

**Exploring Strategic Environmental Assessment in the  
Context of a Rapidly Urbanizing Municipality:  
A Case Study of the Regional Municipality of York, Ontario,  
Canada**

**A Synthesis Report for the Canadian Environmental  
Assessment Agency**

March 2010

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Catalogue No En106-94/2010E-PDF  
ISBN 978-1-100-16564-6

# Table of Contents

LIST OF TABLES .....	IV
LIST OF FIGURES .....	IV
LIST OF BOXES .....	IV
LIST OF ABBREVIATIONS .....	V
ABSTRACT.....	VI
EXECUTIVE SUMMARY.....	1
<b>1 INTRODUCTION.....</b>	<b>3</b>
<b>2 BACKGROUND TO AND RELEVANCE OF SEA: REVIEW OF MAIN AREAS OF LITERATURE 5</b>	
2.1 INTRODUCTION.....	5
2.2 SEA.....	5
2.2.1 <i>Need for SEA: Overcoming Limitations of EA</i> .....	5
2.2.2 <i>Aims and Benefits of SEA</i> .....	7
2.2.3 <i>The Evolution of SEA: Definitions, Concepts, Principles and Practice</i> .....	7
2.2.4 <i>The Evolving Concept and Practice of SEA: From Project EA Towards Sustainability Assessment</i> ..	9
2.2.5 <i>Categories and Principles of an SEA Framework</i> .....	10
2.2.6 <i>SEA Issues and Implementation: Tiered Environmental Decision Making, SEA as a Communication Tool and Sustainability-Oriented Decision Making</i> .....	13
2.3 LAND-USE PLANNING .....	18
2.3.1 <i>Planning for Environmentally Sensitive Areas, Natural Heritage and Water</i> .....	18
2.3.2 <i>Collaborative Planning</i> .....	19
2.4 MEANINGFUL PUBLIC ENGAGEMENT .....	21
2.4.1 <i>Barriers to Public Participation</i> .....	21
2.4.2 <i>Best Practices: Public Participation in EA/SEA</i> .....	22
2.5 GOVERNANCE.....	25
2.6 SEA: A CONCEPTUAL FRAMEWORK FOR INTEGRATED, ADAPTIVE, SUSTAINABILITY-ORIENTED ENVIRONMENTAL DECISION MAKING AND GOVERNANCE .....	26
<b>3 CASE STUDY CONTEXT .....</b>	<b>29</b>
3.1 EA IN CANADA AND ONTARIO .....	29
3.2 MUNICIPAL CLASS EA .....	30
3.3 EA AND MASTER PLANS .....	31
3.4 LAND USE AND ENVIRONMENTAL PLANNING IN ONTARIO.....	32
3.4.1 <i>The Planning Act</i> .....	32
3.4.2 <i>The Provincial Policy Statement</i> .....	32
3.4.3 <i>Regional Government</i> .....	32
3.4.4 <i>The Ontario Municipal Board</i> .....	33
3.4.5 <i>Ontario's Conservation Authorities</i> .....	33
3.4.6 <i>York Region: Geographical Context</i> .....	33
3.5 THE ORM LANDFORM AND RELATED GOVERNANCE.....	35
3.5.1 <i>Physical and Biological Characteristics</i> .....	35
3.5.2 <i>Cultural Characteristics</i> .....	36
3.5.3 <i>History of ORM Land-Use Planning Governance</i> .....	37
3.5.4 <i>The ORMCA and ORMCP</i> .....	37
3.5.5 <i>The Greenbelt Act and Greenbelt Plan</i> .....	39
3.5.6 <i>The Places to Grow Act and Growth Plan for the Greater Golden Horseshoe</i> .....	40

3.6	HISTORY OF GROWTH MANAGEMENT AND SERVICING IN YORK REGION .....	41
<b>4</b>	<b>RESEARCH METHODS .....</b>	<b>43</b>
4.1	CASE STUDY RESEARCH.....	43
4.2	PARTICIPATORY ACTION RESEARCH .....	43
4.3	MULTIPLE RESEARCH METHODS .....	44
4.3.1	<i>Semi-Structured Interviews</i> .....	44
4.3.2	<i>Literature Reviews</i> .....	47
4.3.3	<i>Analysis of Relevant Government Policy Documents</i> .....	48
4.3.4	<i>Participant Observation</i> .....	48
<b>5</b>	<b>RESEARCH FINDINGS AND ANALYSIS.....</b>	<b>51</b>
5.1	INTRODUCTION .....	51
5.2	SEA-TYPE ACTIVITIES IN YORK REGION .....	51
5.2.1	<i>Provincial and Regional Planning—Early 1990s to 2006</i> .....	51
5.2.2	<i>EA and Construction of the 16th Avenue Trunk Sewer</i> .....	52
5.2.3	<i>19th Avenue Interceptor Sanitary Sewer EA and Collaboration with STORM</i> .....	54
5.2.4	<i>Development of Sustainability Principles to Guide EA Processes Within York Region</i> .....	54
5.2.5	<i>Organizational Changes to Coordinate Water, Wastewater and Transportation Master Planning Under the York Region Sustainability Strategy</i> .....	56
5.2.6	<i>Ongoing UYSS Individual EA</i> .....	57
5.2.7	<i>Champions of Sustainability and the Current Situation</i> .....	59
<b>6</b>	<b>IMPLICATIONS AND RECOMMENDATIONS FOR SEA PRACTICE AND THEORY .....</b>	<b>60</b>
6.1	IMPLICATIONS AND RECOMMENDATIONS FOR PRACTICE.....	60
6.2	IMPLICATIONS FOR THEORY .....	62
<b>7</b>	<b>CONCLUSIONS.....</b>	<b>64</b>
<b>8</b>	<b>REFERENCES .....</b>	<b>66</b>

## List of Tables

TABLE 1: EVOLUTION OF EA/SEA.....	9
TABLE 2: MCEA PLANNING AND DESIGN PROCESS .....	30
TABLE 3: INTERVIEWS CONDUCTED .....	45
TABLE 4: MEETINGS/WORKSHOPS THAT RESEARCH TEAM MEMBERS ORGANIZED/ATTENDED .....	49

## List of Figures

FIGURE 1: AREA OF STUDY .....	3
FIGURE 2: TWO BASIC APPROACHES TO SEA .....	11
FIGURE 3: TIERED DECISION MAKING .....	14
FIGURE 4: SEA AS A COMMUNICATION TOOL.....	16
FIGURE 5: CONCEPTUAL FRAMEWORK FOR SEA AS A VEHICLE FOR FOSTERING MORE INTEGRATED, ADAPTIVE, SUSTAINABILITY-ORIENTED ENVIRONMENTAL GOVERNANCE IN THE CONTEXT OF REGIONAL PLANNING AND DECISION MAKING .....	27
FIGURE 6: THE ORM AREA .....	35
FIGURE 7: THE GREENBELT PLAN AREA.....	40

## List of Boxes

BOX 1: SEA PERFORMANCE CRITERIA .....	12
BOX 2: THEMES FOR INTERVIEW ANALYSIS .....	47

## List of Abbreviations

CA	conservation authority
EA	environmental assessment
EAA	<i>Environmental Assessment Act</i> (Ontario)
EMO	environmental movement organization
ESA	environmentally sensitive area
GTA	Greater Toronto Area
IAIA	International Association for Impact Assessment
ISAC	Interceptor Sewer Advisory Committee
MCEA	Municipal Class Environmental Assessment
MMAH	Ontario Ministry of Municipal Affairs and Housing
MNR	Ontario Ministry of Natural Resources
MOE	Ontario Ministry of the Environment
MPIR	Ontario Ministry of Public Infrastructure Renewal
NEPA	<i>National Environmental Policy Act</i> (U.S.)
NGO	non-governmental organization
OMB	Ontario Municipal Board
ORM	Oak Ridges Moraine
ORMCA	<i>Oak Ridges Moraine Conservation Act</i> (Ontario)
ORMCP	Oak Ridges Moraine Conservation Plan
ORMTWC	Oak Ridges Moraine Technical Working Committee
PAR	Participatory Action Research
PPS	Provincial Policy Statement
SEA	strategic environmental assessment
STORM	Save the Oak Ridges Moraine Coalition
UYSS	Upper York Sewage Solutions
YDSS	York-Durham Sewage System

## **Abstract**

The purpose of this case-based, collaborative research project was to extend practical and theoretical understanding of strategic environmental assessment (SEA) to the related, but in practice poorly coordinated, processes of project-level environmental assessment (EA), master planning and regional land-use planning. The subject of the case study is the Regional Municipality of York, located immediately north of the City of Toronto in Ontario, Canada. A participatory action research approach, which included an extensive review of background literature, interviews with key informants, a review of policy documents, and participant observation, was used in this project to explore SEA in York Region.

The research findings indicate that SEA plays a unique role in the context of regional government, functioning as a tool for communication between EA practitioners, planners, decision makers and the general public. SEA is beneficial because it fosters transparent decision making; is a means of ensuring effective, “tiered” decision making; promotes a more integrated and adaptive view of regional decision making; and contributes to sustainability-oriented decision making on a regional scale.

The findings also reveal implications for the practice of EA, planning and SEA at a regional scale, as well as implications for SEA based on insights from collaborative planning and policy science. In the York Region case, an EA crisis led to the opening of a window of opportunity (“policy window”) that allowed regional staff to initiate innovative policy change.

## Acknowledgments

The research team acknowledges first and foremost the financial support of the Canadian Environmental Assessment Agency. We would also like to acknowledge the in-kind financial contributions from the Region of York. The generosity of the interviewees in freely sharing their knowledge and insights is greatly appreciated.

In particular, the research team would like to acknowledge the following people who contributed to the completion of this project: Bala Araniyasundaran (formerly Director of Capital Delivery, Water and Wastewater Branch, Region of York); Laura McDowell (formerly Manager of Engineering – YDSS, Region of York); Debbie Korolnek (formerly General Manager of Water and Wastewater, Region of York); John Waller (Director of Long Range and Strategic Planning, Region of York); Adrian Coombs (Senior Project Manager, Region of York); Hamid Hatami (formerly Manager, Water and Wastewater Planning, Region of York); Robb Ogilvie (Managing Partner, Ogilvie, Ogilvie & Company); and Fred Johnson (Principal, Enviroscope Consulting Services). Each of these individuals contributes daily to innovations in environmental planning, management and assessments.

## Executive Summary

The purpose of this case-based, collaborative research project was to extend practical and theoretical understanding of strategic environmental assessment (SEA) to the related, but in practice poorly coordinated, processes of project-level environmental assessment (EA), master planning and regional land-use planning. The subject of the case study is the Regional Municipality of York, located immediately north of the City of Toronto in Ontario, Canada. This research evolved from the involvement of our research team members in two planning and EA processes. The first was a complex land-use planning process dealing with the Oak Ridges Moraine (ORM) (extensive portions of the ORM Plan Area are located within the Region of York) that resulted in the passage of the *Oak Ridges Moraine Conservation Act* (ORMCA) in 2001 and Oak Ridges Moraine Conservation Plan (ORMCP) in 2002. The second involved the Region of York Municipal Class Environmental Assessment (MCEA) undertaken as part of the region's 1997 region-wide York-Durham Sewage System Master Plan. The controversy that resulted from this MCEA forced the region to improve its planning and EA processes. One of the region's initiatives to improve its EA processes involved regional staff contacting the non-governmental organization (NGO) Save the Oak Ridges Moraine Coalition (STORM) for assistance. STORM was the lead organization advocating for and participating in the planning process to improve planning and management on the ORM. The two organizations reached an agreement to work together on EA and planning issues to improve practices. This research project is the first project on which the two organizations have collaborated.

The report begins with a discussion of the background literature on SEA with reference to EA and sustainability assessment; land-use planning with a focus on collaborative planning theory; meaningful public engagement; governance; and a conceptual framework for integrated, adaptive, sustainability-oriented environmental decision making and governance. Contextual information follows on the EA process in Canada and Ontario, and municipal land-use planning in Ontario. The case study approach and our use of participatory action research and of multiple research methods in data gathering are then described. Discussion of our research findings and analysis, which is structured in terms of project EA, master planning and SEA-type activities carried out in York Region, follows and reflects the order in which they occurred. The implications with respect to and our recommendations for the practice and theory of EA in York Region and other jurisdictions are then presented.

Our research is relevant because it emerged from the practical experiences of individuals affiliated with municipal government, the private sector, civil society and academia, who have diverse professional and academic backgrounds in fields such as engineering, hydrogeology, geography and planning. Our findings indicate that all themes within the SEA portion of our conceptual framework (see Figure 6) relate to a degree to the York Region case. On the basis of our analysis of that case, we present eight recommendations for practice:

1. Better coordinate land-use planning (e.g., Ontario *Planning Act*, Provincial Policy Statement, ORMCP, *Places to Grow Act*) and EA processes (Ontario *Environmental*



*Assessment Act, Canadian Environmental Assessment Act).*

2. Establish appropriate contracting practices to avoid the emergence of an “accountability gap” between consultant/contractor and regional government.
3. Develop strategy-level sustainability visions and policies to set a context for plans, master plans and future project-level undertakings.
4. Actively promote tiering by extracting strategic and project-level direction from progressive land-use planning documents for use in master planning and project EA.
5. Improve transparency and meaningful public engagement in regional decision making.
6. Identify and be willing to take advantage of windows of opportunity (“policy windows”) to foster innovative, positive change.
7. Identify long-term champions to promote a corporate culture of continuous learning and experimentation.
8. Use SEA as a communication tool to better integrate EA and planning processes and to break down departmental silos.

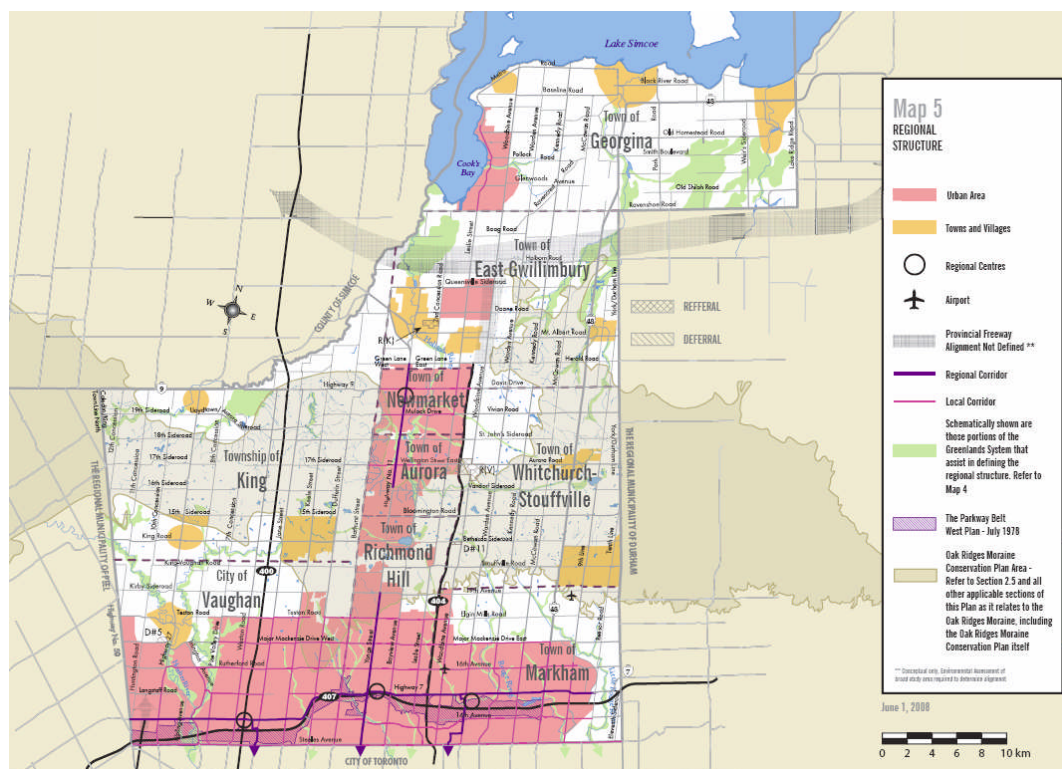
Our findings also point to three major implications for SEA theory:

1. SEA has a role as an ongoing communication tool as opposed to just as a discrete, formal assessment protocol.
2. Planning theory and practice, especially collaborative planning, can make significant contributions to SEA theory.
3. The policy science literature, including the notion of a “policy window,” can contribute to the further development of SEA as a communication tool by identifying opportunities to add the concept to the policy stream.

