. Anyone interested in studying land capability and the consequences of land use decisions and activities is obliged to look elsewhere.

Second, while a formal EIA process is a part of the Oakville Official Plan (Appendix 5), discretionary application of the process is permitted, thereby reducing the universality of its application. As succinctly stated by one planner, EIA is "applied to development applications when it is considered necessary." This means that the vagaries of politics can interfere with the operation of what should otherwise be a formal process of applying agreed-upon principles, procedures and facts. The opportunity for political expediency or interference notwithstanding, however, the record is that impact assessment has been applied to major development applications involving significant changes in land use and land supply, as well as for proposals affecting environmentally sensitive areas.

Third, innovative policy guidelines such as impact assessment have been proposed and integrated into Oakville's Official Plan. However, and despite its relatively long fifteen-year record of involvement in IA, and numerous documented advances in the field, the Town of Oakville has not capitalized on known, higher-order IA advantages that can be realized:

- ensuring that IA process conclusions are funnelled directly to the decision makers;
- protection from the vagaries of politics;
- applying IA to urban policies and urban programs as well as to projects.

One planner suggested that a higher-level government must change the legislation controlling the imposition of IA before the practices of the municipality change. It is, as another planner stated, "a question of necessities and incentives." In light of its inconsistent application, environmental impact assessment in Oakville has far more 'bark than bite.' A general conclusion to be drawn is that the early promise of a strong impact assessment/planning relationship in Oakville has not been matched by performance.

## 8.2 Introduction To Ottawa

Canada's capital, Ottawa, is located in eastern Ontario and is approximately 80 kilometres (50 miles) north of the Canada-United States border (Figure 8.0). According to Gritziotis (1990a: 18), "Ottawa is entering the 21st century as one of Canada's faster growing urban centres," an observation based on Ottawa's ranking as the top economic performer among Canadian cities for the past five years. Over the long term, the city has maintained a strong economic base, due primarily to the presence of the federal government as Ottawa's largest employer. Government workers comprise over 35% of Ottawa's direct employment (BMC, 1978; FRG, 1990; Gritziotis, 1990b: 38; Wellar, 1990e). The other two dominant employment sectors are tourism and high technology, both of which benefit from the federal government's presence (FRG, 1990; Wellar, 1990e).

### 8.2.0 A Brief History of Ottawa

The area surrounding Ottawa was originally inhabited by the Algonquin. Victoria Island, situated to the immediate west of Parliament Hill and in the middle of the Ottawa River, was a sacred site to the Algonquin and other Native Canadians because of its proximity to the convergence of a number of rivers (the Ottawa, the Rideau and the Gatineau). This convergence made Victoria and the surrounding islands ideal locations as places to meet and conduct trade.

Councils were held on the islands and tribute was paid to the Manitou that dwelt in the mists of Chaudière Falls (so-named because of a translation of the original Algonquin word 'Asticou,' which means 'kettle') to ensure safety and prosperous hunting (Davies, 1932: 15). The Ottawa River itself is named after a fur-trading tribe known as the Outaouais that used canoes to travel it. Later, English-speaking explorers mispronounced the French 'Outaouais' and "the river became known by its mispronounced name, Ottawa" (Corkum, 1975: 7).

In June of 1613, Champlain reached the falls of the Rideau River, so-named by later explorers because they resembled a 'graceful drapery' and 'rideau' is French for 'curtain' (Corkum, 1975: 3). An American named Philemon Wright was the first settler to move into the area in 1800 (NCC, 1981: 23). The present city of Hull, where Wright homesteaded, became a prosperous community. Ottawa, on the other side of the river, did not receive much attention until Colonel John By, an engineer, was sent by the British government in 1826 to supervise the construction of a canal linking the area to Lake Ontario at Kingston. Kingston's Fort Henry was of considerable military importance, and the British feared that the Americans to the south would capture it to put a stranglehold on the St. Lawrence River (NCC, 1981: 4). In 1832, the canal was completed, and the workers who built it provided the city with much of its population during that time. By 1855, the population of Ottawa was 8,000 (Corkum, 1975: 38).

Smaller cities such as Bern, Washington, Bonn and Canberra have been chosen as federal capitals as a compromise between rival large cities or conflicting regional interests (Gottman, 1990: 76). On similar grounds, Ottawa was chosen as the capital of the United Province Of Canada on January 1st, 1858, by Queen Victoria, as a compromise between Montréal and Toronto (Corkum, 1975: 45). Years later, Ottawa is noted as being described as "a sub-arctic lumber village converted by royal mandate into a political cockpit" (Linder and Porter, 1992).

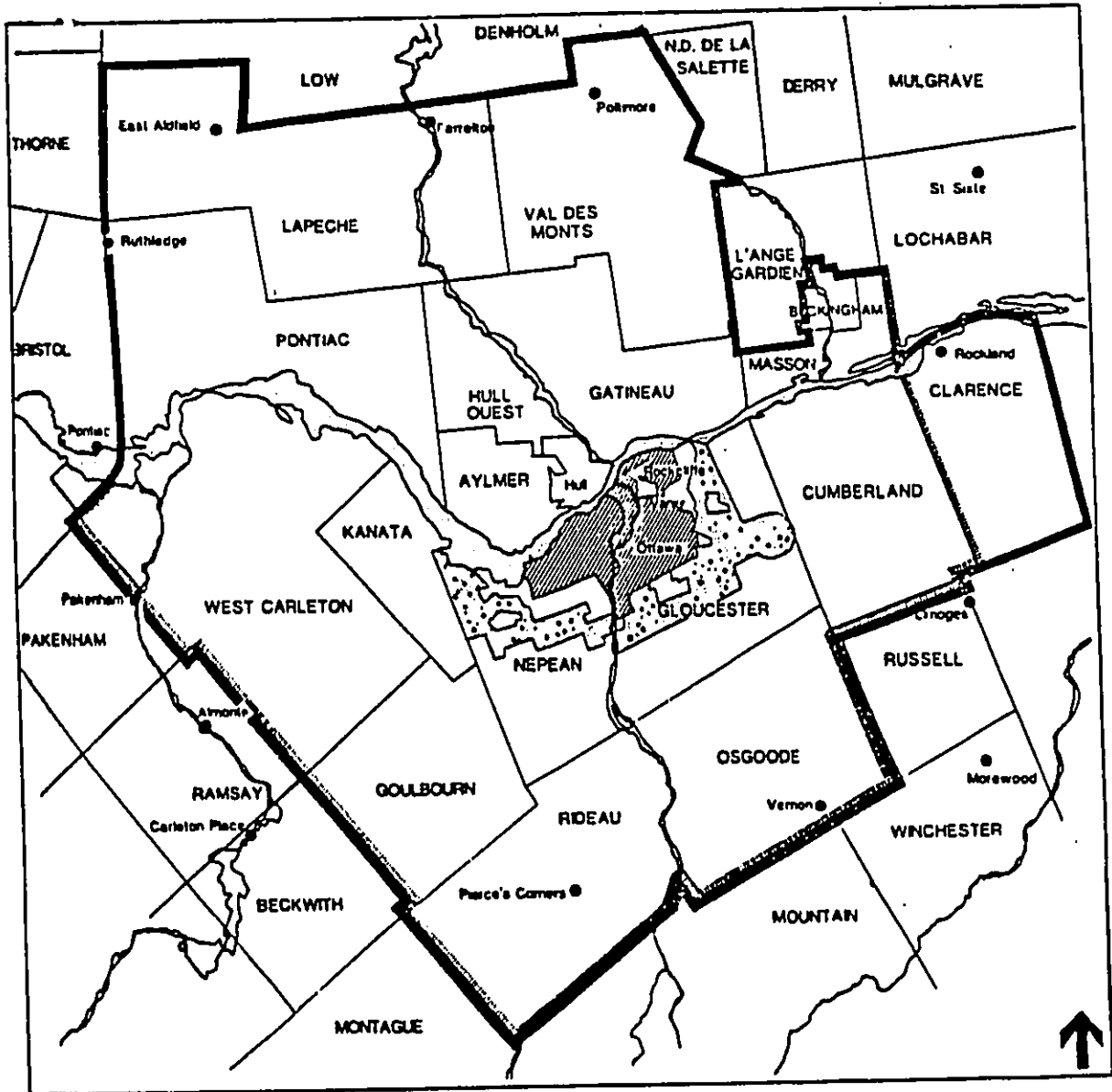
### 8.2.1 Spatial Attributes and Population of the National Capital Region






In terms of population, the Census Metropolitan Area (CMA) of Ottawa-Hull is the fourth largest in Canada. In 1991, the population of the CMA was 920,857 (Statistics Canada, 1992b: 20). The CMA is roughly the same area as the National Capital Region (which is 4,662 square kilometres in size). The spatial configurations of the CMA and the Regional Municipality of Ottawa-Carleton are represented in Figure 8.1.

In 1991, the population of the Regional Municipality of Ottawa-Carleton was 678,147, which represents a five-year growth rate of 11.8% since 1986 (Statistics Canada, 1992a: 71). The population of the City of Ottawa grew 4.4% since 1986 to 313,987 in 1991 (Statistics Canada, 1992a: 71). In metropolitan Ottawa's suburban areas (Kanata, Gloucester and Nepean), population growth is expected to continue during the 1990s (Gritziotis, 1990a: 20). For Ottawa itself, it is projected that the residential population will likely remain relatively stable between 295,000 and 315,000 throughout the 1990s, although employment may increase dramatically downtown (City of Ottawa, 1988a: 9). As well, the population growth rate of metropolitan Ottawa is the highest when compared with that of other urban centres in eastern North America like Toronto, Montréal, Boston, New York City and Philadelphia (Gritziotis, 1990b: 12). Further, the average compound growth rate in employment for Ottawa-Hull is also the highest among these same urban centres (Gritziotis, 1990b: 37).