# 1 Introduction

The purpose of this case-based, collaborative research project was to extend practical and theoretical understanding of strategic environmental assessment (SEA) to the related, but in practice poorly coordinated, processes of project-level environmental assessment (EA), master planning and regional land-use planning. The subject of the case study is the Regional Municipality of York, located immediately north of the City of Toronto in Ontario, Canada (Figure 1). “Strategic environmental assessment” refers to the “environmental assessment (EA) of policies, plans and programmes (PPPs)” (Jones et al. 2005: 6).

Despite the apparent simplicity of SEA as a concept, implementation has been inconsistent as the complexity and subtleties of moving from the concept to practice become apparent. The literature has identified numerous advantages of SEA, but there are also many challenges to implementing EA principles at the broader, more complex planning, policy and program level. Several leading SEA researchers argue that SEA may perhaps be more usefully thought of as a communication tool meant to facilitate dialogue between decision makers, environmental assessors and the public rather than as a technical protocol, as is the case with traditional EA (Vicente and Partidário 2006).



**Figure 1: Area of study**

(Source: York Region 2008d)

This research evolved from the involvement of our research team members in two planning and EA processes. The first was a complex land-use planning process dealing with the Oak Ridges Moraine (ORM) that resulted in the passage of the *Oak Ridges*

*Moraine Conservation Act (ORMCA)* in 2001 and Oak Ridges Moraine Conservation Plan (ORMCP) in 2002 (see Section 3.4.6). The second involved a controversial Region of York Municipal Class Environmental Assessment (MCEA) undertaken as part of the region's 1997 York-Durham Sewage System Master Plan (York Region 2007b), that forced the region to improve its planning and EA processes (see Section 3.6).

One of the region's initiatives to improve its EA processes involved regional staff contacting the non-governmental organization (NGO) Save the Oak Ridges Moraine Coalition (STORM) for assistance. STORM was the lead organization advocating for and participating in the planning process to improve planning and management on the ORM. A memorandum of collaboration was created to "enhance collaboration between stakeholders concerned about the ORM and the Regional Municipality of York" to work cooperatively towards innovative solutions that "create a net positive benefit to the environment" for water and wastewater projects within the ORM Plan Area (Founding Partners Group 2006). This research project is the first project on which the two organizations have collaborated.

Our research addresses the Canadian Environmental Assessment Agency's priority area, SEA. The research is relevant because it emerged from the practical experiences of individuals affiliated with municipal government, the private sector, civil society and academia, who have diverse professional and academic backgrounds in fields such as engineering, hydrogeology, geography and planning. The results of this research project are expected to contribute to the theoretical and practical extension of both EA and land-use planning, and should be useful to other municipalities and jurisdictions with growth characteristics and legal responsibilities similar to those of York Region. Our results and analysis point to the importance of identifying opportunities for fundamental policy change and innovative collaboration with respect to EA that can foster the adaptive capacity of regional governance systems relating to the environment.

The report begins with a discussion of the background literature on SEA with reference to EA and sustainability assessment; land-use planning with a focus on collaborative planning theory; meaningful public engagement; governance; and a conceptual framework for integrated, adaptive, sustainability-oriented environmental decision making and governance. Contextual information follows on the EA process in Canada and Ontario, and municipal land-use planning in Ontario. The case study approach and our use of participatory action research and of multiple research methods in data gathering are then described. Discussion of our research findings and analysis, which is structured in terms of project EA, master planning and SEA-type activities carried out in York Region, follows and reflects the order in which they occurred. The implications with respect to and our recommendations for the practice and theory of EA in York Region and other jurisdictions are then presented.

## **2 Background to and Relevance of SEA: Review of Main Areas of Literature**

### **2.1 Introduction**

The goal of this research project was to extend practical and theoretical understanding of SEA to the related, but in practice poorly coordinated, processes of project-level EA, master planning and regional land-use planning. To address this goal, four areas of literature were explored to provide a basis for this research. The first two areas of literature, SEA and land-use planning, provide the theoretical and conceptual tools that support our critical evaluation of the processes of interest in the York Region case. The SEA section below covers the various definitions, principles, categories and stages of SEA, and the potential of SEA to address the limitations of project-level EA through tiered, transparent and integrated decision making and communication between EA and planning practitioners. The land-use planning section provides brief background information on the practice of land-use planning and collaborative planning theory.

The third area of literature explores meaningful public engagement, including barriers to public participation and best practices. Meaningful consultation should be a major component of both SEA and land-use planning processes. The fourth area of the literature review is governance. It is critical in terms of achieving positive changes in processes such as EA and planning, and our focus was on governance and the important roles played by multiple actors from government, the private sector and civil society. Figure 6, presented and described at the end of this background section, shows a conceptual framework that integrates these areas of literature in the context of our research.

Subsequent to our analysis, we reviewed additional literature, and the insights gained from it, specifically the concept of a “policy window” (Kingdon 2003), informed our discussion of the implications of our findings. Kingdon describes policy windows as opportunities for action on given initiatives that present themselves and stay open for only short periods of time. Policy windows are transitory opportunities during which the likelihood of adopting new policy is greater than usual (Solecki and Michaels 1994). The policy window concept emerged as relevant through our interviews with government agency respondents, NGOs and local residents. For our purposes, the concept of a policy window was useful for describing and reinterpreting relevant events that led to policy change in our case study. This concept is discussed in greater detail in Section 5.2.2.

### **2.2 SEA**

#### **2.2.1 Need for SEA: Overcoming Limitations of EA**

As previously mentioned, SEA refers to “the environmental assessment (EA) of policies, plans and programmes (PPPs)” (Jones et al. 2005: 6). If SEA is meant to be an extension of EA practice and principles at the planning, policy and program level, it is

critical to define what we mean by EA and provide a brief overview of the principles and stages of a generic EA process. EA has been defined as “the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made” (IAIA and IEA 1999). The EA process should be applied (IAIA and IEA 1999: 3):

- as early as possible in the planning and decision-making stages;
- to all proposals that may generate significant adverse effects or about which public concern is significant;
- to all biophysical and human factors potentially affected by development, including health, gender and culture, and cumulative effects;
- in a manner consistent with existing policies, plans and programs and the principles of sustainable development;
- in a manner that allows involvement of affected and interested parties in the decision-making process; and,
- in accordance with local, regional, national or international standards and regulatory requirements.

While EA processes have been developed and adapted to various contexts in countries around the globe at a variety of scales of implementation, the EA process entails several generic stages. They include the following (Noble 2006):

- project description
- screening
- scoping
- impact prediction and evaluation
- impact management
- review and decision making
- implementation, follow-up and monitoring
- public participation (throughout the process)

SEA has, at least in part, evolved out of a collective disillusionment with the capacity of project EA to result in sound environmental decision making (Dalal-Clayton and Sadler 2005; Fischer and Seaton 2002; Partidário 2000). In many cases, project-based EA has evolved into a proponent-driven, bureaucratic process that has compounded the inherent limitations of the project-based approach to assessing environmental impacts. SEA is intended to reinvigorate the EA movement by taking its worthwhile principles and re-embedding them in policy-making processes. The literature points to several interrelated limitations of project EA that SEA approaches are intended to address. These limitations are summarized below (adapted from Alshuwaikhat 2005; Gibson 2007; Partidário 2000):

- **Project EA is rushed and reactionary:** It is pushed by pragmatic and technocratic project approval demands and often examines already selected and even already designed undertakings.
- **Project EA is narrow in scope:** Small, incremental decisions happen in the absence of a systematic, sustainability-based assessment approach, resulting in the foreclosure of alternatives and a failure to address broader spatial, temporal scales

and cumulative impacts of individual projects.

- **Project EA is poorly integrated and lacks appropriate information:** Project EA has evolved into a technocratic, protocol-based process that is poorly integrated with broader planning, political and economic processes and that has come to require artificially elevated levels of certainty based on data, information and field studies that are inadequate.

The limitations of project-level EA point to broader issues that require the consideration of environmental and sustainability concerns at more strategic levels of decision making. SEA facilitates overcoming some of the weaknesses of project EA by anticipating impacts that can occur at the project level, increasing efficiency in decision making and reducing the burden of work for project EA (Fischer 1999). By strengthening the EA process, SEA has the potential to save time and reduce the costs involved.

## 2.2.2 Aims and Benefits of SEA

Researchers have argued that SEA can play a critical role in the consideration of cumulative effects, the need for transparency and public consultation on strategy-level issues, and advancing the sustainability agenda (Clark 2000; Fischer 1999; Gibson et al. 2005; Partidário 2000, 2003; Sadler and Verheem 1996; Thérivel and Partidário 1996; Wood, 2003). The general aims and benefits of SEA include the following (adapted from Caratti, Dalkmann and Jiliberto 2004; Dalal-Clayton and Sadler 2005; Fischer 2002b; Partidário 2000):

- helping to achieve sustainable development by promoting integration of environmental and development decision making
- identifying and assessing cumulative effects of large-scale impacts such as climate change
- strengthening and streamlining project EA by reducing the time and effort necessary to assess individual schemes
- avoiding the exclusion of options and opportunities that arise when assessment occurs at the project stage
- establishing an appropriate context for the EA of projects, including the pre-identification of issues and impacts that warrant detailed examination
- addressing the need for transparency and consultation on strategy-level issues

## 2.2.3 The Evolution of SEA: Definitions, Concepts, Principles and Practice

The earliest legislative reference to the concept of SEA was the U.S. *National Environmental Policy Act* (NEPA) of 1969 (Jones et al. 2005). The NEPA requires the assessment of the environmental impacts of “proposals for legislation and other major federal actions significantly affecting the quality of the human environment” (NEPA section 102[2][c]). One of the architects of the NEPA, Dr. Caldwell, stated that this provision was to be an “action-forcing” measure, intended to “reform and redirect federal policymaking” (Caldwell 2000). However, the NEPA approach for producing changes in the decision-making processes of the federal agencies had inherent limitations. In practice, policy and other strategic decisions were largely excluded from review, other than those relating to programmatic activities that could be grouped together (Dalal-

Clayton and Sadler 2005).

Wood and Djeddour (1992) observe that the term “strategic environmental assessment” first appeared in the second half of the 1980s. At that time, the understanding of that term did not differ largely from that of “project-based environmental assessment.” According to Fischer and Seaton (2002), SEA was originally used to describe the assessment of spatial and land-use policies, plans and programs above the project level. SEA has been referred to as a “second-generation process” (Sadler 1999)—one that moves EA principles “upstream” in the decision-making process.

Two key motivating factors have led to the development of SEA. First, SEA has emerged as a tool to address the concern that project EA may occur too late in the planning process to ensure that all the alternatives and impacts relevant to sustainable development goals are adequately considered (Jones et al. 2005; Lee and Walsh 1992; Wood and Djeddour 1992). Second, planning and policy analysis are increasingly driven by sustainable development concerns, and therefore SEA can be seen as a response to this trend.

While a growing number of jurisdictions have SEA-type processes and apply elements of SEA, few countries have established formal arrangements or legislative requirements for SEA (Dalal-Clayton and Sadler 2005). Canada has taken a leadership role in the development of strategic forms of impact assessment. Noble (2002: 5) notes that “to a certain degree Canada has been committed to assessing the environmental implications of policies, plans and programs since 1984; however, the expansion of EA to policies, plans and programs was not manifest in practice until 1990.” The current system of SEA at the federal level has been shaped by a number of influential developments dating back to the 1970s (Noble 2005). Some of these influential developments are as follows:

- the U.S Congress’s 1969 passing of the NEPA, mandating all federal agencies and departments to consider and assess the environmental effects of proposals for legislation and other major projects
- the 1973 Canadian Cabinet directive, established under the authority of the Governor-in-Council, to review the environmental effects of federal decisions
- the 1984 Environmental Assessment and Review Guidelines Order, which defined “proposal” as including “any initiative, undertaking or activity for which the Government of Canada has a decision-making responsibility (Noble 2002)
- the 1990 Canadian Cabinet directive on EA of policies, plans and programs
- the European Economic Community’s 1990 proposal for a directive on the EA of policies, plans and programs
- the 1999 Canadian Cabinet directive introducing implementation guidelines on EA of policies, plans and programs
- the European Commission’s 2001 publication of its SEA directive on the assessment of plans and programs (European Commission 2001)
- the 2004 amendment of the Canadian Cabinet directive on EAs of policies, plans and programs to require all federal departments and agencies to prepare a public statement of environmental effects whenever a full SEA has been conducted

(list adapted from: Partidário 2000; Jones et al. 2005; Noble 2005; Chaker et al. 2006)

By 2001, fewer than 20 countries had made formal provisions for the assessment of

policies, plans and programs (Jones et al. 2005; Sadler 2001). However, this figure has increased and will continue to increase due to the implementation of the European Commission's 2001 SEA directive, the World Bank's EA procedures initiating SEA practice in developing countries, the United Nations Economic Commission for Europe's SEA protocol and the Canadian Environmental Assessment Agency's Cabinet directive on the EA of policy, plan and program proposals.

## 2.2.4 The Evolving Concept and Practice of SEA: From Project EA Towards Sustainability Assessment

Despite the apparent simplicity of the concept of SEA, the continuous evolution of the concept and practice has resulted in a variety of definitions of SEA in the literature. As stated earlier, the earliest and most widely recognized definition is "the environmental assessment of policies, plans and programmes" offered by Thérivel and Partidário (1996: 3).

As Chaker et al. (2006: 17) recently documented, SEA has evolved into a tool "to safeguard critical resource and ecological functions and offset residual damage," as well as advancing "environmental accounting and auditing of natural capital loss and change" (Table 1). Partidário and Clark's definition (2000: 4) reflects the emergence of this new perspective on SEA:

SEA is a systematic on-going process for evaluating, at the earliest appropriate stage of publicly accountable decision making, the environmental quality, and consequences of alternative visions and development intentions incorporated in policy, planning, program initiatives, ensuring full integration of relevant biophysical, economic, social and political considerations.

**Table 1: Evolution of EA/SEA**

Paradigm/Level/Stage	Key Characteristics
1 <sup>st</sup> generation – project EA	Includes social, health and other impacts, cumulative effects and biodiversity
2 <sup>nd</sup> generation – SEA	Applies to the PPP and legislation
3 <sup>rd</sup> generation – assurance of environmental sustainability	Uses EA and SEA to safeguard critical resources and ecological functions and offset residual damage; includes environmental accounting and auditing of natural capital loss and change
Next generation – appraisal/assessment of sustainability	Includes integrated or full-cost assessment of the economic, environmental and social impacts of proposals

(Adapted from: Chaker et al. (2006)

Reflecting Chaker et al.'s (2006) "next generation" of EA and Haq's (2004) third trend in EA moving towards sustainability assessment, Stinchcombe and Gibson (2001: 344–45) define SEA as "a particular tool for analyses that contribute a sustainability component to existing decision making processes and, more ambitiously, as an approach to decision making at the strategic level that focuses on sustainability considerations." Gibson et al. (2005) and Gibson (2006b) have built on the concept of SEA and developed a practical approach for undertaking a sustainability assessment. This perspective of SEA especially and sustainability assessment represents an effort to



develop “more effectively comprehensive, farsighted, critical and integrated approaches to decision-making on important policies, plans, programs and projects” in order to “meet the challenge of providing decent livelihoods for all without wrecking the planet” (Gibson 2006b: 171).

The literature traces the evolving definition of the concept of SEA from simply an extension of EA principles from the project to the policy, plan and program level towards an integrated, comprehensive, sustainability-focused approach to environmental decision making and governance. The concept and a practical approach of sustainability assessment as the next generation of SEA as described by Gibson et al. (2005) is outlined in Section 2.2.6.3.

## **2.2.5 Categories and Principles of an SEA Framework**

Despite the apparent simplicity of the concept of extending EA principles from the project to the policy, plan and program levels, the literature documents multiple categories of SEA frameworks. These categorizations are options for implementation depending on the context. Partidário and Clark (2000: 7) maintain that

SEA must be absolutely tailor-made to the kind of decision at stake, and the nature of the decision-making process in place. If this is true for EA, it is even more true for SEA, as policy and planning decisions tend to be greatly intuitive, with less detailed information, as well as more incremental than decisions taken at project level.

Thus, having a range of possible SEA frameworks and flexibility in implementation strategies is appropriate, given the complexity and uncertainty associated with the policy, plan and program scale. As a result of the context-specific nature of SEA applications, categorization of any kind may seem at best arbitrary. This section provides a sense of the breadth of SEA forms for SEA researchers and practitioners.

Partidário and Clark (2000: 7) note that approaches to SEA generally exhibit elements that can be associated with either “top-down” (after policy or plan evaluation) or “bottom-up” (after project EA) approaches (Figure 2). The former approach adopts a policy or planning rationale using certain aspects of EA, such as the identification of need and options or alternatives for development, in the formation of policies and plans. The latter approach is a more literal extension of the practice of project EA using the protocols and methodologies of EA in the development of plans and programs. To date, the application of project-based approaches to policies has been relatively rare, if not non-existent (Partidário and Clark 2000).

**POLICY-BASED APPROACH**

Policy Development



SEA



Project Assessment

**PROJECT-BASED APPROACH**

**Figure 2: Two basic approaches to SEA**

(Source: Partidário and Clark 2000)

The literature points to three broad categories of SEA approaches that generally reflect the evolutionary stages of SEA development. These broad categories of SEA include the following (adapted from Dalal-Clayton and Sadler 2005; Vicente and Partidário 2006; Gibson 2007):

1. formal, protocol or procedure-based assessment processes of regional, sectoral or national plans, programs and policies
2. a communication tool to bridge EA practitioners', planners' and decision makers' perspectives through the systemic evaluation of plans, programs and policies incorporating principles of sustainability
3. a fundamental governance innovation or replacement for conventional decision-making approaches at the strategic level that extends to incorporate a broad range of sustainability criteria seeking multiple net gains

These broad categories provide a range or continuum of SEA approaches from bottom-up to top-down, formal to informal SEA mechanisms and from a specific analytical tool to a replacement for current governance structures. These approaches provide the researcher or practitioner with a sense of the possible breadth or scope of SEA applications.

It has been argued that regardless of the scale or perspective, it is crucial that SEA involve the application of a suite of SEA principles in policy, plan and program development (Partidário 2000; Partidário and Clark 2000). In 2002, the International Association for Impact Assessment (IAIA) developed a set of criteria based on an extensive international debate that took place in the early 1990s. Seventeen performance criteria, allocated to six main SEA procedural "themes," suggest that a "good-quality SEA process" is integrated, sustainability-oriented, focused, accountable, participative and iterative (Box 1). The performance criteria capture many of the broad principles for effective SEA practice laid out in the literature (e.g., Partidário 2000; Partidário and Clark 2000; Dalal-Clayton and Sadler 2005).

### Box 1: SEA Performance Criteria

The performance criteria for SEA are that it be:

#### ***Integrated***

- SEA ensures an appropriate environmental assessment of all strategic decisions relevant to the achievement of sustainable development.
- SEA addresses the interrelationships of biophysical, social and economic aspects.
- SEA is tiered to policies in relevant sectors and (transboundary) regions and, where appropriate, to project EA and decision making.

#### ***Sustainability-Led***

- SEA facilitates identification of development options and alternative proposals that are more sustainable.

#### ***Focused***

- SEA provides sufficient, reliable and usable information for development planning and decision making.
- SEA concentrates on the key issues of sustainable development.
- SEA is customized to the characteristics of the decision-making process.
- SEA is cost- and time-effective.

#### ***Accountable***

- SEA is the responsibility of the leading agencies, which make the strategic decisions.
- SEA is carried out with professionalism, rigour, fairness, impartiality and balance.
- SEA is subject to independent checks and verification.
- SEA documents and justifies how sustainability issues were taken into account in decision making.

#### ***Participative***

- SEA informs and involves interested and affected public and government bodies throughout the decision-making process.
- SEA explicitly addresses their inputs and concerns in documentation and decision making.
- SEA has a clear, easily understood information requirement and ensures sufficient access to all relevant information.

#### ***Iterative***

- SEA ensures availability of the assessment results early enough to influence the decision-making process and inspire future planning.
- SEA provides sufficient information on the actual impacts of implementing a strategic decision, to judge whether this decision should be amended and to provide a basis for future decisions.

Source: (IAIA 2002)

These principles provide SEA researchers and practitioners with a clear sense of SEA as an extension of EA principles into the policy, planning and program domain. While this broad suite of principles is intended to guide any SEA process, the literature also makes clear that the process needs to be context specific and fit the scale and structure of a given decision-making process.

## **2.2.6 SEA Issues and Implementation: Tiered Environmental Decision Making, SEA as a Communication Tool and Sustainability-Oriented Decision Making**

Given the complexity, uncertainty and breadth of issues at the strategic level (policy, plan and program), a different approach to assessment is required. Mintzberg (1994) argues that, in strategic approaches related to planning, the question is not about knowing what will happen in the future, but about knowing how to plan and guide actions that can help shape and build a desirable future. This is of primary importance for SEA.

The question has been raised whether SEA can effectively address the broad scope of multiple levels of decision-making (Partidário and Clark 2000: 9). This in turn raises the question of whether a single approach to SEA exists, given the broad scope of activities to which SEA can be applied (policy making, plan and program development). An alternative scenario depicts the potential benefit of linking broad strategic decisions with project EA by setting an environmentally sensitive strategic decision-making context for project-level decisions, and of enhancing communication across government departments.

The following sections describe the well-documented role of SEA in tiering environmental decision making (Caratti, Dalkmann and Jiliberto 2004; Dalal-Clayton and Sadler 2005; Fischer 2002a; Jones et al. 2005; Partidário 2000; Wood 1988; Wood and Djeddour 1992); as a communication tool to enable EA practitioners, planners and decision makers to understand each other's perspectives (Partidário 2000; Richardson 2005; Vicente and Partidário 2006); and as a driver of fundamental change in decision-making structures as EA evolves from project EA to SEA and moves towards some notion of sustainability assessment (Chaker et al. 2006). Thus, there is a wide array of potential options for, and questions surrounding, the extension of EA principles into the strategic levels of decision-making.

### **2.2.6.1 Tiered Environmental Decision Making**

One of the main benefits of implementing an SEA framework is to set a strategic context for project EA, thus making project EA more efficient, if not potentially unnecessary (Stinchcombe and Gibson 2001). Dalal-Clayton and Sadler (2005: 19) and Jones et al. (2005: 7) provide a useful example of how policy, plan and program SEAs set the context for project EA. As depicted in Figure 3, "there exists a tiered, forward planning process, which starts with the formulation of a policy at the upper level, followed by a plan at the second stage and by a programme at the end" (Jones et al. 2005: 6).

		Category of action and type of assessment (in brackets) Sectoral and multi-sectoral actions			
Level of Government	Land Use Plans (SEA)	Policies (SEA)	Plans (SEA)	Programmes (SEA)	Projects (EA)
National / Federal	National land use plan ↓	National transport policy	Long-term national roads plan	5-year road building programme	Construction of motorway section
		National economic policy			
Regional / State	Regional land use plan ↓		Regional Strategic Plan		
Sub-regional	Sub-regional land use plan ↓			Sub-regional investment programme	
Local	Local land use plan				Local infrastructure project

**Figure 3: Tiered decision making**

(Source: Jones et al. 2005: 7)

According to Dalal-Clayton and Sadler (2005: 18),

[Tiering] is frequently idealized as a hierarchical or tiered process of decision-making. But in reality it is quite different ... often, it is a more complex, iterative process in which the range of choice is gradually narrowed and most options are foreclosed by the project phase.

Therefore, when a policy, plan or program precedes and influences a project decision, the policy, plan or program and the project decision are supposed to be “tiered.” In practice, this works not only in a strict top-down manner (i.e., from policy to plan to program to project), but also as a “bottom-up” effect, in which lower-tier SEAs and project EAs can lead to an improved awareness of the limitations of prevailing policies, plans and programs (see, for example, Hildén, Furman and Kaljonen 2004).

In a review of the literature, Arts, Tomlinson and Voogt (2005) assert that tiering is assumed to minimize various limitations of EA and has the following benefits:

- prevention of the foreclosure of assessing important environmental issues
- better focusing of EAs (through scoping of issues, time and geographical area), type of alternatives and impacts assessed, and abstract level of analysis (e.g., broad methods, expert opinions vs. advanced quantitative and detailed methods)
- gains in efficiency of SEA or EA (e.g., indication of major issues that need (or do not need) further elaboration; guidelines for subsequent EAs) when it is done at higher rather than at lower levels
- better fit with the ongoing nature of decision-making and planning processes by

tiering of EAs

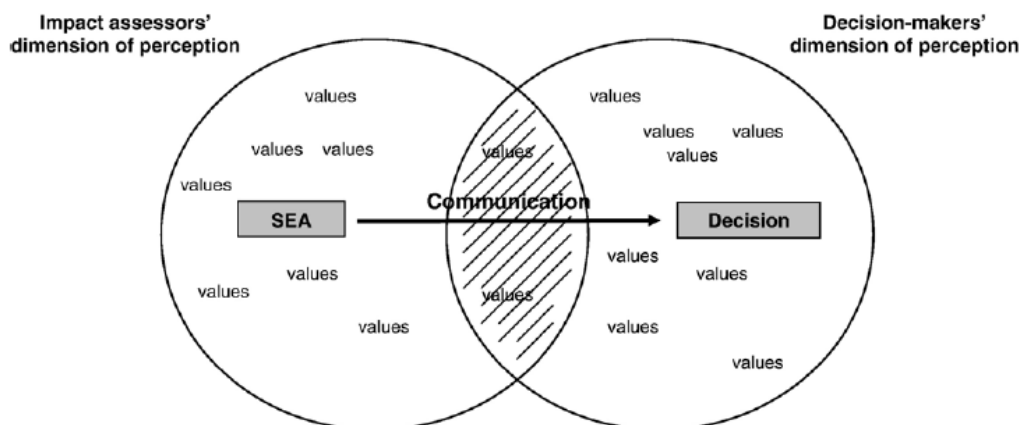
- improvement of plans and projects developed and implemented

Put differently, in traditional project EA, “by the time an analyst is looking at ‘alternative routes or locations’ many decisions have foreclosed options. This approach is entirely too late to discuss alternative means of providing transport or energy, frustrates the public, and has too little influence” (Partidário and Clark 2000: 21). SEA allows for options or alternatives that are often beyond the scope of project EA. SEA can result in a broader, more systemic suite of alternatives considered at plan, policy and program levels. This provides a more comprehensive approach to addressing environmental concerns and making project-level EA more efficient or even unnecessary. For example, a project-level question regarding whether a highway will have impacts on wildlife movement might be avoided by the strategy-level question of whether the need for the highway can be addressed through the construction of a light rail connection or another form of public transit. Thus, in terms of SEA practice, tiering ideally would indicate “the extent to which SEA is organized hierarchically, with one level of assessment informing the next level down (through to project EA)” (Jones et al. 2005: 280). As mentioned previously, a lower level can also trigger the necessity to address issues at higher levels.

While most of the SEA literature mentions tiering, inattention to the key role that tiering must play in SEA practice remains a problem (R. B. Gibson, personal communication). The literature highlights the potential advantages of SEA making Individual EAs more efficient and sometimes unnecessary. SEA has the potential to not only set individual projects in the context of broader policy decisions, but also to “set the terms of reference for a resulting EA and assist in its scoping” (Jones et al. 2005: 32). An SEA of a land-use plan or master servicing plan could also outline the process or protocol for all subsequent project EAs, effectively changing the way a jurisdiction makes project-level decisions (R. B. Gibson, personal communication).

#### **2.2.6.2 SEA as a Communication Tool**

As previously noted, in some contexts SEA may be more usefully considered to be a communication tool rather than a technical protocol (Partidário 2000; Richardson 2005; Vicente and Partidário 2006). Given the diversity of perspectives involved in environmental decision making, any tool that can provide for more effective communication, even within a given agency, would be a useful contribution. Vicente and Partidário (2006) describe the valuable role SEA can play in providing a means for impact assessors and decision makers to share perceptions of a given policy problem and to develop a shared solution (Figure 4).



**Figure 4: SEA as a communication tool**

(Source: Vicente and Partidário 2006)

Vicente and Partidário maintain that “different values related to the perception of a problem can, if made clear, help to reveal the common ground between impact assessors and decision-makers and consequently contribute to the shared acceptance of a given solution.” These authors note the role that “SEA can play in bridging problem perceptions with the development of solutions. In doing this, SEA must go beyond the simple account of facts, which means embarking in the socio-political dimension of the problem.” The authors conclude that this mediating role of SEA could enhance the following:

- integration of the multiple visions of the problem, and establishment of improved communication links
- guidance on the communication strategies to enhance the social relevance of technical and scientific knowledge
- an adjustment among decision makers—at the level of their values and environmental attitude—of their perception of reality and therefore their willingness to accept necessary actions for environmental reasons
- dialogue between impact assessors and decision makers that stimulates constructive collaboration and agreement about common meanings

Thus, in the context of SEA implementation, an SEA process would be an effective communication forum if it creates “an arena for mediation between strategic partners, where knowledge is shaped by negotiations and tensions between positions, and by the need to secure a working consensus” (Richardson 2005: 355).

Tiering and SEA as a communication tool point to the continuous evolution of project EA to SEA towards a fundamental change in environmental decision making that focuses directly on efforts to achieve some form of sustainability. As Chaker et al. (2006) indicate, the next generation in the evolution of EA is sustainability appraisal, or sustainability assessment. The next section briefly outlines this emerging approach.

### **2.2.6.3 Sustainability-Oriented Decision Making**

“Sustainable development” was originally defined by the Brundtland Commission (1987) as development that “meets the needs of the present generation without compromising the ability of future generation to meet their own needs.” Gibson et al. (2005) argue that the concept of sustainability has emerged as:

- a critique of and response to decision-making practices and results that failed consistently because the interconnections among key factors were not recognized
- a set of principles implying positive objectives
- a focus for strategies for change

Sustainability-oriented assessment and decision making (Gibson 2005) represent a fundamental shift in policy making that takes sustainability as its primary decision-making criterion. It is an “integrative process that can act as a framework for better decision-making on all undertakings—policies, plans and programmes as well as physical undertakings—that may have lasting effects” (Gibson 2006a: 260). This type of sustainability appraisal or assessment has been applied around the world, from Hong Kong (HKSDU 2002) to the United Kingdom (UK ODPM 2005) and even here in Canada in the context of the Voisey’s Bay nickel mine on the north Labrador coast (Gibson 2002). Sustainability assessment builds on several key aspects of SEA, including broader conceptual, spatial and temporal scales; tiering of decision making (i.e., project level to policy level); and transparency of decision making. SEA is a critical step in moving towards a more sustainability-oriented approach to environmental decision making. In this regard, Gibson et al. (2005) and Gibson (2006b) provide a set of core criteria and a practical approach to implementing a sustainability assessment framework.