In addition to potential population and employment growth pressures across the city and region, the development situation in downtown Ottawa is also influenced by a number of other factors. One factor is of particular significance. That is, to ensure the predominance of the Peace Tower on Parliament Hill, there is a cap on the height of development permitted in the downtown core. This downtown core area (Figure 8.2) is delimited by Parliament Hill to the north, to

Figure 8.1 The Boundaries Of the Ottawa-Hull Census Metropolitan Region.  
 (Source: City of Ottawa, 1988a: 2).



LEGEND	
	Ottawa-Hull Census Metropolitan Area
	City of Ottawa
	Greenbelt
	Regional Municipality of Ottawa-Carleton
	Municipalities



Gloucester Street seven blocks to the south, and the ten block stretch from Bay Street in the west to King Edward Avenue in the east. In order for this core area to remain the hub of the region's economy, some planners and developers have argued that the central core area will require expansion to prevent companies and developers from relocating to the suburbs, that is, Nepean, Gloucester, Kanata, and other communities outside Ottawa (Yan, 1991: 14).

### 8.2.2 The Government Actors In Ottawa

The City of Ottawa is unlike the Town of Oakville and other Ontario municipalities in terms of its political situation, and hence in terms of its IA context. The difference is due to the extra layer of a substantial government presence in land use activities, namely, the National Capital Commission (NCC).

The federal government imposes federal regulations through both the NCC and other departments (Public Works, Transport Canada, the Museums Board, etc.) that have a mandated interest in land in the National Capital Region (NCR). Urban planning on the Ontario side of the NCR is a municipal jurisdiction, however, and as such falls under the aegis of the province's *Planning Act*. The City of Ottawa's power to control land use through the Official Plan is delegated from this Act. Regional concerns are administered by the Regional Municipality of Ottawa-Carleton, which is also empowered to affect land use designation activities through the *Planning Act*.

#### 8.2.2.0 The National Capital Commission (The NCC)

The National Capital Commission is a Crown Agency that was created in 1958 by the *National Capital Act*, and has a specific mandate:

to prepare plans for and assist in the development, conservation and improvement of the National Capital Region in order that the nature and character of the seat of the Government of Canada may be in accordance with its national significance (NCC, n.d.).

The Commission may, for the purpose of this Act: acquire property, construct and maintain parks, parkways, bridges and other structures; maintain and improve property owned by the Federal Government; cooperate with local municipalities and others in joint projects; administer, preserve and maintain historic places; and carry out planning related to the proper development of the National Capital Region. In addition to these functions, the Commission is responsible for coordinating the development and controlling the appearance and location of buildings and works on all lands in the Capital Region which are owned by the Federal Government (NCC, n.d.).

The NCC owns, outright, over 28% of the land in the urbanized portion of the National Capital Region, and over 10% of the land in the Region as a whole, including the Greenbelt, Gatineau Park, parkways, parks, bridges and approaches, historic sites, and administration and service buildings (NCC, 1974: 8).

Even though the National Capital Commission is a crown agency and not a federal department, it has adopted the Environmental Assessment and Review Process of FEARO (Louise Kingsley, Pers. Comm.). Consequently, it is directed in its actions by the standing *1984 Order-in-Council* (see Chapter 3, Section 3.3), making environmental impact assessment a component part of the planning process of NCC initiatives involving potential environmental consequences.

For many of its environmental studies, the NCC uses data provided by the Regional Municipality of Ottawa-Carleton. In addition, primary and secondary data located or derived by external consultants are employed. Concerning initiatives that involve the two levels of government (the NCC and the RMOC), the impact assessment relationship between them is dealt with by an *ad hoc* committee responsible for HEAP (the harmonization of environmental assessment processes). The HEAP committee seeks to ensure that components of the IA process of the two government bodies are not duplicated, thereby saving person-hours and money (Louise Kingsley, Pers. Comm.). An example is presented to illustrate how the NCC operates in matters involving IA.

In 1989, Delcan Corporation (1989) was retained by Bell Northern Research. The latter wished to expand its existing administration headquarters by 1.7 million square feet of office and laboratory space within the Greenbelt (which involved 121 hectares of land that is owned and administered by the NCC). Since the impacts and possible mitigation methods were unknown, Delcan was retained to conduct the Initial Environmental Evaluation (IEE) required under the guidelines of the existing *1984 Order-In-Council* (Figure 3.2 in Chapter 3).

Having undergone an environmental screening under EARP, the National Capital Commission decided that the proposed expansion project presented significant enough potential environmental effects and public concern that an Initial Environmental Evaluation would be required (Delcan, 1989: 1-3).

The project site was investigated, the major impacts were identified, and mitigation and monitoring measures were suggested. Typically, the Land Resource Management Division and the Environmental Assessment Committee of the NCC direct and administer the research process. The final site plan was subject to NCC approval, thereby ensuring that measures for monitoring impacts, and the means to address any negative impacts that arose from the development, were guaranteed as a condition of approval. If this project were to occur today, now that the City of Ottawa's municipal environmental evaluation process (MEEP) is in place, the NCC would have proceeded in similar fashion. The IEE would have met the requirements of MEEP (which also seeks to avoid the duplication of research done by higher-order governments), thereby permitting the City of Ottawa to approve the building permit for Bell Northern Research.

The interaction of the City of Ottawa and the NCC in environmental matters is determined by jurisdictional authority. The NCC has internal functions that duplicate the functions of the City of Ottawa. However, its position within the government hierarchy is higher and its decisions concerning land use matters therefore take precedence. Strictly speaking, "the federal government is not obliged to respect municipal official plans and zoning by-laws" (RMOC,

1989: 1-2). When *Bill C-78* is promulgated later in 1993, it is expected that crown agencies such as the NCC will adopt specific regulations sometime later. The role of UIA in the NCC's planning process may be altered at that time, but the implications (if any) for the UIA/planning relationship in Ottawa and across the Region remain to be defined.

#### 8.2.2.1 The Regional Municipality of Ottawa-Carleton (RMOC)

The RMOC (Figure 8.1) was incorporated June 15, 1968. Regional council presently consists of 32 councillors, plus a regional chair who is elected-at-large (MOMA, 1992: 8-9). The most recent version of the Official Plan for the Regional Municipality of Ottawa-Carleton underwent five years of review and was approved in 1988. Numerous amendments have been introduced in subsequent years (Phillips, 1990: 26) and several parts of the proposed Regional Official Plan are just completing the appeals process at Ontario Municipal Board hearings. Moreover, the very structure and function of the RMOC itself are being examined by the Ministry of Municipal Affairs through a series of reviews, including the Bartlett, Graham and Kirby Commissions of the past half-dozen years.

The Bartlett Commission of 1988 addressed the re-organization of regional government. The Graham Commission of 1990 attempted "to design a system of new regional wards which will elect those regional councillors who, together with the local mayors, will form the full regional council" (Graham, 1990: 2). The Kirby Commission of 1992, in turn, was concerned with determining the degree of public and municipal support for structural reform of Ottawa-Carleton, including the pressing proposition of whether or not the region's two-level government should be maintained (Kirby, 1992: 1).

As part of this brief comment on IA as practiced by the Regional Municipality of Ottawa-

Carleton, reference to a recent newspaper article may be instructive (Figure 8.3). Allowing for both errors of omission and commission in a brief summary of a complicated matter, it appears very clear (paragraphs 7-10) that for the highly visible and highly contentious transportation project and study at issue, the statement of problem or the methodology was seriously flawed. That is, environmental impacts were ignored and attention focussed entirely on economic considerations, a flaw that was confirmed upon review of the actual report (Goss Gilroy, 1993).

In terms of what has been written in previous sections about roles and relationships, it appears that an ironic situation is presented. Politicians, acting in the interests of their constituents, are invoking the need to examine the environmental issues. As for the planners, who should be arguing on behalf of the environmental dimension as a key consideration, they seem to be silent on the matter. This situation emphasizes the fact that the Region does not formally integrate assessment into its planning process.

Nevertheless, the RMOC does act in accordance with the Ontario *Environmental Assessment Act* and undertakes environmental assessment studies for transportation-oriented and other projects under the aegis of the provincially promulgated *Guidelines For Class Environmental Assessments* (Greg Tokarz, Pers. Comm.). This function is administered by the Region's Departments of Transportation and Environmental Services.

#### 8.2.2.2 The City of Ottawa and its Official Plan

"The *City Of Ottawa Act*, the *Municipal Act Of Ontario*, the *Regional Municipality of Ottawa-Carleton Act* and the *Municipal Elections Act* are the principal acts which define the organization of the City Of Ottawa" (Bernard et al, 1974: 7). City government is a council-board of control

Figure 8.3 Newspaper Article Concerning the Omission of Environmental Impacts in a Transportation Study Presented to the Region's Transportation Committee.  
(Source: Marchildon, 1993: 26).

# Report says plan a boon

By LYNN  
MARCHILDON  
Ottawa Sun

The Hunt Club Rd. extension will create about 900 jobs and up to \$166 million in economic spinoffs, according to a regional report released yesterday.

The \$25,000 study, presented to the transportation committee, looks at the economic benefits of 11 transportation projects, including the Hunt Club plan.

It will be used to encourage the province to keep its promise to help fund those projects, said transit commissioner Mike Sheflin.

Together, the 11 projects will create 6,400 jobs and up to \$93 million in tax revenue if they go ahead within the next several years.

The job estimate is based on research that shows 35 jobs are created for each \$1 million spent.

The region plans to extend Hunt Club Rd. from Merivale Rd. to Hwy. 416 and from Bowesville Rd. to Airport Pkwy. at a cost of \$46 million.

However, the study's findings quickly came under fire from councillors who said it should have looked at environmental impacts of the projects in addition to the economic gains.

"It's a waste of 25 grand to tell us the obvious," said Dalhousie Coun. Peter Harris.

And a group opposed to the Hunt Club Rd. extension criticized the report for not looking at alternatives to the road or the damage caused by its construction over Greenbelt land.

"It's simply something to justify these guys building roads," said Chris Jalkotzy, a member of the Alliance to Save Our Greenbelt.

Ottawa-Carleton is negotiating a purchase agreement to buy the land needed for the Hunt Club Rd. extension from the National Capital Commission.

## Just the facts

Road and bridge projects scheduled for the next 2-3 years:

- Baseline Rd. (Richmond Rd. to Greenbank Rd., \$10 million)
- March Rd. (Queensway to Solandt Rd., \$18.5 million)
- Walkley Rd. extension (Russell Rd. to Hwy 417, \$20.5 million)
- Hawthorne/Walkley Connection (\$13.5 million)
- Hunt Club Rd. (Merivale Rd. to Hwy. 416 and Bowesville Rd. to Airport Pkwy., \$46 million)
- St. Joseph Blvd. (Queensway to Jeanne d'Arc Blvd. to Airport Pkwy., \$17 million)
- Bank St. Canal Bridge (\$10 million)
- Hon. George Dunbar Bridge (\$37 million)
- Cummings Bridge (\$18 million)
- Mackenzie King Bridge (\$18.5 million)
- Bytown Bridges (\$7 million)

system of government, and power is exercised by an elected Council consisting of the Mayor and fifteen aldermen elected from fifteen wards (City of Ottawa, 1988b: 15).

Ottawa's original Official Plan was approved in 1953 (Maclaren, 1992c: 216). An amended Official Plan was approved by City Council on July 3, 1991, but awaits final approval by the Regional Municipality of Ottawa-Carleton (Maclaren, 1992c: 215). The decision to review and update the 1953 Official Plan "was made largely in response to the fact that the Plan had not been comprehensively updated for a period of 35 years" (Maclaren, 1992c: 216). The review process was initiated in 1985, and the final draft of the city's revised Official Plan was released in February of 1991 (Yan, 1991: 12).

When the preliminary draft of the plan was released in September of 1989, it received little public comment in the initial months after its release. However, after a workshop sponsored by the Federation of Citizens' Associations in January, 1990, dozens of briefs were filed in objection to virtually every part, section and paragraph of the draft (Barry Wellar, Pers. Comm.). For details, see the *Record of Submissions To Draft Official Plan* (City of Ottawa, 1990), which contains 128 briefs. The final version of the plan ultimately incorporated many of the comments and suggestions made by the public and other interested parties, and was released in February of 1991 (Buchanan, 1991: 8).

On May 28, 1991, the Council of the City of Ottawa approved the Official Plan (Nawaz, 1991: 54). The Official Plan itself is divided into three volumes: Volume I is the *Primary Plan*, Volume II is the *Secondary Policy Plans/Site Specific Policies* and Volume III is *Appendices To the City Of Ottawa Official Plan*. Volume I is divided into 10 major sections, including the following: Introduction, Municipal Development Strategy, Key Management Components,

Economic Development and Employment Areas, Environmental Management, Transportation, Utilities, Leisure Resources and Institutional Areas.

### 8.2.3 The Municipal Environmental Evaluation Process in Ottawa

It is within the Environmental Management section of the Official Plan that the Municipal Environmental Evaluation Process (MEEP) appears.

With the development of environmental management policies and with the declaration of its intention to practice the principles of sustainable development through land use planning, Ottawa has pioneered a new approach to municipal planning (Nawaz, 1991: 54).

Sustainable urban development represents the cornerstone of the Official Plan's Mission Statement:

City Council accepts that change is an on-going phenomenon in cities which must be managed within the parameters imposed by the overriding aim of preserving a lasting habitat for humanity and wildlife. It also recognizes that economic prosperity can provide us with the capability to support wise resource management, to meet social needs and to improve environmental quality. Therefore, City Council supports an approach to managing urban development which balances the rights of the individual and the needs of society with the need to conserve our natural resource base and enhance the natural environment, thereby promoting the health of Ottawa's inhabitants and communities (City of Ottawa, 1991d: Volume 1, Title Page).

The section on environmental management embraces this mission statement, and refers to the use of environmental impact evaluation as a mechanism to:

broaden the tools available for assessing development/activity for its impact on the environment and identifying measures to prevent any adverse impact by incorporating and implementing an assessment process such as the Municipal Environmental Evaluation in the development/activity review process (City of Ottawa, 1991d: Section 6.0, 1).

The policy objectives and policies that comprise the framework for the development of a municipal environmental evaluation process cover three pages (29-31, Chapter 6) in the Official Plan (Appendix 6).

### 8.2.3.0 The Original Introduction of MEEP

When the preliminary draft of the Official Plan was submitted to public review in 1989, approximately 80% of the public's comments "called for the plan to pay more attention to environmental concerns" (Maclaren, 1992c: 221). Rasheda Nawaz, an environmental planner employed by the City of Ottawa, recognized the pivotal role that impact assessment could play in the municipal arena as "one of the key components of environmental management" and this has been accomplished through the introduction of MEEP into the Official Plan (City of Ottawa, 1989: 54).

### 8.2.3.1 MEEP-The Municipal Environmental Evaluation Process

The Municipal Environmental Evaluation Process (MEEP) is a program within the Urban Environmental Conservation Strategy, City of Ottawa. For the City of Ottawa, the "environment" is defined in the same way as it is under the aegis of Ontario's *Environmental Assessment Act*.

This means that the environment includes:

1. Air, land or water;
2. Plant and animal life, including man;
3. The social, economic and cultural conditions that influence the life of man or a community;
4. Any building, structure, machine or other device or thing made by man;
5. Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of man; or
6. Any part or combination of the foregoing and the interrelationships between any two or more of them (City of Ottawa, 1991a: 1).

In other words, the "environment" includes the following dimensions:

1. Physical resources: air, water, land and natural resources;
2. Social resources such as housing, education, heritage, and recreation;
3. Economic resources such as the industrial base and employment (City of Ottawa, 1991b).

The Department of Engineering and Public Works of the City of Ottawa contends that impact assessment is "a planning tool that integrates environmental considerations into project

planning, development and implementation" (City of Ottawa, 1991c: 9). The Department also suggests that the application of a decision-making tool such as impact assessment ensures that environmental impacts and effects, both physical and social, are identified so that design alterations and mitigation measures can be incorporated into the development process to minimize or eliminate adverse impacts.

The Department agrees that impact assessment is to be implemented as early in the planning process as possible (City of Ottawa, 1991c: 9). The stated goals of MEEP are to:

1. Implement an environmental assessment process that evaluates the effects on the environment resulting from projects, programs and policies within the City of Ottawa before irrevocable decisions are taken;
2. Utilize existing federal, provincial, or regional assessment where possible to avoid duplication of assessment where the assessment adequately addresses the concerns of the City of Ottawa (City of Ottawa, 1991c: 10).

More specifically, the Official Plan states that the objectives of MEEP are to:

- a. Prevent or minimize adverse impacts of a proposed development, land use or activity on the environment;
- b. Ascertain the potential impact on the environment of a proposed development;
- c. Ensure the undertaking of measures that minimize or eliminate the potential adverse impacts (mitigating measures) on the environment resulting from a project or activity (City of Ottawa, 1991d: Section 6.0, 29).

The objectives of MEEP stress the difference between urban planning and impact assessment.

Planning is primarily concerned with plan generation and plan realization. The underlying basis for impact assessment is to ensure that negative impacts are minimized in the formulation of projects or policies, as expressed in the objectives listed above.

MEEP is to be applied to all municipal activities, "both internal operations and development activities -- as well as non-municipal private and public sector development applications" (City of Ottawa, 1992a: i). Essentially, there are two streams that the process is applied to:

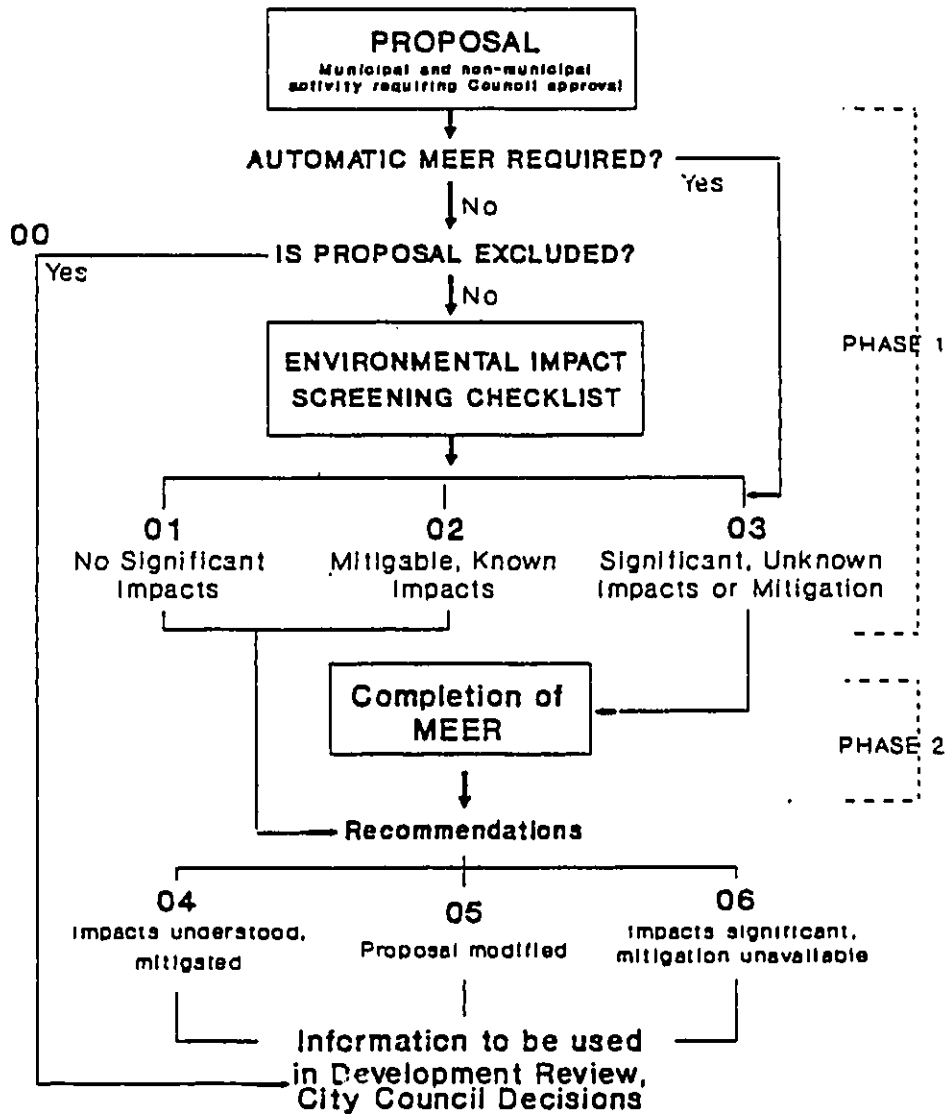
1. Departmental applications, which includes all non-development activities (projects, policies, programmes, services) undertaken by municipal departments of the City of Ottawa that do not require the approval of the Department of Planning and Development. These proposals do not require an Official Plan or zoning by-law amendment, or subdivision, condominium or site plan control application (City of Ottawa, 1992a: 6);
2. Land development applications, which include private development proposals and those municipal departmental applications that require approval of the Department of Planning and Development. In other words, these proposals require either an Official Plan amendment, or a Zoning By-law, subdivision, condominium or site plan control application (City of Ottawa, 1992a: 14).

The two processes vary slightly. Alongside the biophysical elements, departmental applications address the socio-economic components of the environment. Conversely, development applications address only the biophysical elements of the environment, since it is assumed that socio-economic dimensions will be dealt with under Site Plan Control as delineated in the *Planning Act* (City of Ottawa, 1992a: i). City proposals that require "approval through the Department Of Planning and Development will apply the Process as it relates to development applications" (City of Ottawa, 1992a: i).

In brief, the process operates in the following fashion (Figure 8.4):

1. Initial evaluation. A determination is made whether the initiative is included or excluded from the process;
2. Determination of the level of impact. If the initiative does not appear on the exclusion list, the completion of an Environmental Impact Checklist by the proponent is required;
3. A screening decision is made. For example, a Screening Decision Code of 01 indicates that no adverse impacts have been identified. If a screening decision of 03 is given, which suggests that significant impacts have been identified or that the effectiveness of the mitigation measures are uncertain, then a Municipal Environmental Evaluation Report (MEER) is required;
4. A MEER must include a detailed analysis and statement of predicted impacts, alongside a description of the mitigation measures proposed;
5. An evaluation of the MEER follows. "The process is now complete and the information obtained will be used as part of the decision-making process within the Department" (City of Ottawa, 1992a: 13).

Figure 8.4 A Flow Diagram of Ottawa's Municipal Environmental Evaluation Process (MEEP).  
 (Source: City of Ottawa, 1992b: 5).



### 8.2.3.2 Observations Concerning MEEP

Given the outline of MEEP above, and the finer points of the City of Ottawa's (1992a) City of Ottawa: Municipal Environmental Evaluation Process (MEEP), a number of strengths and weaknesses are apparent. In regard to its strengths, and relative to existing municipal IA processes elsewhere in the province and the country as a whole, it appears that the Ottawa MEEP is exemplary in two significant respects: (1) private development initiatives will be subject to the process and (2) policy initiatives will be subject to the process.

As Rees (1988: 281) suggested, "existing impact assessment requirements generally do not apply to purely private sector proposals (which implicitly affirms the primacy of private economic interests over public environmental values)." No existing Canadian precedents were located which subject both private sector initiatives and public sector policies to an IA process, and hence the observation about the "exemplary" aspects of MEEP. On the other hand, in regard to weaknesses, there are a number of difficulties that are apparent with the process. Many of these difficulties become evident when MEEP, as presented in the City of Ottawa's (1992a) City of Ottawa: Municipal Environmental Evaluation Process (MEEP), is compared to a more complete impact assessment framework, such as that articulated by Whitney and Maclaren (1985: 1-4). The central weaknesses in the process include the following:

1. A needs assessment or needs justification component is not apparent in the process. A needs assessment component establishes that needs have been identified and, more importantly, that they are to be realized by the initiative. The omission of this component weakens both the content and process of the Ottawa approach.
2. There is no explicit stage for the consideration of alternatives and the associated impacts. It is a rudiment of IA, and problem-solving approaches in general, that alternatives are explored in a more than a casual or off-handed fashion. The failure to explicitly stress the 'alternatives stage' of a municipal environmental evaluation process is a basic error in design.

3. No explicit monitoring component is evident. Without effective monitoring, questions concerning the existing and preferred states of affairs, accuracy of predictions, and the effectiveness of proposed mitigation cannot be answered via recourse to data/information. And, as a consequence, the success of the overall design cannot be evaluated due to the prior failure to monitor the project's or policy's impacts after implementation.
4. There is no explicit identification of where public participation and public input will be integrated into the process. For complex development proposals and policies, public participation could be explicitly integrated with the scoping, significance assessment, evaluation and monitoring phases of the process (Whitney and Maclaren, 1985: 4). If integrated throughout the process, public participation can influence the direction of the initiative, and short-circuit the necessity for reactive and expensive measures later on in the implementation or operation phase of the initiative.

A typical situation in IA has public participation mandated in the initial scoping stage and then at a final public meeting or hearing before project approval. By having only the two discrete intersections between the public and the development process, the public participation element is severely curtailed. Moreover, it is an IA fundamental that public participation be incorporated into the process where it will have the greatest use, and especially that it occur early enough to ensure that IA research results can be incorporated into policy or project formulation.

Similarly, the public, as one of the "relevant groups," should contribute to the identification and weighting of the "significance criteria," which is similar to the intent behind principles of public participation in the planning process. In view of the dramatic changes that occurred as a result of the Official Plan review, most notably because of public involvement that was precipitated by the Federation of Citizens' Associations, this weakness appears to be a likely source of friction and challenge (Barry Wellar, Pers. Comm.).

5. No distinction is made between the predictive and evaluative stages of the process. These two stages of the process are different in both principle and practice. IA principles require that the two stages be distinguished to ensure that the quantitative and qualitative dimensions of each activity component are not confused. In this regard, it is noteworthy that many similar weaknesses were identified in the responses to the draft Official Plan (City of Ottawa, 1989a).
6. No menu of impact assessment methods and techniques is provided. There is no discussion of which methods and techniques are considered within the capability of planning staff to either implement or comment on (in cases where the EIS is completed by external consultants). A consultant using the MEEP report for the completion of a MEER would be unsure of how to proceed, and of the extent and degree to which the impact assessment approach and findings could be used to advantage.

7. No mechanism to account for and study the cumulative impacts of urban development is provided. Studying the spatial concentration of different initiatives over time is an explicit part of the IA methodology, because "the single project focus of typical assessments ignores the cumulative effects of incremental development" (Rees, 1988: 282). This concern was specifically raised by Wellar (1990d: 771) during the Official Plan Review in the Ontario Municipal Board (OMB) process. Similarly, Valpy (1990: A8) has observed that the OMB "has refused to consider the impact of cumulative development, insisting on examining each application before it in isolation." Consequently, if the City of Ottawa is to engage in more than an extremely limited IA program, then MEEP should make up for this failure on the part of the OMB.
8. A self-assessment requirement is used. The requirement for the initiating department or project proponent to do its own environmental assessment initially creates the perception, if not the reality, of conflict of interest. As well, other negative, secondary consequences flow from this initial error of commission. The incentive for doing an unbiased assessment is skewed by this arrangement since the project proponent may 'overlook' certain impacts in the interests of getting the project approved. More succinctly, Needham (1992: 219) suggests that consultants operating in the environmental information field can be "considered to be preoccupied with the welfare of paying clients."

Furthermore, the viability of self-assessment operates on the presumption that the initiating department has the necessary expertise to carry out an appropriate assessment. While Ottawa may be an exception to the rule, the survey of Ontario municipalities revealed that many municipal planning departments lack the interdisciplinary expertise necessary for a comprehensive IA. It appears most unlikely, therefore, that non-planning departments in Ottawa could be considered qualified to adequately evaluate their own initiatives in an environmental context.

9. No discussion of the decision criteria for the screening stage is provided concerning the seriousness of initially identified impacts. IA principles require that the decision criteria which prioritize and evaluate potential impacts have a rationale, as well as some semblance of cross-applicability with respect to different types of proposals. For example, FEARO provides the details of decision criteria (magnitude, duration, precedence) and this aids the proponents in identifying those dimensions of their proposals requiring special attention (Duffy, 1986). More specific decision criteria involving standards of development should also be addressed. For example, questions such as the following may arise: What are the acceptable limits of architectural discontinuity that are created by a new building? What are the acceptable limits to increased traffic congestion accompanying a new strip mall? Consistent answers to questions such as these must follow from accepted decision rules, an argument made throughout the Official Plan review by citizens who insisted that decision rules and decision points be made explicit.