### **2.2.6.4 Iterative and Adaptive Management and Decision Making**

Because SEA deals with a range of mixed forces, operating on many fronts, dealing with different societal values and perspectives, and high levels of uncertainty in terms of expected outcomes (Partidário 2000), it requires flexibility and adaptability to different types of application contexts, as well as to different tiers of decision making. As Noble (2005) argues, the scope of SEA broadens as SEA moves upstream from programs to plans to policies. This means that SEA must be designed as a sufficiently flexible and adaptable tool, built upon core elements to ensure that it is effectively responsive, while based on minimum administrative procedures adapted to the formal policies, plans and programs process to which SEA applies (Partidário 2000).

C. S. Holling has been instrumental in the creation and development of adaptive management. His 1978 work has provided a process “to cope with the uncertain and the unexpected. How, in short, to plan in the face of the unknown” (Holling 1978: 7). Holling described adaptive environmental management as “an interactive process using techniques that not only reduce uncertainty but also benefit from it. The goal is to develop more resilient policies.” More recently, Holling (1995: 30) has described an adaptive management approach as requiring “flexible, diverse, and redundant regulation, monitoring that leads to corrective responses, and experimental probing of the continually changing reality of the external world.” The implications of an adaptive



approach to management and decision making are further explored in Gunderson and Holling's book *Panarchy: Understanding Transformations in Human and Natural Systems* (2002), in which the authors conclude that new and innovative policies may eventually lead to myopic and rigid institutions meant to uphold and defend the status quo and, therefore, that constant evaluation, adjustment and learning are required.

In the context of planning, Connick and Innes (2003) argue that a mechanistic view assumes a level of predictability, predicated on adequate information and expertise that will lead to policies, programs and regulations to meet social objectives and produce desired outcomes. These authors assert that the assumptions embedded in a mechanistic view of planning and governance systems are a poor match with reality (Connick and Innes 2003). Therefore, as SEA is meant to address broad, abstract and complex policy issues, it requires an adaptive, iterative approach that can foster organizational learning and adaptive capacity (Armitage 2005).

## **2.3 Land-Use Planning**

Land-use planning is "the development of regulatory, developmental and conservation strategies for land, taking into account the interactions between land; or, more broadly, the built and physical, social and cultural characteristics, and their institutions, norms, and values" (Alexander 1992). The overall goals of conventional land-use planning are to protect landowners from incompatible neighbouring land uses, maintain property values and protect certain resources identified as important to the public good, such as farmland, aggregates, and cultural and natural heritage. Land-use planning ranges from general comprehensive planning or policy development to site-specific planning or process planning.

Among the instruments available to control land development are the official plan, secondary plan, plan of subdivision, zoning bylaw, development control permit and site plan control (Cullingworth 1987; Hale and Bowman 1986). These instruments can play important roles in terms of a tiered approach to decision making, moving from broad policy development through site-specific development control.

### **2.3.1 Planning for Environmentally Sensitive Areas, Natural Heritage and Water**

Within the context of land-use planning, an approach to dealing with lands of environmental value emerged in southern Ontario. Whitelaw and Eagles (2007) detail this process. Land-use planning processes for environmentally sensitive areas (ESAs) were first developed in the Region of Waterloo, Ontario, in the early 1970s. ESA planning reduced natural heritage loss through the application of tools available in Ontario's *Planning Act* (e.g., official plans, secondary plans, plans of subdivision). The reorganization of some county governments into city-centred, regional governments during the late 1960s and early 1970s provided the opportunity for new initiatives in planning.

One idea involved designating ESAs in official regional land-use plans to provide limited control over development through regulation without the need for municipal purchase (Eagles 1981; Hilts 1983). ESAs include natural landscapes that provide vital ecological

functions or contain features such as aquifer recharge areas; headwaters; unusual plants, wildlife or landforms; habitats for breeding or overwintering animals; rare or endangered species; and combinations of habitat and landforms of value for scientific research or conservation (Eagles 1981).

There are two main policy provisions of ESA planning. First, the proponent of any land-use change must conduct an environmental impact study, following guidelines set out in the official plan, to determine the sensitivity of the designated area to any proposed changes. Second, the proponent must work with the municipality to achieve a plan that attempts to protect the designated area. If protection is not possible, then the landowner can apply for an official plan amendment, which requires public participation (Eagles 1981). Gains in environmental protection were made through ESA planning across Ontario throughout the 1970s and 1980s (Gosselin 2004; Krause, Veale and Murray 2001). Nevertheless, the approach could not fully protect regional natural heritage systems that extended over many municipalities, such as the one that came to be recognized along the ORM.

The need to address regional natural heritage protection initiated concern among the public and environmentalists in the late 1980s. This led to the emergence of regional environmental land-use planning for areas including the ORM and the broader Greenbelt in south-central Ontario (MMAH 2009). In 2002 the provincial government released the ORMCP as a conservation-based policy framework regulated by legislation, and in 2005 released the Greenbelt Plan, resulting in the protection of over 720,000 hectares. These processes led to further evolution of the approach to protection of valuable natural areas. The processes resulted in the delineation of a natural heritage system for the ORM that included designation of long, wide conservation corridors on private lands, which were based on conservation biology principles and regulated through land-use planning legislation similar to provisions used for ESA planning (Whitelaw and Eagles 2007). The difference was the scope of the protected lands and the basis for their protection—that is, the science behind conservation biology.

Regional environmental planning initiatives also addressed water issues. It is clear from the ORM planning processes and outcomes that new approaches emerged to water planning and management. These new approaches are based on advances in ecosystem science, watershed planning and management, adaptive environmental management, and improved links between water science and land-use planning. Examples include the use of water budgets, wellhead protection, improved features mapping, and associated setback and buffer requirements. Collectively, the water provisions of the ORMCP provide a comprehensive set of procedures that are used to evaluate and protect significant water resources and are being used to argue for updating of older environmental land-use plans, such as the Niagara Escarpment Plan (Whitelaw and Hamilton 2008).

### **2.3.2 Collaborative Planning**

Collaborative planning is a key component of many land-use, resource management and to a lesser degree EA processes. These rational processes appear to use collaboration, especially during policy development cycles. The theory of collaborative planning has its roots in the social learning tradition. Two main theoretical foundations are used to explain collaborative planning. The first is from Habermas's theory of

communicative action (Tewdwr-Jones and Allmendinger 1998). The role of language is central to Habermas's theory, in particular, the search for undistorted communication that will allow for consensus and action. Once this undistorted communication is achieved, power and self-interest may be neutralized (Tewdwr-Jones and Allmendinger 1998).

Communicative action requires interpersonal relations between at least two participants and is designed to reach common understanding through agreement or consensus on a future strategy or action.

The second theoretical foundation is based on the work of Healey (1997, 1998, 2003). She indicates that the foundation for her thinking is the structuration theory of Anthony Giddens (1984), specifically "the continual interaction between, and mutual constitution of, 'structure and agency' ..." (Healey 2003: 106). Planning is seen as involving "some interactive relation and some kind of governance process" (Healey 2003: 107). The view is that planning is shaped by wider economic, social and environmental forces that provide structure (Healey 2003).

Collaborative processes can be transformative on the basis of *human agency*. Healey's work is informed by the hypothesis (Healey 1998: 1535) that

the development of governance cultures in which collaborative collective action is possible will be more likely to resist forces leading to economic exploitation of people and places, to limit environmental degradation and to maximize the possibilities of human flourishing in sustainable environmental relations, than cultures which are dominated by individualist competitive strategies.

Collaborative planning is an interactive partnership among government, interest groups, major sectors of the community and the public, all identified as stakeholders, that work towards consensus on three main phases of any planning issue—problem setting, direction setting and implementation (Margerum 2002). The basic idea of communicative rationality is that emancipatory knowledge (i.e., knowledge that empowers all participants to improve their life circumstances) can be achieved through dialogue that engages people with differing interests with respect to a task or problem. For dialogue to produce emancipatory knowledge, the stakeholders must be equally informed, listened to and respected, and none can be accorded more power than others to speak or make decisions (Innes and Booher 1999: 18).

Collaborative planning is also described as a longer term process with stakeholder groups as permanent forums (Margerum 2002). Some urban governments have begun to involve the private and civil society sectors in planning efforts, which has led to a diffusion of governance power and responsibility. The result is a blurring of boundaries between public and private, and state, market and community. Healey (1998: 1536) sets out five elements for achieving collaborative planning:

1. integrative place making that breaks down silos or "sectoral separation into different policy fields"
2. collaboration in policy making through "a mingling of formal politics with pressure groups, citizens groups, business, and environmental groups"
3. inclusive stakeholder involvement leading to mutual learning and consensus building
4. use of local or practical knowledge, "the mixture of knowledge built up through practical experience and the frames of reference people use to filter and give meaning to that experience"
5. building relational resources "or a context within which there is sufficient

appreciation, trust, and communicative skill for different stakeholders to find their 'voice' and 'listen' to each other"

Healey (1997: 312) indicates that collaborative planning

has the capacity to assist the task of relational capacity-building by its role in informing political communities about the range of stakeholders and about how they like to discuss issues; by its role in helping to shape arenas where stakeholders can meet; and by helping those involved work out what it means to build new collective ways of thinking and acting; to re-frame and re-structure their ways of proceeding.

Frame, Gunton and Day (2004: 59–60) suggest that collaborative planning is an

effective means of resolving environmental conflict and produces significant additional benefits such as improved stakeholder relations, skills, and knowledge ... [that] agreements produced from collaborative planning are also easier to implement and less likely to generate opposition ... [because] participants ... can develop shared intellectual capital including agreement on data or analysis, definitions of a problem or objective, and mutual understanding of each other's interests.

Significant challenges are associated with collaborative processes. These include overcoming divergent goals; establishing trust, goodwill and mutual respect; addressing the tendency for incremental change due to the need for compromise; securing the required resources; ensuring legitimacy; building the required capacity; and ensuring monitoring and evaluation (Diduck 2004; Innes and Booher 1999; Takahashi and Smutny 2001). Many of these challenges are also a focus of critical planning theorists.

The role of the planner in collaborative planning is one of facilitator or critical friend, "whose primary task is to deal with misinformation, the source of communicative distortion" (McGuirk 2001: 198).

## **2.4 *Meaningful Public Engagement***

### **2.4.1 Barriers to Public Participation**

People may choose not to take part in EA and land-use planning processes for many reasons. Sometimes they are as simple as character traits, such as shyness, apathy or a lack of public speaking skills (Diduck and Sinclair 2002). Lack of time as a result of social and work pressures may also affect willingness to participate (Diduck and Sinclair 2002; Fitzpatrick and Sinclair 2003). Citizens, therefore, often rely on others to represent their interests, or simply trust their government to oversee the EA process effectively (Diduck and Sinclair 2002). Intimidation factors also play a role in deterring people from participating, for example, because of concern that they may lack either the understanding of the EA process and its impacts, or the necessary knowledge to challenge "experts" (Diduck and Sinclair 2002). A gap appears to exist between what the public knows and what experts know.

This gap in information is one of the structural barriers to public participation (Diduck and Sinclair 2002). The problem is exacerbated by the fact that information is often either inaccessible, incomplete or of low quality (Canadian Environmental Assessment Agency 2001; Diduck and Sinclair 2002; Webler, Tuler and Krueger 2001). Other barriers to meaningful public engagement are the technical nature of the information provided (Sinclair and Diduck 2001, in Diduck and Sinclair 2002; Diduck and Sinclair

2002; Fitzpatrick and Sinclair 2003; Doelle and Sinclair 2006); a perceived power imbalance between the participants and proponents, and the exclusion of public participation during the early scoping stage of the EA; and lack of public funding (Diduck and Sinclair 2002; Fitzpatrick and Sinclair 2003; Doelle and Sinclair 2006). When these barriers exist, they lead to a perception that public input will have little effect on the outcome of the EA (Diduck and Sinclair 2002). Conversely, when members of the public believe that they are not directly affected by a development, they may delegate their participation to others whom they perceive as sharing their views (Fitzpatrick and Sinclair 2003).

From the proponent's perspective, EAs are also not necessarily seen as effective tools, but instead as "red tape" to cut through (Doelle and Sinclair 2006). Rather than being valued for enhancing the process, public participation is often seen as a problem that needs to be avoided and is, therefore, included only late in the process, when the government and proponent are averse to new or alternative options (Doelle and Sinclair 2006).

## **2.4.2 Best Practices: Public Participation in EA/SEA**

A number of case studies have examined both the successes and failures of EA processes. Using the results from these case studies, we have established a list of best practices for incorporating public participation into EA, including (1) early and fair timing of participation, (2) a democratic and fair process, (3) access to knowledge, technical issues and funding, (4) reduction of power imbalances, and (5) dialogue and social learning (i.e., learning that occurs within groups or organizations).

### **2.4.2.1 Timing of Participation**

Canadian EA legislation does not require public participation in EA until late in the process, so by the time government officials in charge of overseeing an EA become involved, the important planning and design phase has already occurred (Doelle and Sinclair 2006). Early public participation in the process is left to the discretion of the proponent and rarely occurs (Sinclair and Diduck 2000, in Bond, Palerm and Haigh 2004), despite the fact that including earlier and ongoing participation is essential to an effective EA (Bond, Palerm and Haigh 2004; Canadian Environmental Assessment Agency 2001; Stewart and Sinclair 2007). Succeeding in having public participation early in the process appears to be a result of proponents being more open and willing to change their original plans when ideas are presented at the beginning of the process, rather than at the end (Doelle and Sinclair 2006). As Doelle and Sinclair (2006) indicate, consultation at the beginning of the process, contrary to conventional thought, can save time. Early public engagement invites meaningful involvement in understanding environmental sustainability and community needs (Doelle and Sinclair 2006).

### **2.4.2.2 Democratic and Fair Process**

To be more democratic, EA processes should include better physical access to meetings, which could mean changing the location of meetings to facilitate participation from different neighbourhoods, as well as better access to decision makers (Webler and

Tuler 2000). The cornerstone of the democratic process as it relates to EA, however, is the need to use consensus when deciding on issues (Webler and Tuler 2000; Webler, Tuler and Krueger 2001; Barabas 2004). Consensus satisfies Abelson et al.'s (2003) goal of equally distributing opportunities to participants so that they can contribute meaningfully to the process. As a caveat, however, Diduck and Sinclair (2006) note that while consensus is crucial, environmental sustainability is paramount in an EA; therefore, the consensus must also contribute positively to environmental sustainability.

There are many different ideas of what constitutes a fair process, but typically it is a process underpinned by transparency, respect, open-mindedness, honesty, understanding, trust, integrity and accountability (Webler and Tuler 2000). While transparency is seen to be one of the most important determinants of success in public engagement (Webler and Tuler 2000; Webler, Tuler and Krueger 2001; Bond, Palerm and Haigh 2004; Stewart and Sinclair 2007), other issues, such as conflict management and communication are also important elements of a fair process.

Ensuring that the process manages conflict well is explicitly identified in the literature as contributing to successful EAs (Poncelat 2001; Webler, Tuler and Krueger 2001). Also important is creating an atmosphere fostering respectful communication that encourages people to be better listeners and communicators (Poncelat 2001; Stewart and Sinclair 2007). More specifically, ground rules should be set to encourage participants to talk to each other, rather than at each other, express their ideas in an open and honest way and be open to the ideas of other people (Webler and Tuler 2000; Poncelat 2001). Establishing guidelines to encourage constructive communication is crucial (Webler and Tuler 2000; Doelle and Sinclair 2006). Communication between the public and decision makers is important (Abelson et al. 2003; Bond, Palerm and Haigh 2004; Webler and Tuler 2000).