10. The exclusion lists are broad and subject to manipulation. By manipulating its description, a project or proposal could be deposited into one of the excluded categories, thereby circumventing the process. As well, certain items on the exclusion list are questionable according to the literature. In particular, it appears that development proposals involving heritage demolitions, heritage alterations and renovations should be automatically included, rather than excluded, from MEEP. That is, heritage buildings and areas represent vital links between the past and the present, and for many people are valuable environmental components in terms of both aesthetics and culture. Even if initiatives involving heritage buildings are covered by other legislation, integration of this dimension into the city's MEEP appears necessary in order to be consistent with IA fundamentals.
11. No mechanism that can catch initiatives that 'fall through the cracks' is provided. It is possible for initiatives to be approved without full information. In parallel with the *Planning Act* and Official Plans, it appears that MEEP requires a means to stop or re-visit proposals for which new information becomes available.
12. No reference is made to the economic and administrative feasibility of the process.
13. Different types of mitigation are not addressed. Mitigation measures can be design-driven, compensatory (e.g. monetary) or done on a *quid pro quo* basis. Alternatives are not explored.
14. Overall, the document lacks clarity. That is, and comparing MEEP to the literature on the topic, it is not entirely clear how the different parts of the process interact temporally. Furthermore, the differentiation, if any, between the treatment of departmental applications and land development applications is not stated explicitly in terms of how socio-economic impacts are to be dealt with.
15. Assurances that discretionary power by council cannot be arbitrarily or capriciously invoked are not evident. There is a trap when using impact assessment, because it "anoints and blesses the process of 'development,'" thereby permitting the development industry to do what they've always done, but now with the tacit approval of an environmental "catechism" (Livingston, 1990: 110). To circumvent abuse, discretionary power must be directed to activities such as those noted above (in #11) which serve the IA process and the broad public interest. Needham (1992: 220) stresses the need for an impartial, independent Auditor or Ombudsman for the Environment that is "adequately financed, and insulated from the whims and peculiarities of government." At the municipal level, a position could be created to monitor whether MEEP is properly applied.

16. There is no apparent provision for intervenor funding. "Intervenor funding involves the provision of financial assistance to groups wishing to participate in public hearings associated with EIA reviews" (Needham and Swerdfager, 1989: 4). The idea behind intervenor funding is to 'level the playing field' by providing funds for technical expertise, legal counsel, and for the various costs of preparing for public hearings such as telephone bills, photocopying, travel and accommodation. Given that many community groups and individuals made major contributions to the Official Plan review, no simple explanation arises to account for this weakness in MEEP. After all, a "lack of funds precludes many ordinary citizens from participating in the planning process" (Wellar, 1989b: 3) and ordinary citizens are precisely for whom planning is (purportedly) intended.
17. The legal force of the process is not delimited clearly. It is not apparent which portions of the process will be ultimately included in the Official Plan and, therefore, which portions will have legal force (that is, be subject to appeal to a higher authority) once the Official Plan is adopted.
18. In the Land Development Applications component of the process, there is no requirement for an investigation of socio-economic impacts. This occurs because it is presumed that initiatives facing Site Plan Control will have already addressed the pertinent issues as per the requirements of the province's *Planning Act*. This presumption is, in fact, logically flawed and works against the principles of planning that environmental evaluation is supposed to uphold. That is, MEEP is intended to be an integrative environmental planning tool, not a specifically analytical or disintegrative one. As such, and following from the framework established more than two decades ago in early IA work by Cross and Wellar (1971) and several years later by Munn (1975), the socio-economic and biogeophysical dimensions of the environment should be fully integrated and included in the MEEP.
19. A definition of when and why impacts should be considered significant is not provided. This leaves great discretionary power in the hands of the departments and private sector project proponents that are doing self-assessments. Indeed, a lack of detail in this key regard may be a fatal flaw rather than a mere weakness, and perhaps causing MEEP to be dismissed as 'window dressing' when put to an operational test.
20. Details concerning the accessibility of information generated by MEEP are not provided. To ensure public accountability of the process, some standard practice for disseminating information attained through MEEP to the public and other relevant groups is necessary. That condition is not satisfied, which means that in practical terms the public is *de facto* precluded from full, timely participation in the MEEP.

In response to the City of Ottawa's public consultation program for the refining of MEEP, a preliminary version of these comments and observations were formally submitted to the

Department of Engineering and Works in late 1992. The planner supervising the public consultation component, Kim Leach, personally received the comments and gave assurances that the issues raised would be addressed. She remarked that MEEP isn't fully developed yet and that there are still some points to be worked out. In the City Council Agenda dated March 3rd, 1993 (City of Ottawa, 1993: 49), the author is listed as a public participant. On that day, MEEP was presented to City Council and carried (Kim Leach, Pers. Comm.). Its first evaluation is scheduled for May, 1994.

### 8.3 Summary

Oakville's IA process, while comprehensive and forward-looking on paper, is infrequently and inconsistently applied and the influence of politics infringes on the potential integrity of urban impact assessment. Ottawa's process, on the other hand, is to be universally applied to all initiatives (unless specifically excluded), including public policies and private development proposals. However, given the weaknesses in the Ottawa model that are noted in Section 8.2.3.2, many of which are variations of the 'announced, evaluable, and verifiable' criteria of formal IA identified in Section 7.2, it appears that MEEP is still far more a pathway than a destination. Moreover, since the ultimate formulation of the process remains to be elaborated and adopted, it is not yet possible to evaluate MEEP's actual effectiveness and efficiency. Nevertheless, once the process is 'up and running,' and is subject to real world testing, the City of Ottawa could ultimately be a valuable laboratory of study concerning the strengths and weaknesses of IA at the municipal level.

## Chapter 9 Conclusions and Implications for Further Research

Several general conclusions and implications that follow from the conceptual and empirical research are presented in this chapter. Possible directions for further research are then suggested.

### 9.0 Conclusions

Within the academic literature (which provides much of the knowledge base for IA since the real world component is still at a relatively early stage), many advantages are linked to the integration of impact assessment with urban planning processes. Some of the central advantages include the following:

1. Increased awareness and understanding of the effects of physical development on the environment;
2. Increased awareness and understanding of the impacts on humans resulting from change and lack of change in the natural and built environments;
3. Greater provision for public accessibility to development information;
4. Greater opportunity for public comment on initiatives;
5. Assurance that impacts are considered early in project or policy design;
6. Contribution to the environmental database characterizing the planning area;
7. Assessment of cumulative impacts over time; and,
8. Increased capacity to cope with the cross-jurisdictional complexity of such issues as air and noise pollution, urban sprawl and region-wide commercial, industrial, transportation and other initiatives.

Upon testing the academic and professional literature against urban planning realities in Ontario, respondents from municipalities using impact assessment universally agreed that IA brought many specific advantages to the urban planning process. Some of the cited advantages are:

1. Increased understanding of potential impacts;
2. Minimization of negative impacts;
3. Assurance that the affected parties and relevant groups have a full and timely opportunity to make their concerns known early;
4. Increased emphasis on mitigatory measures;
5. Recognition and respect for more forward-looking planning; and,
6. Enhancement of the municipal data base to support both research and action-oriented activities.

As a group, the respondents supported the hypothesis underlying the present study. That is,

*Impact assessment has evolved into a process of inquiry that should be integrated into the urban planning processes of larger Ontario municipalities.*

The important outcome to be achieved is that by integrating impact assessment with the urban planning process better decision processes and outcomes can be realized.

A second general finding from the study is that impact assessment is, in principle and in practice, a viable means to enhance the content and process of urban planning in the larger municipalities of Ontario. It was also found, however, that adoption of IA does not occur simply because it is a good idea. Rather, and for a variety of technical, institutional, organizational, and other reasons, the integration of the two processes has not yet been fully or effectively achieved. Moreover, there is no established implementation scenario or well-worn path to follow, which explains the wide range of impact assessment processes and applications evident in the fifteen municipalities in Ontario that actually use IA.

It was also empirically determined that, at present, a full integration (recall Chapter 6) of impact assessment with the urban planning process does not exist in any of the thirty-three largest Ontario municipalities. However, two of the largest municipalities in Ontario, the Metropolitan Municipality of Toronto and the City of Ottawa, have new Official Plans that are awaiting approval and show high levels of potential for integrating a formal IA process into the urban planning process.

The process is referred to as MIE (Metropolitan Impact Evaluation) in Toronto and as the MEEP (Municipal Environmental Evaluation Process) in Ottawa. At present, these two processes are only partially integrated. In both instances, the IA process is distinct from the planning

process, and intersects at a number of discrete points and phases of the planning process. In both instances, it appears that a needs justification component is overlooked, as is rigorous consideration of project alternatives early in the process. Further, it remains to be seen if the impact assessment component of these two new Official Plans will be approved *in toto* by the respective councils and by the Ministry of Municipal Affairs.

The fact that full integration does not exist in the province suggests that planning departments are missing an opportunity to formalize practices already in place into a cohesive and operational methodology. And, citizens are being denied whatever benefits might flow from 'putting the planning house in order.' Insofar as full integration is not being attained for institutional, organizational, technical, or other reasons, that important topic is a matter to be considered under a different research problem statement.

For those municipalities that use IA in the planning process, the most common application concerned development proposals involving environmentally sensitive areas (ESAs). In nearly all applications (and especially the ESA type), emphasis was on the assessment of impacts pertaining to the biogeophysical environment, to the detriment of socio-economic components. Once again, it is a case of missed opportunity. By using IA in such a limited manner, many of the contributions it can make to planning are being overlooked. The same can be said of ignoring the capability of IA to be applied to the policy, program and plan level. Except in a few cases, impact assessment was not used on the policy level. This is a substantial error of oversight with respect to the capabilities of impact assessment. Impact assessment that is implemented at the project level alone diminishes IA's possible contribution to addressing cumulative impacts (Wood and Dejedour, 1992: 3).