In summary, many factors relate to fostering a fair and democratic process. Access to meetings and seeking consensus that contributes to environmental sustainability are important to a democratic process, while transparency and conflict management with an eye to collaborative problem solving are cornerstones to a fair process. To ensure a fair and democratic process, sharing knowledge and building capacity with public participants are essential.

#### ***2.4.2.3 Knowledge, Technical Issues and Funding***

To establish two-way communication between the public and decision makers, people must be appropriately informed. They need access to necessary information and knowledge to develop informed opinions and to make their input and subsequent communication meaningful (Webler and Tuler 2000; Fitzpatrick and Sinclair 2003; Bond, Palerm and Haigh 2004; Stewart and Sinclair 2007). Having access to material information enables participants in the EA process to obtain the knowledge needed to examine the validity of claims other people make, thereby improving the discourse within the EA (Webler and Tuler 2000; Bond, Palerm and Haigh 2004).

Participants often feel that information associated with EAs is esoteric and overly technical (Fitzpatrick and Sinclair 2003). This presents an interesting dilemma: scientifically complicated data needs to be addressed in the EA process but must be presented in a way that public participants—who may not have the necessary technical knowledge—can understand. Sometimes it is not the information itself that is difficult to

understand, but rather the EA process that is confusing. A well-developed EA should, therefore, provide assistance to participants in explaining technical and process issues they might have difficulty understanding.

Capacity building and funding are important considerations in helping public participants better understand issues (Fitzpatrick and Sinclair 2003) and are effective in both facilitating an understanding of difficult issues and ensuring that the process is legitimate and worthwhile (Fitzpatrick and Sinclair 2003; Stewart and Sinclair 2007). Citizens and organizations provided with adequate funding are able to undertake their own research, which in turn can lead to greater understanding of the potential repercussions of the undertaking.

While the traditional interpretation of knowledge is important during the EA process, the values of participants must also be understood and taken into account (Webler and Tuler 2000). Webler, Tuler and Krueger (2001) contend that facts need to be compared against local opinions. At the heart of the argument is the notion that regional solutions take precedence over one-size-fits-all solutions, and each EA should take local circumstances and values into consideration. The EA process may be improved by incorporating and equally considering local values to complement other forms of knowledge.

#### ***2.4.2.4 Reductions in Power Imbalances***

Sharing power in the EA process is as important as sharing information and knowledge. The more equally that participants and proponents share power, the more effective the process will be. As a caveat, however, Abelson et al. (2003) note that a power balance will never be perfect because, as participants gain knowledge, their thought processes could more closely parallel those of experts and thus, may not reflect the views of the general public. Nonetheless, with regard to power, a goal of EAs should always be to “level the playing field” and promote equal participation among all participants (Rocha 1997; Webler and Tuler 2000; Webler, Tuler and Krueger 2001; Abelson et al. 2003; Bond, Palerm and Haigh 2004). Webler and Tuler (2000) indicate that participants understand that the process cannot be “purely egalitarian” and seem willing to trust those in charge to make decisions, as long as that trust has been earned through a democratic and fair process. One way to prevent hierarchical power in the EA process is by adopting social learning techniques that encourage dialogue.

#### ***2.4.2.5 Dialogue and Social Learning***

The quality of discourse is an important element in public participation. A central idea is the need to allow a free-flowing exchange of ideas, to debate and deliberate the issues, and to provide a forum where learning can occur (Webler and Tuler 2000; Webler, Tuler and Krueger 2001; Barabas 2004; Stewart and Sinclair 2007). Addressing issues through questions and answers is not nearly as effective as addressing them through discussion (Fitzpatrick and Sinclair 2003). Discussion provides the opportunity to make, challenge and defend statements (Webler and Tuler 2000). The idea is that participants will communicate in an attempt to decide on the best arguments through consensus (Palerm 2000). Ideally, discussion promotes the sharing of views, the ability to create innovative options and to encourage socially acceptable, rather than self-interested

options, and increases the likelihood that the public will support the end product as a result of considering everyone's input (Fearon 1998, in Abelson et al. 2003).

Barabas (2004) insists that while discussion is acceptable, it is not as effective as deliberation. He defines "deliberation" as "an enlightened and open-minded search for consensus amid diverse participants" (p. 699). He asserts that deliberation differs from discussion because the former encourages participants to be open-minded and to be flexible about any previously held views—thereby establishing the possibility to create "enlightened judgments." Opinions formed during deliberation are also unique. Barabas (2004) claims that because citizens are required to maintain an open mind throughout the process, they are willing to consider other people's opinions. While disagreements are inherent in the process, through deliberation participants are able to learn (Barabas 2004).

Poncelet (2001) postulates another form of communication within the EA process: multi-stakeholder partnerships. This type of communication encourages a diverse group of participants to interact with and examine one another's perspectives. These partnerships differ from other conventional forms of communication in that they are not used to address entrenched, well-defined conflict, but rather are used earlier in the process, and as such are regarded as proactive in nature. The goal of these partnerships is similar to that of other forms of public participation, in that through the process innovative options and creative solutions are produced (Poncelet 2001).

Both Barabas (2004) and Poncelet (2001) emphasize using communication to promote discourse that can sway opinions and views; however, as Palerm (2000) notes, to create change, social learning must be considered as a tool. "Social learning" is defined as a process whereby individuals revise their knowledge and update their perspective on the basis of interaction with others in a group setting. Social learning can occur through either interpersonal or "intra-personal" learning. Interpersonal learning happens through being exposed to new ideas (Poncelet 2001). At the intra-personal level, changes in how participants view themselves may be affected by social learning.

Social learning cannot be effective unless a wide range of views is represented during the process. For this reason, taking time and cost into consideration, those leading the EA process must do their best to ensure the participation of as diverse a group of interested parties as is feasible (Poncelet 2001; Webler, Tuler and Krueger 2001; Bond, Palerm and Haigh 2004; Doelle and Sinclair 2006; Stewart and Sinclair 2007). In so doing, the proponent will increase the likelihood of interpersonal social learning (Poncelet 2001).

## **2.5 Governance**

Governance systems in the context of this research involve a range of organizations that include government, civil society and the private sector, all active in the development and implementation of EA and land-use planning policy. Whether the governance literature refers to "approaches to elements of theory" or "conceptual themes," it points to a set of key characteristics that define the term. Stoker (1998) described five interrelated propositions of governance theory:

1. reference to a complex set of institutions
2. identification of the blurring of boundaries and responsibilities for tackling social and



economic issues

3. identification of the power dependence involved in collective action
4. the importance of autonomous self-governing networks of actors
5. recognition of the capacity to get things done which does not rest exclusively on the power of government to command or use its authority

Rhodes (1996) discusses six meanings of the term “governance”:

1. minimal state
2. corporate governance
3. the new public management
4. “good governance”
5. socio-cybernetic system
6. self-organizing networks

Rosenau (1995) describes conceptual themes of governance, which include command and control, interdependence and proliferation, disaggregation and innovation, and emergence and evolution.

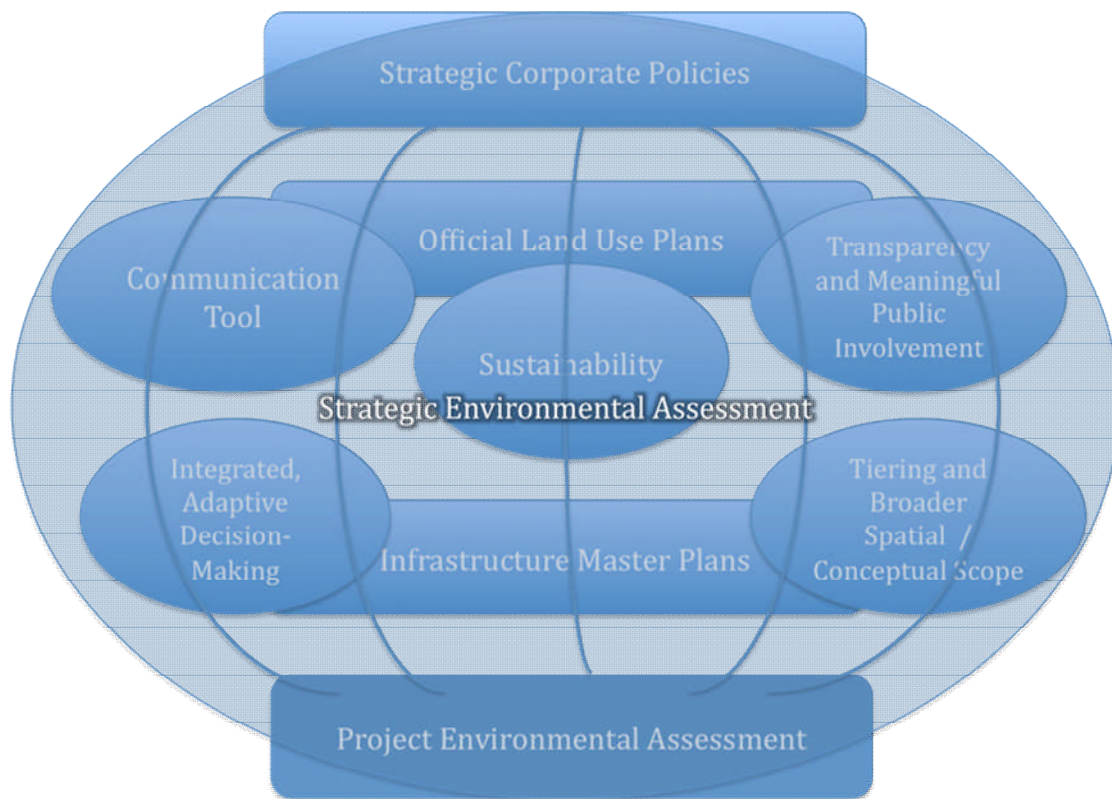
Government has become less prominent, while civil society and the private sector have become more important over the last 50 years (Painter 2001: 317). Francis (1988, 2003) developed a governance framework that is useful in the context of our research. A domain is “a social space as perceived and defined by the actors who share it” (Francis 2003: 235). Social spaces can include geographic spaces (e.g., a municipality, national park, watershed), an economic sector (e.g., mining, energy production) or an issue (e.g., water, land, air). A regime includes the rules, such as laws, regulations and customs, that regulate interactions between the actors involved. As domains emerge and the numbers of actors that populate the domain grow, the scale of their actions and mutual interdependence increases. Changes in the rules can occur as actors respond to one another’s actions. This change or “self organization of the domain starts when certain players strive to structure the domain by forming alliances or mergers, or negotiating certain basic mutually agreed upon rules” (Francis 2003: 235).

Francis’s framework captures how individuals and organizations steer complex self-organizing systems such as land-use planning. Understanding the self-organizing nature of land-use governance may help actors (practitioners, researchers, environmental movement organizations [EMOs]) in their efforts to change rules. This framework was used to explore the evolution of regional environmental land-use planning in southern Ontario (Whitelaw et al. 2008) and to evaluate the York Region case study. The interaction between government, the private sector and NGOs was explored in the context of the evolution of York Region’s approach to EA, infrastructure and land-use planning towards a more strategic and integrated approach (see Section 5).

## **2.6 SEA: A Conceptual Framework for Integrated, Adaptive, Sustainability-Oriented Environmental Decision Making and Governance**

On the basis of insights gleaned from these interrelated areas of literature, we present a conceptual framework that describes SEA as a vehicle for fostering more integrated,

adaptive, sustainability-oriented environmental governance in the context of regional planning and decision making (Figure 5). The framework, designed for testing at the municipal level of government, includes the three existing decision-making processes: (1) project-level EA, (2) infrastructure master planning and (3) land-use planning. SEA is depicted in the figure as having the capacity to influence positively all three processes through five interrelated, desirable decision-making characteristics.



**Figure 5: Conceptual Framework for SEA as a vehicle for fostering more integrated, adaptive, sustainability-oriented environmental governance in the context of regional planning and decision making**

The first characteristic, sustainability, captures the idea of including concepts such as socio-ecological systems integrity, precaution, equity, efficiency, livelihood and democratic governance (Gibson et al. 2005). The second characteristic is integrated, adaptive decision making, which refers to the need to structure decision making to allow for multiple perspectives from different disciplines, sectors and scales. Included is the need to provide for flexible, iterative decision making that allows for constant evaluation, learning and the development of adaptive capacity (Armitage 2005). The third characteristic is the use of SEA as a communication tool to foster collaboration between EA practitioners, planners and decision makers, as well as NGOs and members of the general public (Vicente and Partidário 2006).

The fourth characteristic, tiering, refers to the need to tier decision making so that broad policy, program and planning evaluation sets a useful context for project-level decisions.

Implied in the concept of tiering is the need to broaden the spatial, temporal and conceptual scope of alternatives at all levels of decision making (policy, program, plan and project) so that decisions made at one level do not foreclose viable, sustainability-oriented alternatives at another level (Fischer 2002b; Dalal-Clayton and Sadler 2005). The fifth characteristic, comprising accountability, transparency and meaningful public involvement, relates to the idea of multi-party collaborative engagement that works to share responsibility for planning and management activities in an effort to ensure that multiple perspectives are included and processes are transparent or easily traceable (Abelson et al. 2003; Bond, Palerm and Haigh 2004; Webler, Tuler and Krueger 2001).

### 3 Case Study Context

This section describes the context for our case study research on the evolution of SEA in the Regional Municipality of York, Ontario, Canada. The section discusses EA in Canada and Ontario, MCEA, EA and master plans, land-use and environmental planning in Ontario, the ORM landform and related governance, and the history of growth management and servicing in York Region.

#### 3.1 EA in Canada and Ontario

Canada has a federated system of government (i.e., central/national and provincial/territorial), with separate EA processes for the two levels of government that can, in some cases, be harmonized (i.e., through agreements between the two levels of government to carry out one EA when both jurisdictions require an EA). Three main EA processes are provided for at the federal level through the Canadian *Environmental Assessment Act*—a screening, a comprehensive study and a review panel. Screenings are used for projects with known minimal environmental impacts. Comprehensive studies are used for projects that usually are large, have the potential to cause significant adverse environmental effects and may generate public concerns; examples are large-scale oil and natural gas developments, and nuclear and electrical power generation facilities. Comprehensive EAs are proponent driven and are subject to federal government oversight through the establishment of guidelines and review. A 2003 amendment to the Act strengthened the comprehensive study process, adding participant funding provisions (Canadian Environmental Assessment Agency 2009).

The Act also provides for a review panel EA to examine complex and contentious issues that are likely to cause significant environmental effects and/or are of significant public interest (Canadian Environmental Assessment Agency 2009). A review panel consists of experts selected on the basis of their knowledge. The federal Minister of the Environment appoints the panel, which carries out an impartial review and submits its recommendations to the government for a decision. Review panels have “the unique capacity to encourage an open discussion and exchange of views. They also inform and involve large numbers of interested groups and members of the public by allowing individuals to present evidence, concerns and recommendations at public hearings” (Canadian Environmental Assessment Agency 2009).

The Ontario *Environmental Assessment Act* (EAA) is the statute used to define the EA process in Ontario, under the Ministry of the Environment (MOE). The EAA applies to undertakings (enterprises, activities, proposals, plans or programs) by provincial ministries, municipalities and prescribed public bodies, such as conservation authorities and the Ontario Energy Commission (MOE 2005). The type of undertaking being proposed determines what type of EA process (if any) is required (MOE 2006):

1. **Individual EAs:** These apply to large, complex projects with the potential to have significant impacts on the environment, such as major landfills. Proponents must

prepare a terms of reference document, which serves as a work plan to guide and focus the preparation of an Individual EA. According to the MOE, these types of projects represent less than 5 percent of all applications.