Another important finding was that, in large measure, the perceived resistances or counter-arguments to the integration of IA and planning that were identified by the respondents can be overcome. As for impediments such as restricted funds, fear of loss of institutional or disciplinary 'turf,' technical difficulties, data problems, technological shifts and challenges etc., they are general problems and are not created by nor limited to efforts involving the integration of IA and urban planning. That is, they are simply aspects of the real world that make it difficult to devise and implement the high-level kinds of socio-scientific methods and techniques required to correct the degradation of the urban milieu. Beyond IA as a tool, procedure, instrument of planning, however, Wellar (1989a; 1990b) pinpoints the urgency for a decision-making innovation along the lines of an IA/planning integration. As (Wellar, 1990b: 1) observes,

the general state and quality of our local to global health is apparently deteriorating at an increasing rate, in increasing numbers of areas, with increasingly painful and often disastrous results...much of the record of wrongs is directly attributable to failed policy decisions by governments at all levels.

Because of impact assessment's inherent and demonstrated value as a means to both define and pursue local objectives, it could and should be increasingly incorporated into the content and process of decisions involving urban projects, plans, programs and, most importantly, policies (because they set the municipal agenda).

### 9.1 Implications for Further Research

During the course of this study, a number of questions, issues and challenges arose concerning the content and process aspects of urban impact assessment. As the literature makes clear, many research issues and questions of a philosophical and methodological nature exist regarding IA in an urban planning context. Difficulties still confound the theoretical base underlying impact assessment, and practical problems continue to complicate its implementation, particularly in

the urban context. Further, the study of the real and perceived weaknesses of the process continues to require attention.

However, it is a central finding of this inquiry that the most pressing research involves establishing how impact assessment is being used in Canadian cities, and a rigorous, comprehensive examination of how effective this use has been. That is, an inventory of the use of IA across the country, and how it is applied in different contexts would provide the foundation for substantive comparative studies. And, in terms of lessons learned, municipalities attempting to implement impact assessment at the local level would have critical examinations of existing processes available for purposes of comparison and contrast.

In a similar direction, research testing the effectiveness and efficiency of the newly formulated UIA processes (e.g. Ottawa, Metro Toronto) is recommended, and particularly after these new processes have had an opportunity to operate for several years and have a track record to examine. A synthesis of this research could ultimately yield the formulation of a general urban impact assessment process against which individual instances of UIA could be judged.

A second implication is to build on the case for integrating impact assessment with urban planning processes. That activity would involve examining how integration could be made to occur, bearing in mind the variations of planning legislation and practices in Ontario and other provinces.

Third, the design, development and implementation of geographical information systems (GIS) represents a significant contribution of geographers to concepts, approaches and means to contemporary information management. Examination of the linkage of urban impact assessment

to existing and potential geographic information systems and services continues to be an important research direction (Wellar and Harris, 1992; Smith and Wellar, 1992).

Fourth, research into ways and means of conducting geographically-referenced cumulative impact studies and of incorporating study findings into the planning process is a matter of increasing importance. As demonstrated, much of the urban problem is due to planning and development decisions that were and are made on a project-by-project or site-specific basis. Cumulative impacts may involve extremely complex spatial and temporal patterns and interactions. The introduction of this dimension strongly challenges and perhaps overwhelms existing IA methods and techniques, leading to the suggestion that a comprehensive, sustained research program is needed in order to significantly enhance the contribution of IA to urban planning.

Two other specific research topics that flow from this study are:

1. Conducting impact assessment studies of urban policies and urban plans. Despite the highly urbanized state of the world, North America, Canada and Ontario, there is a dearth of information on this topic in the geographic, planning and policy sciences literature. The actual application of policy impact assessment in the urban context is virtually nonexistent in Ontario, except for the few examples noted in North York, Metro Toronto and Ottawa;
2. Revisiting the problem statement of this thesis after a period of time (perhaps in five years) might be instructive since many municipalities are currently undergoing major reformulations of their existing Official Plans. Consequently, this means that many planners are currently unfamiliar with the finer points of the newer plans and the ideas in them. In five years, this situation will likely have changed.

With only several decades of history, it is clear that empirical research concerning the integration of impact assessment and urban planning is in its early stages. The preceding are presented as research directions that follow from the present study and which could, if

successfully executed, help close the gap between what is and what should be regarding the impact assessment/urban planning relationship.

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### Personal Communication

- Armour, Audrey
- Professor, Faculty of Environmental Studies
  - York University
  - August 1992
- Bladen, Katharine
- Director, Policy Planning and Research
  - Regional Municipality of Peel
  - August 1992
- Braaksma, J.P.
- Professor, Department of Civil Engineering
  - Carleton University, Ottawa
  - April 1991
- Brawley, Carl
- Policy Planner
  - City of Brampton
  - September 1992
- Chi, Vivi
- Transportation Planner
  - Regional Municipality of Ottawa-Carleton
  - March 1993
- Chicoine, Mark
- Policy Planner
  - City of Mississauga
  - August 1992
- Coughlin, Jim
- Director of Planning
  - City of St. Catharines
  - August 1992
- Dunston, Judy
- Planner
  - City of Etobicoke
  - October 1992
- Duoba, Lilli
- Planner
  - City of Markham
  - August 1992
- Extance, Keith
- Planner
  - City of Hamilton
  - August 1992
- Fay, Peter
- Policy Analyst
  - City of Toronto
  - August 1992

- Fobert, Ted
- Public Liaison, Planning Department
  - City of Ottawa
  - October 1991
- Frost, Douglas
- Policy Analyst
  - Regional Municipality of Hamilton-Wentworth
  - August 1992
- Gosselin, Chris
- Planner
  - Regional Municipality of Waterloo
  - October 1992
- Hercz, Anna
- Project Officer, Environmental Management Branch
  - City of Ottawa
  - March 1993
- Hollo, William
- Director of Long Range Planning
  - City of North York
  - August 1992
- Jacobs, Dennis
- Director of Planning Policy and Housing
  - City of Nepean
  - July 1992
- Jeffrey, Barbara
- Senior Planner
  - Regional Municipality of York
  - August 1992
- Katolyk, Orest
- Senior Planner
  - City of London
  - August 1992
- Keating-Nauss, Sheila
- Federation of Canadian Municipalities
  - June 1992
- Kingsley, Louise
- National Capital Commission
  - Ottawa, Ontario
  - October 1991
  - March 1993
- Kumapley, Frank
- Planner
  - Regional Municipality of Ottawa-Carleton
  - August 1992
- LaRose, Wayne
- Public Liaison Officer
  - Planning and Development, City of Ottawa
  - June 1992

Leach, Kim	<ul style="list-style-type: none"> <li>- Project Officer, Environmental Management Branch</li> <li>- City of Ottawa</li> <li>- August 1992</li> </ul>
Leung, Shuki	<ul style="list-style-type: none"> <li>- Planner</li> <li>- Town of Oakville</li> <li>- August 1992</li> </ul>
Logan, Helen	<ul style="list-style-type: none"> <li>- Policy Co-ordinator</li> <li>- City of Toronto</li> <li>- August 1992</li> </ul>
McDonald, Paul	<ul style="list-style-type: none"> <li>- Co-ordinator, Environmental Management Branch</li> <li>- City of Ottawa</li> <li>- August 1992</li> </ul>
McGregor, Susan	<ul style="list-style-type: none"> <li>- Planner</li> <li>- City of Oshawa</li> <li>- November 1992</li> </ul>
McInnes, Suzanne	<ul style="list-style-type: none"> <li>- Policy Planner</li> <li>- Regional Municipality of Halton</li> <li>- October 1992</li> </ul>
Michael, Dr. M.	<ul style="list-style-type: none"> <li>- Commissioner of Planning</li> <li>- Regional Municipality of Durham</li> <li>- August 1992</li> </ul>
Moore, Peter	<ul style="list-style-type: none"> <li>- Principal Planner</li> <li>- City of Scarborough</li> <li>- August 1992</li> </ul>
Nawaz, Rasheda	<ul style="list-style-type: none"> <li>- Policy Planner</li> <li>- City of Ottawa</li> <li>- July 1992</li> </ul>
Needham, Roger	<ul style="list-style-type: none"> <li>- Professor, Department of Geography</li> <li>- University of Ottawa</li> </ul>
Nicholson, George	<ul style="list-style-type: none"> <li>- Senior Planner</li> <li>- Regional Municipality of Niagara</li> <li>- August 1992</li> </ul>
Novakowski, Nicholas	<ul style="list-style-type: none"> <li>- Environmental Consultant</li> <li>- Ottawa</li> </ul>

- Peddigrew, Randy
- Planner
  - City of Vaughn
  - August 1992
- Roe, David
- Manager of Agreement and By-law Administration
  - Regional Municipality of Haldimand-Norfolk
  - August 1992
- Seasons, Mark
- Senior Planner
  - National Capital Commission
- Stanley, T. Brock
- Director of Planning
  - City of Kitchener
  - August 1992
- Suffling, Roger
- Professor, School of Urban and Regional Planning
  - University of Waterloo
  - June 1992
- Tokarz, Greg
- Senior Planner
  - Sewell Commission
  - February 1993
- Tomaszewicz, Richard
- Commissioner of Planning
  - Borough of East York
  - August 1992
- Varma, Raj
- Senior Planner
  - City of Windsor
  - August 1992
- Warcholak, Ed
- Planner
  - Town of Oakville
  - August 1992
- Wellar, Barry
- Professor, Department of Geography
  - University of Ottawa
- Wong, Philip
- Manager of Long Range Planning
  - City of Thunder Bay
  - August 1992
- Wu, Tin-Chee
- Senior Planner
  - Regional Municipality of Sudbury
  - August 1992

**APPENDIX 1: Sources Of Documentation  
and Literature Search Materials**

Libraries used include the following:

1. University of Ottawa;
2. Carleton University;
3. University of Toronto;
4. Ottawa Public Library;
5. Nepean Public Library;
6. Oakville Public Library;
7. National Library of Canada;
8. Canada Mortgage and Housing;
9. Planning Library at Ottawa City Hall;
10. Planning Library at Oakville Town Hall;
11. Environment Canada libraries at Les Terrasses de la Chaudière and Place Vincent Massey.

In addition, and as part of the basic inventory of sources and resources, the following organizations and institutions were contacted for information: CEARC (Canadian Environmental Assessment Research Council); Chreod Development Planning Consultants; City of Ottawa Planning Department; FEARO (Federal Environmental Assessment Review Office); Faculty of Environmental Science at York University; the Geography Department of the University Of Ottawa; Federation Of Canadian Municipalities; Statistics Canada; IAIA (International Association of Impact Assessment); Ontario Ministry Of the Environment; Sage Publications; School of Urban and Regional Planning at Queen's University; School Of Urban and Regional Planning at the University Of Waterloo; Town of Oakville Planning Department; and the ULI (Urban Land Institute) in Washington, D.C.

APPENDIX 2: Planners Interviewed  
During Pilot Study

To increase the topicality of the survey, a small-scale pilot study was undertaken to establish whether an exploratory or confirmatory style of research should be used. To determine the extent to which urban planners working with an environmental focus were apprised of the content, process and explicit application of impact assessment, the following ten planners were interviewed by phone:

- |     |              |                   |               |
|-----|--------------|-------------------|---------------|
| 1.  | Brampton.    | Carl Brawley      |               |
| 2.  | Etobicoke.   | Perry Vagnini     |               |
| 3.  | Hamilton.    | Vladimir Matus    |               |
| 4.  | London.      | Gerry Tikalsky    |               |
| 5.  | Mississauga. | Chyi Lee Vun      |               |
| 6.  | Nepean.      | Dennis Jacobs     |               |
| 7.  | Ottawa.      | Rasheda Nawaz     |               |
| 8.  | North York.  | Mavis Urquhart    |               |
| 9.  | Scarborough. | Denise Rundle     |               |
| 10. | Toronto.     | David Stonehouse. | 416-392-0068. |

**APPENDIX 3: Participants  
In Preview Of Questionnaire**

In order to refine the questionnaire, remove ambiguities, and ensure that the format was operational, the following five people were contacted to participate in a preview of the questionnaire:

1. Dennis Jacobs. Director of Planning Policy and Housing. City of Nepean.
2. Barbara McKay. Industrial Psychologist. Bell Canada, Montréal.
2. Rasheda Nawaz. Environmental Policy Planner. City of Ottawa.
4. Dr. N.S. Novakowski. Environmental Impact Assessment Consultant.
3. Dr. Barry Wellar. Professor of Geography. University of Ottawa.

APPENDIX 4: The  
Questionnaire Package

Professor Barry Wellar  
Department Of Geography  
University of Ottawa

613-564-9072 (bus.)  
613-728-3483 (res.)

August, 1992

Dear \_\_\_\_\_

I am very pleased that one of my graduate students is examining the urban impact assessment/planning relationship for his Master's thesis. I will be equally pleased if you could assist by helping him acquire the base data that he is trying to obtain from the planning departments of municipalities (with populations of 100,000 or more) in Ontario.

The questionnaire that is enclosed has been pre-tested, both as a check on the clarity of the questions, and on the purpose of the questions. We are grateful to the planners in the Ottawa-Carleton area for the help given us, and for perhaps helping ensure a good response to a survey on a "non-trivial" topic.

I would be personally and professionally grateful, therefore, if you would arrange for a response to the survey on the behalf of your municipality. In the event of questions arising concerning the content of the questionnaire, I can be reached at the numbers listed at the top of the page. Erin Novakowski, my student, can be reached at 613-224-4555.

The purpose of this questionnaire is twofold:

1. To investigate the existing state of affairs concerning the use and application of impact assessment in the urban planning processes of Ontario municipalities;
2. To determine the preferred state of affairs concerning the potential use and application of impact assessment.

Within the context of this questionnaire, the term 'impact assessment' is used to refer to all types, including the following: environmental impact assessment, social impact assessment, health impact assessment and, especially, urban impact assessment.

The name of the respondent will be kept strictly confidential when the results are synthesized. I believe that this survey and thesis will be a valuable contribution to the field of planning, so please be assured that your support will be greatly appreciated.

Yours sincerely,

B. Wellar, MCIP  
Professor

## Notes For The Respondents To The Impact Assessment/Planning Survey

The use of the term 'impact assessment' (IA) in this questionnaire refers to all types, including the following: environmental IA, social IA, and especially, urban IA. IA is defined as a formal process that has been adopted as a way of synthesizing and organizing information about the predicted impacts of a policy or development proposal. Remember that, while having many similarities, planning and impact assessment are not the same thing; planning stresses plan generation and plan realization, while IA stresses project or policy evaluation for the sake of minimizing negative impacts. IA is a formal process where each of its activity stages is evident in the final impact statement as per a model or ideal process set forth by the policy planning division of your department. Normally, these activity stages will include the following:

1. identification of all impacts associated with the different dimensions of the environment (e.g. the biogeophysical environment, the social environment, the cultural environment), and stressing those impacts deemed important;
2. prediction of the magnitude of the impacts that will occur once the policy or project is undertaken;
3. interpretation of the significance of the impacts;
4. communication of the results of the previous stages with the relevant or affected groups (e.g. the public, other organizations, landowners).

This survey uses open-ended questions for the following reasons. First of all, the literature review indicated that there could be wide differences in the reactions and responses to questions of the type found in this survey. Secondly, the pre-test indicated that respondents should be allowed "room to manoeuvre," rather than be obliged to force-fit their replies into 'yes' and 'no' boxes. The two reasons combined strongly suggest that an "open-response" approach is appropriate for this topic and for the wide variety of respondents. To enable us to make the best use of your thoughts and efforts, we request that you proceed as follows in replying to the questions:

1. Please respond to all pertinent questions, and go into as much detail as you are able to provide. And, by all means, expand on any question that we do not take far enough to get at the heart of the impact assessment/planning relationship;
2. Please feel welcome to include "exhibits" (e.g. documents, correspondence, 'in-house' literature) as part of your response. To ensure accurate referencing, please mark the exhibits clearly so that they can be accurately tied to your comments;
3. The use of point form rather than narrative is encouraged, since this approach enables both you and us to focus on the central problems, concerns, and issues with a minimum of text.

Thank you for your participation. We look forward to receiving your responses and suggestions on any matter related to this topic. A summary of research results will be provided to you when the survey is completed.

Yours sincerely,

Erin Nicholas Novakowski  
Master's Student, Department of Geography  
University Of Ottawa

**QUESTIONNAIRE CONCERNING THE IMPACT ASSESSMENT/PLANNING RELATIONSHIP.**

1. Name of respondent:
2. Position or title of respondent:
3. Respondent's educational background (e.g. geography, planning, ecology, architecture) and field(s) of expertise:
4. Name of city, and city's 'planning' department:
5. Does your department use impact assessment (IA) as part of its planning process? If so, how?

The use of IA in this question and survey refers to applying impact assessment methods and techniques to development proposals, proposed policies, other departmental studies (e.g. land use, demographic, economic, environmental), as well as to zoning or Official Plan amendments and reviews. That is, we want to know if IA is part of the practice of planning in your municipality.

If your answer to question 5 is 'no,' then Question 6 is the final question to concern you. Thank you for participating. If your answer to question 5 is 'yes,' please skip question 6 and continue with the remainder of the questionnaire.

6. If impact assessment is not used by your planning department, what do you believe are the strongest resistances to doing so?

7. We wish to explore the purposes, degree and extent that impact assessment, in general, is employed in your municipality's planning and development process. This is not an 'easy' matter to set up for a wide mix of potential respondents, so please modify this part of the survey if our approach does not fit your situation.

Which of the following categories best characterizes the role of impact assessment in the planning and development process of your department? Please elaborate to the degree you believe necessary to illustrate the status of IA in your municipality:

- a. Fully integrated. That is, the activity stages of the planning process incorporate or parallel the activity stages of the impact assessment process;
- b. Partially integrated. That is, the impact assessment process is distinct from the planning process, but intersects at a point, points or phases of the planning process;
- c. Impact assessment activities occur on an occasional basis, according to circumstances or situations.

8. Within your municipality, is impact assessment demonstrated in principle and/or practice in Official Plans, Official Plan amendments, zoning by-laws, zoning by-law amendments, or land use studies? Please provide as complete a statement on this as you are able.



13. Are impact assessments done 'in-house' by your planning department, are outside consultants used, or are combinations involved? Again, details are welcome.
  
14. How is the public involved in your IA process? Are the impact statements resulting from research made public? Are the results discussed at public meetings?
  
15. Does your planning department use Geographic Information Systems (GIS)? If so, does your software have the capability for executing IA techniques? If possible, please provide details about the software in place or under consideration.
  
16. Are you familiar with any other municipalities (or regional municipalities) in Ontario that use impact assessment? If you respond 'yes,' please provide a brief statement of what you perceive to be the result of their use of impact assessment. Of particular value would be your opinion on lessons learned from their experiences with the application of impact assessment to the planning and development process.

Thank you for completing this questionnaire. A self-addressed stamped envelope is enclosed to expedite the return of your responses.