2. **Class EAs:** These apply to specific project types or classes and are based on their potential for causing negative environmental effects. Currently, Ontario has approved a total of 10 Class EAs, which cover routine activities related to such things as highway construction and maintenance, water and sewers, GO Transit, forest management activities, the work of conservation authorities, and other public sector activities (MOE 2008a).
3. **Individual EA or screening process specific to electricity generation and transmission:** The EA rules for electricity generation and transmission projects are set out in the Electricity Projects Regulation. Depending on the potential environmental impacts of and the type and size of the project, proponents must undertake either an Individual EA or a screening process, or no EA may be required. According to the MOE, the screening process has been used for more than 30 electricity generation projects since 2001.

The next section discusses the Municipal Class Environmental Assessment, which has direct relevance for this project.

### 3.2 *Municipal Class EA*

The MOE approved the MCEA in June 2000 and updated it in September 2007. Hundreds of municipalities in the province use the MCEA, one of the 10 MOE-approved Class EAs.<sup>1</sup> The MCEA involves a five-phase study that describes the process (Table 2) that proponents must follow to meet the requirements of the Ontario EAA (MEA 2008).

**Table 2: MCEA Planning and Design Process**

<b>Problem or Opportunity</b>	Identify the problem or opportunity.
<b>Alternative Solutions</b>	Identify alternative solutions to the problem, by taking into consideration the existing environment, and establish the preferred solution taking into account public and agency review and input. At this point determine the appropriate Schedule for the undertaking, and/or identify the approval requirements; proceed through the following Phases for Schedule C projects.
<b>Alternative Design Concepts for Preferred</b>	Examine alternative methods of implementing the preferred solution, based upon the existing environment, public and government agency input, anticipated environmental effects and

<sup>1</sup> The Ontario EAA formally recognizes the Class EA process and outlines the requirements for EA approval. The Class EA is submitted and reviewed under the Individual EA review and approval process. Approval, if granted by the Minister of the Environment and Cabinet, applies to the entire class of undertakings and the procedures described in the document. Thus, a proponent who receives approval for a class of undertakings does not need to obtain separate approval under the EAA for each specific project, provided the class planning process is adhered to for the specific project (MOE 2008b).

<b>Solution</b>	methods of minimizing negative effects and maximizing positive effects.
<b>Environmental Study Report</b>	Document, in an Environmental Study Report a summary of the rationale, and planning, design and consultation process of the project as established through the above Phases and make such documentation available for scrutiny by review agencies and the public.
<b>Implementation</b>	Complete contract drawings and tender documents; proceed to construction and operation; monitor construction for adherence to environmental provisions and commitments. Where special conditions dictate, also monitor the operation of the complete facilities.

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(Source: MEA 2007)

As discussed in Section 3.1, projects that are carried out routinely, are similar in nature and scale, and have predictable and mitigable environmental effects may fall into groups or “classes” and therefore do not warrant an Individual EA (MOE 2005). Projects that do not display these characteristics must undergo an Individual EA. In York Region, the Class EA is the usual process for dealing with municipal road, water and wastewater projects, including the following (York Region 2008b):

- construction of new roads
- construction of new sewage and water facilities
- reconstruction and modification of existing roads and traffic facilities
- reconstruction and modification of existing sewage, stormwater management and water facilities
- construction of stormwater management and related erosion, flood and water-quality control facilities
- slope stability and related projects

### **3.3 EA and Master Plans**

Master plans are long-range plans that integrate infrastructure requirements for current and future land use with EA planning principles (MEA 2008). In this sense, infrastructure master plans examine an infrastructure system or group of related projects in order to outline a framework for subsequent projects and undertakings. The benefits of master planning are that municipalities are provided with a broad framework through which the need and justification for specific projects can be established and EA processes can be satisfied. While master plans typically identify a number of related projects that have different time frames and levels of complexity, these projects are conceptual in nature, without a predetermined location, technology or construction method (York Region 2007b). Proponents are then required to fulfill the requirements of the EAA and to assess each project in accordance with its individual characteristics.

### **3.4 Land Use and Environmental Planning in Ontario**

In Canada, land-use policy and planning authority at the regional and local levels flow from laws that the provincial government enacts. In Ontario, the provincial government has traditionally been directly involved in regional and local municipal governance, providing funding for local infrastructure and administration.

#### **3.4.1 The Planning Act**

The Ontario *Planning Act* (Government of Ontario 1991; last updated 2006) defines land-use planning roles through delegation of specific responsibilities to the municipal level. The Act is meant to protect the public interest by ensuring that land-use decisions are consistent with provincial policies.

Section 2 of the Act identifies 17 provincial interests that municipal planners “shall have regard to” when developing municipal official plans. However, the phrase “shall have regard to” does not legally oblige institutions to adhere to these principles. Section 3 of the *Planning Act* outlines a series of Provincial Policy Statements (PPSs) meant to define or put into operation the provincial interests described in section 2 of the Act. These statements must be prepared in a consultative manner but are issued, like regulations, without going through the full legislative process (Gibson et al. 2005). Other key sections of the Act require municipal governments to adopt official plans to guide future land-use decisions and mandate that local municipal government land-use decisions conform to regional-scale government growth and settlement plans.

#### **3.4.2 The Provincial Policy Statement**

A PPS issued under section 3 of the *Planning Act* “provides direction on matters of provincial interest related to land-use planning and development, and promotes the provincial ‘policy-led’ planning system” (MMAH 2005a). The most recent PPS came into effect on March 1, 2005, the same day the *Strong Communities (Planning Amendment) Act, 2004* came into effect. The Act requires that planning decisions subject to the new PPS “shall be consistent with” the new policies.

The PPS recognizes “the complex inter-relationships among economic, environmental and social factors in planning and embodies good planning principles” (MMAH 2005a). It includes more stringent policies relating to issues that affect communities, such as the efficient use and management of land and infrastructure; protection of the environment and resources; and ensuring appropriate opportunities for employment and residential development, including support for a mix of uses (MMAH 2005a).

#### **3.4.3 Regional Government**

While several amalgamations of communities were initiated in the mid-1990s, the development of regional governments has generally resulted in a two-tier municipal government structure in Ontario. The upper-tier regional government has responsibility

for regional-scale planning and the provision of infrastructure. The lower tier is responsible for land-use decisions through development approval and zoning. Despite the intention for regional governments to provide a balance of interests at a regional scale, lower-tier zoning and development approvals are often made in relative isolation and can, as a result, have little regard for cumulative land-use impacts. Nevertheless, lower-tier municipal plans must be consistent with the upper-tier regional plans.

#### **3.4.4 The Ontario Municipal Board**

The Ontario Municipal Board (OMB) is a unique quasi-judicial, independent tribunal charged with adjudicating appeals related to land-use planning in a public forum. Under the *Planning Act*, parties involved in a land-use or planning dispute can appeal to the OMB about local and regional planning decisions regarding, for instance, changes to official plans, zoning by-laws or plans of subdivision. Consisting of provincially appointed adjudicators, the OMB bases its decisions on planning principles as expressed in municipal plans and especially the *Planning Act*. The OMB also decides, in the context of a pre-hearing, what parties are designated as “parties with standing.” Such a designation allows a party to present evidence, cross-examine and offer final arguments. The OMB has played a significant role in the evolution of planning, land use and urban development in Ontario. Members of the OMB are provincial appointees, who at times bring its credibility, non-partisan objectivity and accountability into question.

#### **3.4.5 Ontario’s Conservation Authorities**

Ontario’s conservation authorities (CAs) are provincially created agencies with a broad mandate to manage, protect and restore Ontario’s water and related resources on a watershed basis (Shrubsole 1996). These agencies have been internationally recognized as leaders in innovative, science-based, locally responsive watershed management. CAs are a key node in Ontario’s water resources’ governance network, at a nexus between the provincial government, upper- and lower-tier municipal governments, NGOs and private sector stakeholder groups. Under the 1946 *Conservation Authorities Act*, CAs could be formed at the request of the majority of municipalities in a given watershed. The CA’s mandate was “to ensure the conservation, restoration and responsible management of Ontario’s water, land and natural habitats through programs that balance human, environmental and economic needs” (Conservation Ontario 2000). To implement this mandate, CAs were authorized to “undertake research, acquire land, raise municipal levies, construct works, control surface water flows, create regulations, and prescribe fees and permits” (Conservation Ontario 2000: 314). In 2006, there were 36 conservation authorities whose jurisdictions (mainly in southern Ontario) include approximately 90 percent of Ontario’s population.

#### **3.4.6 York Region: Geographical Context**

Replacing the former York County in 1971, the Regional Municipality of York, also



called York Region, is an upper-tier municipality in south-central Ontario, covering 1,776 square kilometres from Lake Simcoe in the north to the City of Toronto in the south. The region borders Simcoe County and Peel Region in the west and Durham Region in the east (see Figure 1). York Region, which has a regional government, one of the six in Ontario, is among the fastest growing municipalities in Canada. The population of York Region is expected to reach 1.5 million residents by 2031 (MPIR 2006). The region is part of what was once called the Greater Toronto Area (GTA), which has now been expanded to include the larger Greater Golden Horseshoe.

The nine towns and cities in York Region are the Town of Aurora, Town of East Gwillimbury, Town of Georgina, Township of King, Town of Markham, Town of Newmarket, Town of Richmond Hill, City of Vaughan and Town of Whitchurch-Stouffville. The region is governed by York Regional Council, which consists of 20 elected representatives of the constituent towns and cities in the region—9 mayors and 11 regional councillors (York Region 2008a).

York Region's landscape includes farmlands and the ORM, a unique protected landform that is an immense ridge of land running east to west, north of and parallel to Lake Ontario. One of the moraine's most important functions is as a water recharge/discharge area that sustains the health of the many watersheds originating on the moraine and provides drinking water to over 250,000 people (STORM 2008). The ORM has been described as southern Ontario's rain barrel—its permeable sands and gravels absorb and collect precipitation, which slowly recharges the deep aquifers below the ground. In York Region, the moraine is the source of many river and stream systems, including Schomberg Creek, the Black and Holland rivers, which flow north to Lake Simcoe, and the Humber, Don and Rouge rivers, flowing south to Lake Ontario. The natural environment of York Region is characterized by many forested areas, grasslands, wetlands and kettle lakes, which dot the landscape and are part of a sensitive and attractive ecosystem (York Region 2008d).

This natural environment and its strategic location in the GTA have led to dramatic population growth. The population of York Region grew from 169,000 in 1971 to 759,000 by 2001, and is expected to reach 1.5 million by 2031 (MPIR 2006). Approximately 350,000 employees work in the region's 21,000 businesses. Employment is forecast to double by the year 2031. Most of the growth in the region has occurred within the southern municipalities of Vaughan, Richmond Hill and Markham. For example, Markham grew from a population of approximately 37,500 in 1971 to an estimated population of 273,805 in 2006. The City of Vaughan experienced the highest growth rate, 8.2 percent, over the past 35-year period (York Region 2008f). The rate and scale of this growth has led to enormous pressure for new and updated infrastructure, especially that related to transportation, water and wastewater. It is in this context that, in 2006, York Region began work on its growth-management update, titled *Planning for Tomorrow*. Concurrently, work was begun on a sustainability strategy and an update of the region's infrastructure master plans, which culminated in an update to the regional official plan in 2009 (York Region 2008c).

The master planning update process (for both transportation and water and wastewater) in York Region followed phases 1 and 2 of the MCEA process in order to

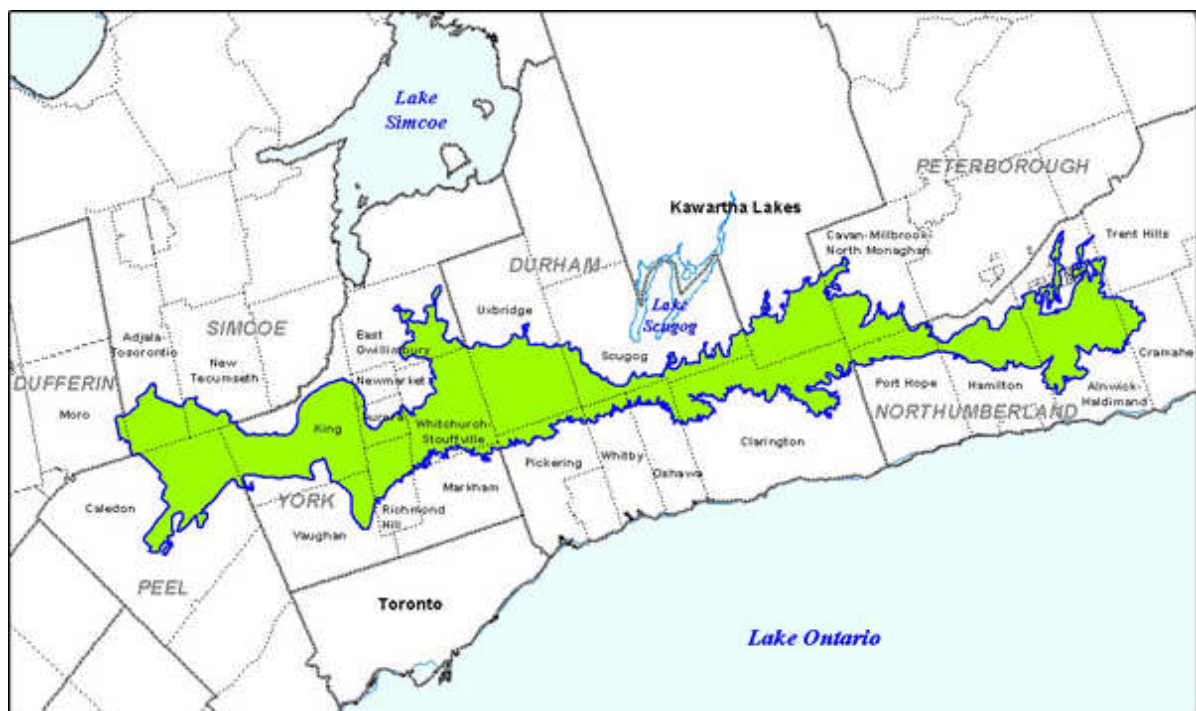
evaluate alternative solutions and to consult with the public. While, master plans do not require approval under the EAA, specific projects need to fulfill all appropriate EA requirements.

### **3.5 The ORM Landform and Related Governance**

The physical, biological and cultural information on the ORM presented below is taken mainly from *Nomination Submission from Canada for the Oak Ridges Moraine Biosphere Reserve* (Francis 2005).

#### **3.5.1 Physical and Biological Characteristics**

The ORM is located to the north of the City of Toronto and extends from the Niagara Escarpment in the west to the Trent River in the east (Figure 6). The moraine is approximately 195,000 hectares in area, 160 kilometres long and between 3 and 24 kilometres wide. It rises some 229 metres above Lake Ontario. Multiple advances and retreats of glaciers during the Pleistocene glaciation created the ORM (Chapman and Putnam 1984; Government of Ontario 2002; ORMTWC 1994).



**Figure 6: The ORM Area**

(Source: MMAH 2008a)

The moraine is composed of discrete layers of sands and gravels, deposited in a glacial lake environment, which are separated by glacial tills deposited during episodic

advances of the Lake Ontario and Lake Simcoe lobes of the glacier that once covered the area. The geomorphology is described as *kame* and *kettle* with a hummocky appearance. The kames are glacial tills in the form of small rounded hills with small V-shaped valleys and short sharp ridges. The kettle depressions may be either spring-fed wetlands, bogs or kettle lakes; these kettle systems in southern Ontario are distinct features of the ORM. There are 32 kettle lakes, ranging in size from 2 to 49 hectares, on the ORM (Francis 2005).

The ORM forms a regional surface-water divide from which 65 watercourses flow south and north, and is the groundwater recharge and discharge area for these watercourses (ORMTWC 1994). Those flowing south enter Lake Ontario, and many flow through the Toronto area. To the north, rivers flow into Lake Simcoe, Georgian Bay and water bodies associated with the Trent-Severn Waterway (Francis 2005).