APPENDIX 5: Oakville's EIA Process  
As Presented In the Official Plan  
(Source: Town of Oakville, 1991: Appendix)

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APPENDIX 1  
GUIDELINES FOR ENVIRONMENTAL IMPACT ASSESSMENT

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The following guidelines have been adapted from a document prepared by the Region of Halton Planning Department, 1980 entitled "Guidelines for Environmental Impact Assessment". Unless otherwise specified by the Town, these guidelines will be followed in the preparation of Environmental Impact Assessment Reports.

1. CONTENT

An Environmental Impact Assessment will include the following:

1.1 A Description of the Proposal

- a) What is proposed?
- b) The purpose of the proposal.
- c) The actual land use, existing land use regulations, and ownership on and adjacent to the proposed location.
- d) A general location map and site plan.
- e) Activities associated with the proposal that may have an environmental impact.
- f) The start and finish for undertaking the proposal and any phasing scheme for the proposal.

1.2 A Description of the Surrounding Environment

- a) Complete a biophysical inventory of both terrestrial and aquatic communities, and an inventory of existing man made features and archaeological potential. The environmental inventory will vary significantly depending on the nature of the application and the area affected.
- b) Describe the methodology and techniques selected to undertake the environmental inventory.
- c) The E.I.A. should also include a statement of the environmental significance of the entire environmental planning area and a statement of the significance of that portion of the area affected by the proposal.

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## GUIDELINES FOR ENVIRONMENTAL IMPACT ASSESSMENT

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### 1.3 An Assessment of the Effects on the Environment including:

- a) A description of the effects on the environment of the proposal. These may include:
  - i) direct on-site effects (e.g. elimination of habitat);
  - ii) effects transported to adjacent areas (e.g. sedimentation downstream);
  - iii) effects on the important characteristics of the entire Environmental Planning Area (e.g. maintenance of natural diversity);
  - iv) external effects (e.g. effect on groundwater table);
  - v) effects on the use of the Environmental Planning Area by people (e.g. educational uses);
  - vi) immediate and long term effects.
- b) Provision of an explanation of the methods used to determine the effects on the environment.

### 1.4 A Description of Mitigating Measures

- a) Indicating in the assessment as many feasible mitigating measures as possible.
- b) Indicating those effects that can be reduced or eliminated by the various mitigating measures.
- c) Describing in detail the mitigating measures proposed to eliminate or reduce the effects. Examples include site plan modifications, improved construction practices, relocation of the development, stormwater management, restrictive covenants in deeds, etc.

### 1.5 Recommendations

List recommendations to include the advisability of proceeding and appropriate mitigation measures.

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## GUIDELINES FOR ENVIRONMENTAL IMPACT ASSESSMENT

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### 1.6 Background Information

The E.I.A. should include an appendix of:

- a) Literature cited;
- b) Curriculum vitae of study team members;
- c) All background data;
- d) List of people contacted during the study or referred to in the report.

### 1.7 Summary

Include a summary at the front of the report which shall include a description of the proposed development, the effects on the environment, and all recommendations.

## 2. PROCEDURE

- 2.1 When a proposal that may require an Environmental Impact Assessment (E.I.A.) is made and/or received by the Town, it shall be referred to Town Planning and Development Staff for consideration.
- 2.2 Staff will comment on the necessity and form of an environmental impact assessment of the development proposal. A decision will be rendered on the extent of the E.I.A. required.
- 2.3 Staff will determine if an E.I.A. is required and advise the proponent of the main issues to be addressed. Planning Committee will be consulted in the event of a disagreement. Town Staff will provide any available environmental data and clarify any concerns regarding the content of the E.I.A.
- 2.4 The proponent will prepare and submit a draft E.I.A. to the Planning and Development Department.
- 2.5 The draft E.I.A. will be circulated to the appropriate Town departments, Halton Region Conservation Authority, and other agencies, where appropriate, for comment.
- 2.6 Staff will review the comments and advise the proponent if the E.I.A. requires additional information.

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## GUIDELINES FOR ENVIRONMENTAL IMPACT ASSESSMENT

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- 2.7 The proponent will then prepare a final E.I.A.
- 2.8 The proponent will, if necessary, revise the development proposal in light of the results of the E.I.A.
- 2.9 Staff will review all comments and prepare a report and recommendation for Planning Committee.
- 3.0 NOTES ON REGIONAL ENVIRONMENTAL SENSITIVE AREAS AND CONSERVATION AUTHORITY AND MINISTRY OF NATURAL RESOURCES HAZARD LANDS

In situations where Environmental Planning Areas are also Regional Environmentally Sensitive Areas as designated in the Regional Official Plan, the Region of Halton Planning Department, Planning and Development Committee, and the Ecological Environmental Advisory Committee will also be involved in the initiation and requirements of an E.I.A. report. The Oakville Planning and Development Department will coordinate the response and all agencies, however, separate regional approval will be required in such uses.

Appendix 6: Ottawa's MEEP  
As Presented In the Official Plan  
(Source: City of Ottawa, 1991d: Chapter 6, 29-31)

## ENVIRONMENTAL EVALUATION

### 6.20 Municipal Environmental Evaluation

#### 6.20.1 Objectives

MINIMIZE ADVERSE  
IMPACTS

a) To prevent or minimize adverse impacts of a proposed development, land use or activity on the environment.

ASCERTAIN IMPACT

b) To ascertain the potential impact on the environment of a proposed development.

ENSURE MITIGATING  
MEASURES

c) To ensure the undertaking of measures that minimize or eliminate the potential adverse impacts (mitigating measures) on the environment resulting from a project or activity.

#### 6.20.2 Policies

M.E.E.R. REQUIRED

a) City Council shall require a Municipal Environmental Evaluation Report as the basis for assessing development proposals within the Greenway System, including those areas designated Environmentally Sensitive Area, Waterway Corridor, Linkage, Major Open Space, and contaminated sites and existing pits and quarries; and for any proposed waste management facility and snow disposal site.

ADDITIONAL SITES

b) City Council may also require a Municipal Environmental Evaluation Report as the basis for assessing development proposals, which have not been identified as per Policy a) above; but where it appears that the proposal may have the potential to adversely effect the environment and/or the health and safety of the citizens. In this regard:

ESTABLISH SCREENING  
PROCESS

i) City Council shall establish a screening process for development or planning proposals, as the basis to determine, upon receipt of the development application, the need for a Municipal Environmental Evaluation Report; and

ii) all development that is the subject of secondary planning, including a zoning, official plan, subdivision, condominium or site plan approval process shall be subject to the aforementioned screening procedure and, upon determination, may be required to submit a Municipal Environmental Evaluation Report.

EVALUATE AS PART OF  
ESTABLISHED  
APPROVAL PROCESS

c) City Council shall evaluate the Municipal Environmental Evaluation Report as part of the established approval procedure for development applications, as amended from time-to-time, and shall not be the subject of an independent decision-making process ( i.e., the report shall form part of the background information to the application as in the case of a transportation study or a marketing report).

INSTRUCTIONS TO  
GUIDE EVALUATION

d) City Council shall prepare and implement, as a priority, detailed instructions to guide the preparation of the Municipal Environmental Evaluation Report. In the interim, City Council shall require that the Municipal Environmental Evaluation Report submitted must include, but not be limited to, the following:

- i) a description of the environment that will be affected or that might reasonably be expected to be affected, directly or indirectly;
- ii) the effects that will be caused or that might reasonably be expected to be caused to the environment; and
- iii) the actions necessary or that may reasonably be expected to be necessary to prevent, change, mitigate or remedy and monitor the effects upon or the effects that might reasonably be expected upon the environment, by the proposed development.

M.E.E.R. NOT  
REQUIRED

e) City Council shall not require a Municipal Environmental Evaluation Report as the basis for assessing a development proposal as outlined above, where the subject undertaking is already subject to a federal or provincial environmental impact assessment process, provided such report satisfactorily addresses those environmental matters of municipal interest.

## 6.21 Urban Environmental Conservation Strategy

### 6.21.1 Objectives

PREPARE STRATEGY

a) To prepare and implement a comprehensive Urban Environmental Conservation Strategy, which shall provide the basic framework for achieving a better environment.

b) To ensure that the utilization of resources and the environment does not damage prospects for their use by future generations.

## 6.21.2 Policies

### COMPONENTS OF STRATEGY

a) City Council shall prepare and implement, as a priority, a comprehensive Urban Environmental Conservation Strategy as the means to address environmental issues affecting Ottawa. The components of the strategy shall be determined by City Council through public participation and endorsement, but may include, as a minimum:

### ENVIRONMENTAL SETTING

i) An Environmental Setting for Ottawa; which will examine the physical, social and environmental components within the City and will provide an environmental database for Ottawa;

### ASSESSMENT PROCESS

ii) The Municipal Environmental Evaluation/Assessment Process; which will, as a planning tool, integrate environmental considerations into project planning, development and implementation by evaluating the impacts of development activity on the environment, prior to its approval;

### PROTECTION PROGRAMMES

iii) Environmental Protection Programmes; to prevent deterioration of the environment resulting from human activity within the City;

### IMPROVE QUALITY

iv) Programmes to Improve Environmental Quality; such as beach clean-up, energy and water conservation and CO<sub>2</sub> reduction program;

### RESEARCH AND DEVELOPMENT

v) Research and Development Programme; to conduct studies in those areas where further information is needed to implement effective environmental programmes and to examine issues and legislation that may affect the city's environmental quality;

### COMMUNITY/CITY PARTNERS

vi) The Community and City in Partnership; for increased public/community involvement in the decision-making process through establishment of a transfer of information system between the public and the decision-makers, as well as between all levels of government and other municipalities; and

### AWARENESS AND EDUCATION

vii) An Education and Awareness Program; to provide the necessary information to the public to enable better understanding of the interactions between the environment and individual or collective activity, and to make and accept decisions that will effectively implement a conservation ethic.