The ORM is also an area of high biodiversity due to its variable topography, mix of land uses and transition between the Great Lakes–St. Lawrence Forest Region and the Deciduous Forest Region, known in Canada as Carolinian Canada. Associated with the ORM are 1,033 species of plants, 118 species of breeding birds, 38 species of mammals, 55 species of fish and 26 species of amphibians and reptiles (Francis 2005; MNR 2000).

### **3.5.2 Cultural Characteristics**

Twenty-four lower-tier municipalities and one single-tier and seven regional or county structures have jurisdiction over the ORM. The Alderville First Nation in the eastern part of the ORM lies outside the purview of ORMCP policies. Nine CAs also have jurisdiction over the ORM: the Credit, Nottawasaga, Toronto and Region, Lake Simcoe Region, Central Lake Ontario, Kawartha Region, Ganaraska Region, Otonabee and Lower Trent CAs. These nine CAs formed the Conservation Authorities Moraine Coalition in 2000 to coordinate groundwater studies and watershed planning on the ORM (CAMC 2009).

Ontario's recent population growth is of particular relevance to the ORM. The Ontario population rose from 7.8 million in 1971 to 11.9 million in 2001 and is projected to reach 13.5 million by 2011 (Statistics Canada and Ontario Ministry of Finance 2004). Urban growth in the GTA since the 1950s has been significant due to immigration from other countries. Immigration rates ranged from 12,000 to 30,000 people per year between 1977 and 1987, increasing to 90,000 in 1993 (Ley and Tutchener 2001). The area of the ORM experiencing the most pressure is York Region (see Figure 1). The number of York Region residents living on the ORM in 1991 was 54,850. By 1998, the number had risen to 85,083 and is projected to reach 121,290 by 2011 (ORMTWC 1994; Blais 2002). The population of the Town of Richmond Hill, located in York Region, rose from 32,385 in 1971 to 80,142 in 1991 and 132,030 in 2001 (Hanna and Webber 2005). The most intense development conflicts on the ORM have taken place in Richmond Hill.

This population growth associated with the Toronto area and the region's economic diversification and integration into the "Great Lakes Megalopolis" has placed tremendous pressure on the ORM. The development of an extensive road network,

coupled with sewer and water servicing, has contributed to the pressure of urban sprawl. The ORM has been and continues to be an important source of aggregate building material for the Toronto region. Some agricultural activity occurs on the ORM, which is an important recreational resource and is now home to many former urbanites (ORMTWC 1994).

### **3.5.3 History of ORM Land-Use Planning Governance**

Development pressures on the southern flanks of the ORM began in the late 1980s. In October 1989, citizens from across the ORM brought their respective local efforts together under the umbrella of a new organization, STORM, which was incorporated in 1990. In response to EMO advocacy and recommendations contained in three government studies (EAAC 1989; Kanter 1990; Royal Commission on the Future of the Toronto Waterfront 1992), the then Liberal government issued an expression of provincial interest in the ORM within the GTA and announced a comprehensive planning study, to be overseen by the Oak Ridges Moraine Technical Working Committee (ORMTWC).

The ORMTWC commissioned 15 background studies to explore natural heritage protection, water, land use, cumulative effects, monitoring and other issues. While the final report's recommendations, submitted in 1994 to the Minister of Natural Resources, were never implemented, agency work continued on a natural heritage inventory and hydrogeological investigations of the ORM. In 2001, under intense pressure from EMOs, citizens and the media to resolve long-standing land-use conflicts in York Region, the Province of Ontario called for a six-month moratorium on all land-use matters and appointed the multi-stakeholder Oak Ridges Moraine Advisory Panel (of which STORM was a member) to recommend protection for the ORM. On the basis of the recommendations of the advisory panel, the government passed the ORMCA in 2001 and approved the ORMCP in 2002 (Parliamentary Commissioner for the Environment 2003).

### **3.5.4 The ORMCA and ORMCP**

The ORMCA was unanimously passed on December 14, 2001 by an all-party vote in the Ontario Legislature. The ORMCA authorized the Minister of Municipal Affairs and Housing to establish, by regulation, the ORMCP, established the objectives of the ORMCP and required that all decisions made under the *Planning Act* and *Condominium Act* conform to the provisions of the ORMCP.

The ORMCP vision of the ORM is “a continuous band of green rolling hills that provides form and structure to south central Ontario, while protecting the ecological and hydrological features and functions that support the health and well-being of the Region's residents and ecosystems” (Government of Ontario 2002). The objectives of ORMCP are as follows (Government of Ontario 2002):

- Protect the ecological and hydrological integrity of the ORM Area.
- Ensure that only land and resource uses that maintain, improve or restore the

ecological and hydrological functions of the ORM Area are permitted.

- Maintain, improve or restore all the elements that contribute to the ecological and hydrological functions of the ORM Area, including the quality and quantity of its water and other resources.
- Ensure that the ORM is maintained as a continuous natural landform and an environment for the benefit of present and future generations.
- Provide for land and resource uses and development compatible with the other objectives of the ORMCP.
- Provide for continued development within existing urban settlement areas, recognizing existing rural settlements.
- Provide for a continuous recreational trail through the ORM Area that is accessible to all, including persons with disabilities.
- Provide for other public recreational access to the ORM Area.

The ORMCP has four land-use designations. The Natural Core designation relates to areas with a high concentration of key natural heritage features and hydrologically sensitive features or landform conservation areas. This designation is restrictive and does not permit new subdivisions or aggregate extraction activities in the area. The Natural Linkage designation relates to a central corridor system that supports or has the potential to support movement of wildlife. This designation also has restrictive development policies. The Countryside designation relates to rural land uses, recognizes existing hamlets or similar existing small communities, but does not allow for new subdivision development. The Settlement designation relates to areas where urban development is focused, including development of a range of residential, commercial, industrial and institutional uses (Government of Ontario 2002).

These are some key policies of the ORMCP:

- No new aggregate resource extraction is permitted in Natural Core areas.
- Stringent review and approval standards apply to new pits in Natural Linkage areas.
- New recreation developments, such as golf courses, are permitted only in Countryside areas.
- New transportation and utility corridors are permitted in Natural Core and Natural Linkage areas only if the need for such corridors is demonstrated and no alternative location is available.
- A trail system developed for use by non-motorized vehicles.

The ORMCP is to be reviewed every 10 years, and the review “cannot consider removing land from the Natural Core Areas or the Natural Linkage Areas” (Government of Ontario 2002: 9).

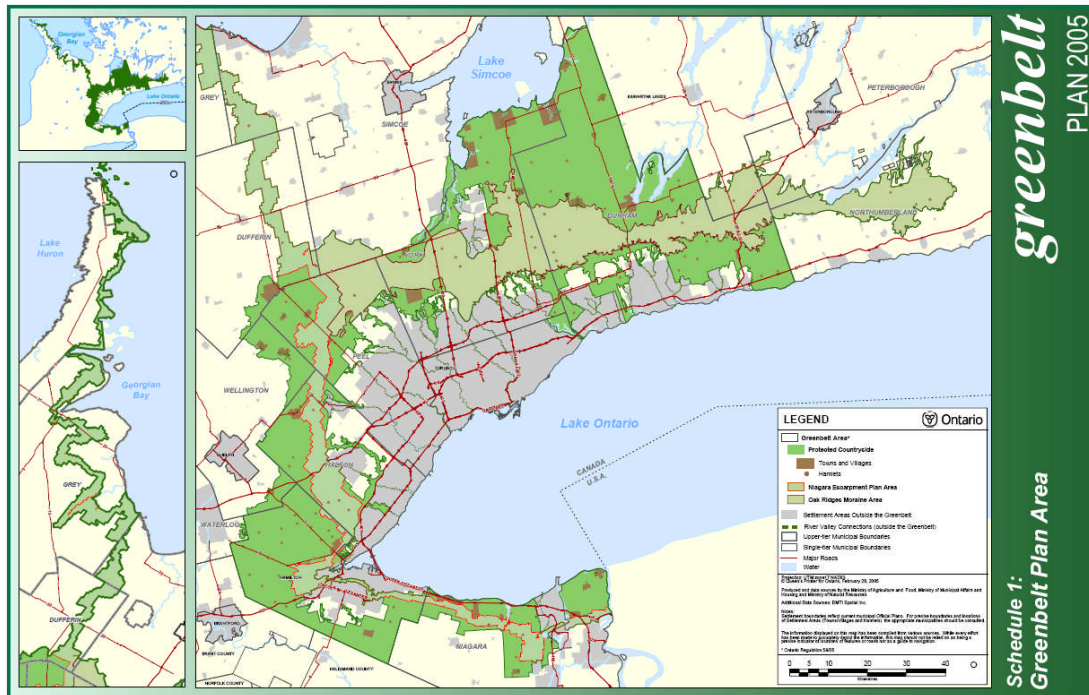
The government also created the Oak Ridges Moraine Foundation with a \$15-million-dollar start-up fund in May 2002. In the same month, the government appointed the North Pickering Land Exchange Review Panel to make recommendations on

development land swaps to protect the ORM in York Region (Parliamentary Commissioner for the Environment 2003). The majority of municipalities on the ORM have brought their municipal planning instruments into conformity with the ORMCP and are implementing ORM planning. A number of EMOs launched the Monitoring the Moraine project in early 2005, which is designed to develop a comprehensive monitoring program for the ORM that clearly sets out roles and responsibilities. The objective of the program is to ensure that adequate information is available for the ORMCP 10-year review scheduled for 2015 (Citizens Environment Watch 2005). An EMO-led exploratory committee has begun the process of nominating the ORM as a United Nations Educational, Scientific and Cultural Organization World Biosphere Reserve.

### **3.5.5 The *Greenbelt Act* and Greenbelt Plan**

The *Greenbelt Act, 2005* enabled the creation of the Greenbelt Plan Area and the establishment of the Greenbelt Plan to protect about 728,400 hectares of environmentally sensitive and agricultural land in the Greater Golden Horseshoe from urban development and sprawl. The Greenbelt includes the 323,700 hectares of land that the Niagara Escarpment Plan and the ORMCP protect, and 404,686 newly protected hectares known as the Protected Countryside (MMAH 2008b). The *Greenbelt Act* requires that decisions made under the Ontario *Planning and Development Act* and the *Planning Act* conform to the Greenbelt Plan.

The Greenbelt Plan was established under section 3 of the *Greenbelt Act*, to take effect on December 16, 2004, and identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological features and functions occurring on this landscape. Figure 7 shows the Greenbelt Plan Area.



**Figure 7: The Greenbelt Plan Area**

(Source: MMAH 2005b)

The Greenbelt Plan is relevant to this research, as much of York Region is within the Greenbelt designated area (approximately 69% of York Region is within the Greenbelt and/or the ORM).

### 3.5.6 The *Places to Grow Act* and Growth Plan for the Greater Golden Horseshoe

The *Places to Grow Act, 2005* received royal assent on June 13, 2005. It provides a framework for the provincial government to coordinate planning and decision making for long-term growth and infrastructure renewal in Ontario. The Act gives the provincial government the power to designate geographical growth areas and to develop growth plans in collaboration with local officials and stakeholders to meet specific needs across the province (Government of Ontario 2005).

The Growth Plan for the Greater Golden Horseshoe, released on June 16, 2006 and prepared in accordance with the *Places to Grow Act*, is a 25-year plan with the following aims (MPIR 2006):

- Revitalize downtowns to become vibrant and convenient centres.
- Create complete communities that offer more options for living, working, learning, shopping and playing.
- Provide housing options to meet the needs of people at any age.
- Curb sprawl and protect farmland and green spaces.
- Reduce traffic gridlock by improving access to a greater range of transportation

options.

The Growth Plan for the Greater Golden Horseshoe is a significant provincial plan as it guides the decisions of all regional municipalities, including York Region, on a wide range of issues, including infrastructure and land-use planning.

### ***3.6 History of Growth Management and Servicing in York Region***

The idea for a centralized sewage treatment system for York Region dates back to 1965 when the Province of Ontario decided that no additional sewage treatment plants could be built on the Don and Rouge rivers and Duffins Creek. Implementing this new environmental approach was the responsibility of the little-known Ontario Water Resources Commission, which was granted new powers to finance water and sewer projects on lands beyond the borders of the Municipality of Metropolitan Toronto, comprising 1,917 square kilometres (McMahon 2002). Ten years later the York-Durham Servicing Agreement was signed, which paved the way for the construction of the York-Durham Sewage System (YDSS), bringing sewer capacity to undeveloped lands outside of Metro Toronto.

The conceptualization, design and construction of this project occurred over a 25-year period and was completed in the early 1980s (York Region 2007b). The YDSS is a complex wastewater collection system, and it converges at York Region and Durham Region's jointly operated Duffins Creek Water Pollution Control Plant, located in Pickering, and discharges treated wastewater into Lake Ontario.

In the mid-1970s, the provincial government enacted legislation that allowed for the creation of subregional governments, resulting in the creation of the regional municipalities of York, Peel and Durham. York Region grew from 169,000 people in 1971 to 759,000 people in 2001, and its population is expected to reach 1.5 million by the year 2031 (MPIR 2006).

The inherent limitation in the YDSS's physical servicing capacity was seen to be the key factor in stopping urban sprawl outside the borders of Metropolitan Toronto. However, in the early days of the YDSS, a combination of unplanned and criminal allocations of YDSS capacity to land development interests in York Region, as well as ambitious lower-tier growth forecasts, resulted in an over-allocation of sewage capacity of the pipe. In 1996 the Ontario Ministry of Environment intervened and required more targeted and strategic assessment of growth management relative to sewer capacity (McMahon 2002).

In 1997, York Region completed the YDSS Master Plan (updated in 2002) to identify and review current conditions and future alternatives necessary to meet population projections in the region (York Region 2008e). The "preferred alternative" was to double the capacity by twinning the existing YDSS.

Several projects identified in the 1997 YDSS Master Plan were required to go through an EA process, including the Lower Leslie Street Trunk Sewer project and 19th Avenue Interceptor Sanitary Sewer project, and the 16th Avenue Trunk Sewer phase I project.



The Lower Leslie Street Trunk Sewer and 19th Avenue Interceptor project was undertaken as a Region of York Class B Municipal EA, upgraded through the 1997 YDSS Master Plan from a lower-tier EA undertaking. The project was designed to divert or intercept sewage from the existing communities of Aurora, Richmond Hill and Newmarket and to expand the service area (Broughton 2008). The EA was filed in June 2003, but the Ontario Minister of the Environment intervened in October 2004 to require the proponent to do further work. York Region created the Interceptor Sewer Advisory Committee (ISAC) as a public advisory body to the region.

The 16th Avenue Trunk Sewer was 6.7 kilometres long, with a pipe diameter of 2.6 metres. Tunneling, the method of construction used for this project, required “de-watering” to lower the water level in the immediate vicinity. To safely construct the shafts and the tunnels of this sewer to the required depth, the groundwater level was lowered by pumping in the deep Thorncliffe aquifer to below the depth of the shaft and tunnel (York Region 2006). Some of this water was returned to area streams, and some was discharged into the YDSS (York Region 2007c). Due to unanticipated subsurface conditions, more de-watering than originally anticipated was necessary (York Region 2006). This affected private wells outside what was originally defined, during the EA process, as the zone of influence. The EA project team’s failure to address these concerns led to a major media campaign by local residents, EMOs and politicians.

A third-party request to move from a Class EA to an Individual (or full) EA for all YDSS projects resulted, in the Ontario Minister of Environment issuing 44 conditions on a number of YDSS projects in October 2004. In particular, the 16th Avenue and 19th Avenue projects, while not required to be undertaken as full EAs, were subject to a combined total of 17 conditions related to improved monitoring and mitigation techniques, improved access to technical reports, public meetings and a peer review process. In addition, the 19th Avenue Interceptor project was subject to the provisions of the ORMCP.

The YDSS has played a critical role in both the urbanization of York Region and as a focus for NGO opposition and mobilization against urban sprawl and continued destruction of the ORM. The 16th Avenue and Leslie Street EAs are relevant to the evolution of York Region’s approach to EA, infrastructure and land-use planning towards a more strategic and integrated approach in that they represent, for a majority of interviewees, a window of opportunity (“policy window”) that was critical in changing relevant, regional policy (see Section 5).

## **4 Research Methods**

### **4.1 Case Study Research**

A case study approach was employed to address the goal of our research: to extend practical and theoretical understanding of SEA to the related, but in practice poorly coordinated, processes of project-level EA, master planning and regional land-use planning. Case studies involve the exploration of a single entity or phenomenon bounded by an event and process. As a research strategy, case studies are used in many situations to “improve our knowledge of individual, group, organizational, social, political and related phenomena” (Yin 2003: 1). The need for case studies arises out of the desire to understand complex social phenomena; a case study allows investigators to retain the holistic and meaningful characteristics of real-life events, such as organizational and managerial processes (Yin 2003). Case study research was used to investigate SEA in an empirical context, York Region in Ontario, Canada.

### **4.2 Participatory Action Research**

“Participatory action research” (PAR) is a term coined by Whyte (1991) that has come to refer to several related streams of collaborative forms of research, including Participatory Action Research (PAR) (Whyte 1991), Action Science (Argyris and Schon 1974, 1978; Schon 1983) and Co-operative Inquiry (Reason 1988, 1994; Reason and Heron 1995), among many others. For the purposes of this research, however, the focus is primarily on Whyte’s PAR, as it has been widely adopted in many fields of study. Whyte (1991: 20) has characterized PAR in the following manner:

In participatory action research, some of the people in the organization or community under study participate actively with the professional researcher throughout the research process from the initial design to the final presentation of results and discussion of their action implications.

Whyte (1991) notes that this type of research contrasts sharply with more conventional research approaches in that, during conventional research, “members of the organizations or communities are treated as passive subjects with some of them participating only to the extent of authorizing the project, being its subjects, and receiving the results” (Whyte 1991: 20). PAR, as Whyte (1991) argues, is a “powerful process of organizational learning—a process whereby leaders of labor and management learned from each other and from the consultant/facilitator, while he learned from them” (Whyte 1991: 30). PAR has evolved out of frustration with expert-oriented approaches. Whyte (1991: 40) describes the process of PAR as beginning with “the problems people who work in a firm are currently facing.” He continues:

Instead of beginning in the conventional fashion with a review of literature, the specification of hypotheses, and the finding of a target organization to test out our design, we start by discovering the problems existing in the organization. Only as we work with members of the organization, diagnosing those problems, do we draw upon the research literature as well as our own past experience.

Our project was conceived, developed and implemented collaboratively with representatives from York Region and STORM and with researchers from the University of Waterloo and Queen's University.

### **4.3 Multiple Research Methods**

Midgley (2000: 174–76) identified three interlinked problems that are associated with the use of only one method, or even a very narrow set of methods. First, the researcher is likely to be unresponsive to diverse understandings of issues arising out of the different perspectives of people affected by them. Second, the researcher is unlikely to address the issues of relevance that may emerge as people's understandings evolve. And third, the researcher may see all issues and perspectives through the same lens. Therefore, for the purposes of this research, data was obtained from and verified using the following:

- semi-structured interviews
- reviews of the literature—academic journals, books and research reports—to develop the contextual information
- analysis of relevant government policy documents
- participant observation

#### **4.3.1 Semi-Structured Interviews**

Interviewing allows the researcher to gain an in-depth, detailed account of the socio-ecological and policy context of the respondents and their individual perspectives (Lewis 2003). Through interviewing, the researcher can understand experiences and reconstruct events in which he or she did not participate (Rubin and Rubin 2005). Twenty-one people were interviewed (see Table 3).

Semi-structured interviews of key informants were the main source of data about the emerging strategic approach in environmental impact assessment in York Region. Babbie (2004) described semi-structured interviewing as interaction between an interviewer and respondent in which the interviewer has a general plan of inquiry but not a specific set of questions that must be asked in particular words and in a particular order. In the semi-structured interview, interviewers “develop, adapt, and generate questions and follow-up probes appropriate to the given situation and the central purpose of the investigation” (Berg 1995: 32). Rubin and Rubin (2005) state that to generate depth of understanding, the interview design must remain flexible and adaptable. The main benefit the semi-structured interview is its usefulness in situations where it is assumed that the interviewer does not know beforehand all the pertinent questions and thus cannot predetermine fully a list of questions to ask (Berg 1995). The semi-structured interview is a flexible research approach that allows for reacting to and build on information that emerges unexpectedly during field research.

To counterbalance skepticism about the replicability and validity of semi-structured interviewing, a set of question “themes” was created prior to interviewing and served as a general list from which to draw and formulate questions during each interview. These

themes were adjusted as field research proceeded, but questioning was not limited to predetermined themes, so new themes could emerge from the interview participants themselves. Questions were generally asked of each interviewee in a systematic and consistent order, but the interviewees were allowed to digress. This style of interviewing allows the researcher to probe a consistent set of issues from a variety of perspectives (Hughes 2002).

#### **4.3.1.1 Interview Transcription**

Two main techniques are typically employed to collect qualitative data from an interview: note taking and audio recorded transcription (Hughes 2002). Note taking with audio recording for verification purposes was the method chosen for our research. Note taking allows the researcher to capture commentary outside the context of the interview, such as document references and contextual notes. Audio recording allows for verification of notes taken from the interview and could be transcribed at a later date, but most recordings were not directly transcribed (Table 3), as verbatim transcription is time-consuming and costly (Hughes 2002).

**Table 3: Interviews Conducted**

<b>Interview Number</b>	<b>Type of Data</b>	<b>Date</b>	<b>Affiliation</b>
1	Notes	November 6, 2007	York Region staff
2	Notes and partial transcription, verification using audio recording	November 6, 2007	York Region staff
3	Notes and partial transcription, verification using audio recording	November 14, 2007	York Region staff
4	Notes	November 14, 2007	City of Vaughn staff
5	Notes and partial transcription, verification using audio recording	November 14, 2007	York Region staff
6	Notes	November 16, 2007	Former MNR staff
7	Notes	November 22, 2007	Environmental NGO representative
8	Notes and partial transcription, verification using audio recording	November 27, 2007	York Region staff
9	Notes and partial transcription, verification using audio recording	November 27, 2007	York Region staff
10	Notes and partial transcription, verification using audio recording	November 28, 2007	York Region staff
11	Notes and partial transcription, verification using audio recording	November 28, 2007	Former Toronto and Region CA (TRCA) staff
12	Notes	November 29, 2007	TRCA staff
13	Notes	November 30, 2007	Former MOE staff
14	Notes	December 21, 2008	York Region staff

15	Notes and partial transcription, verification using audio recording	March 10, 2008	Consultant
16	Notes and partial transcription, verification using audio recording	June 9, 2008	Markham resident
17	Notes and partial transcription, verification using audio recording	June 20, 2008	Markham councillor
18	Notes and partial transcription, verification using audio recording	July 18, 2008	York Region staff
19	Notes and partial transcription, verification using audio recording	July 18, 2008	York Region staff
20	Notes and partial transcription, verification using audio recording	August 15, 2008	TRCA staff
21	Notes and partial transcription, verification using audio recording	September 11, 2008	Environmental NGO representative

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#### **4.3.1.2 Interview Protocol**

##### **Contacting Potential Interviewees**

Interviewees for this study were identified either through initial screening (document review and consultation with the project team) or through the “snowball sampling” method (Patton 2002: 237), in which key informants are asked to name additional useful key informants. Potential interviewees were then contacted either by email or telephone. During the initial contact, the research team and its affiliations were identified, and the nature of the research and involvement in it of the contacted person, should he or she choose to participate in an interview, were discussed. A copy of the interview questions, an invitation and a letter were sent to the potential interviewee (usually by email) to provide that person with the information necessary to make an informed decision about whether to participate in an interview, which would last about 90 minutes.

##### **The Interview**

At the beginning of the interview, respondents were asked whether the interview questions as provided were an appropriate way to proceed or whether they would prefer an alternative approach to addressing the relevant issues. If the interviewee was comfortable with the proposed questions, they were used in the interview. Interviewees were also asked at the beginning of the interview whether they were comfortable with the interview being audio recorded.

At least two members of the research team, the interviewer and a designated, or lead, scribe, attended each interview. If a third member of the research team was available, this person acted as a secondary scribe. Using a laptop computer, the lead scribe took notes, which became the interview transcript. After each interview, notes were reviewed to ensure their completeness and accuracy.

##### **Follow-up and Handling of Transcripts**

Following the interview, a follow-up e-mail was sent requesting any documents offered

and responding to any questions, concerns or requests the interviewees had. To ensure that the transcripts of the interviews were readable, accurate and complete, each transcript (a digital word-processing file) was reviewed and then later compared to the digital recording of the interview.

### **Transcript Analysis and Analytical Criteria**

The transcripts were analyzed using QSR NVivo, a computer-assisted qualitative data analysis software program that analyzes transcripts to discover patterns, identify main themes, glean insight and develop meaningful conclusions. Due to the semi-structured nature of the interview, the interviewee had the option of deviating from the preset questions and simply recounting the narrative, from their perspective, of the transition to a more strategic approach to EA in York Region. Despite this optional change of format, critical elements relevant to the themes of this research were present in all narrative descriptions. If the interview transcript lacked clarity or the transcriber missed certain details, the researcher referenced the associated digital audio recording. All interviewees had agreed to be recorded.

Analysis proceeded throughout data collection. The object of the analysis was to draw out categories, relationships and assumptions that relate to the primary research area, as well as the themes that emerged from the literature and policy document reviews. Qualitative researchers usually use ideas, themes or concepts for analytical purposes (Babbie 2004; Rubin and Rubin 2005). Box 2 identifies the themes and topics used for the analysis phase of our research. Data were organized and coded on the basis of these themes and categories.

#### **Box 2: Themes for Interview Analysis**

1. Integrated and tiered decision making
2. Broader spatial, temporal and conceptual scope
3. Sustainability-oriented planning and decision making
4. Adaptive management and organizational learning
5. Transparency, meaningful public involvement and collaboration

### **4.3.2 Literature Reviews**

The purpose of a literature review is to define problems, assess previous work, present relevant background information and identify tensions and areas of consensus (McCracken 1988). The literature review has a number of additional functions. It aids in the development of interview questions and the framing of interview analysis by providing insight into areas that need to be explored, provides categories and relationships that may be useful in organizing data, and improves the effectiveness of the researcher during data collection through increasing his or her knowledge about the topic (McCracken 1988).

Two comprehensive literature reviews were undertaken for the purposes of this research: the first focused on SEA definitions, concepts, principles and practice; the second focused on SEA, civil society and meaningful public consultation. Relevant academic research databases were searched, using SEA, EA and public consultation terminology, to identify recent and relevant literature. A list of relevant books and articles was developed and scoped using the research goals and objectives in the research proposal. Both literature reviews were developed collaboratively by the research team, vetted by our research advisory committee and submitted to the Canadian Environmental Assessment Agency.

### **4.3.3 Analysis of Relevant Government Policy Documents**

In the context of the interviews, each respondent was asked to identify the key documents for understanding the issues and events associated with the history and evolution of York Region's EA and land-use planning processes to date. In the follow-up email, each interviewee was asked to provide a copy of the document(s) they had cited as significant. Documents that could be obtained through the Internet or through the University of Waterloo and Queen's University library systems were collected. If the document could not be acquired this way, the referring interviewee was contacted to find out how to obtain the document.

All documents were systematically reviewed as a means of triangulation and verification of the qualitative data from the interview, literature review and participant observation. Each policy document was reviewed in terms of its purpose, content and significance for the research. The analysis of policy documents was used to verify details regarding key events, key individuals, groups, organizations and agencies involved in the history and evolution of York Region's EA and related master planning and land-use planning processes.

### **4.3.4 Participant Observation**

"Participant observation" refers to "research that involves social interaction between researcher and informants in the milieu of the latter, during which data are systematically and unobtrusively collected" (Taylor, Steven and Bogdan 1984: 15). Participant observation can serve as a useful method or complement to other methods for producing empirical material on phenomena in a "natural context" (Alvesson and Skoldberg 1999). This interpretation of participant observation "assumes that knowledge develops from experience, particularly the experience of social-political action" (Newman 2000: 24).

Participant observers generally gather data through several means, including casual conversations and in-depth, informal and unstructured interviews, as well as formally structured interviews (Jorgensen 1989). Aside from interviews, the research team gathered qualitative data for the case study by attending and participating in meetings and workshops and through casual conversations with meeting attendees. In all cases, one member of the research team kept detailed notes of the content and context (e.g., group dynamics, non-verbal responses) of meetings.

Throughout this research, the research team engaged participants in various meetings and observed participants to complement the in-depth interviews. The research team was invited to attend various York Region internal and public meetings and project-related workshops involving York Region staff (Table 4).

**Table 4: Meetings/Workshops That Research Team Members Organized/Attended**

Meeting/workshop attended	Workshop number	Date
Research team workshop on the York Region Sustainability Strategy and sustainability criteria for the transportation master plan and water and wastewater master plan	1	June 2007
York Region sustainability focus group	2	October 2007
Technical Advisory Committee meeting on updating the transportation master plan: modelling network scenarios	3	June 2008
Upper York Sewage Solutions (UYSS) chartering session	4	September 2008
Technical Advisory Committee meeting on updating the transportation master plan	5	September 2008
Research team workshop on SEA and the UYSS	6	October 2008
Technical Advisory Committee meeting on updating the water and wastewater master plan	7	October 2008
Public Consultation Centre meeting on updating the transportation master plan	8	November 2008
Public Consultation Centre meeting on updating the water and wastewater master plan	9	January 2009
Final Technical Advisory Committee meeting on updating the transportation master plan and water and wastewater master plan	10	May 2009

Our team was provided unprecedented access to York Region's meetings on EA and land-use planning, including Technical Advisory Committee meetings about both the transportation master plan and the water and wastewater master plan, and internal and public meetings concerning the development of the York Region Sustainability Strategy. In addition, the research team was invited to participate, with York Region and CA staff and consultants, in a chartering, or visioning, meeting of an emerging York Region Individual EA project.

The research team hosted two workshops for case study participants. The first (workshop 1, see table 4), which focused on the development of the York Region Sustainability Strategy, involved York Region staff and relevant members of the academic community, including experts on sustainability, EA, transportation and infrastructure planning. The second (workshop 6, see table 4), chartering session for



the UYSS focused on integrating sustainability and SEA principles and practices into York Region EA and planning processes, and involved York Region staff, private consultants and members of the research team.

## **5 Research Findings and Analysis**

### **5.1 Introduction**

Our findings are structured in terms of activities in which York Region was involved that are considered to be related to SEA or have some characteristics and elements of it. It is interesting to note that, at the time the proposal that led to this research was written, regional authorities were unaware of the concept of SEA.

York Region participated in the following activities, which are discussed below: provincial and regional planning, including the ORM land-use planning effort from the early 1990s through 2006; the EA and construction of the 16th Avenue Trunk Sewer; the 19th Avenue Interceptor Sanitary Sewer EA and collaboration with STORM; development of sustainability principles to guide EA processes within the region; organizational changes to coordinate water, wastewater and transportation master planning under the York Region Sustainability Strategy; and the ongoing UYSS Individual EA. The section concludes with a discussion of the current situation and champions of sustainability in York Region.

The activities are described below in order of their occurrence. Our findings and analysis were informed by reviews of background literature; the themes in our conceptual framework (see Figure 6) and evidence from the interviews and workshops; participant observation; and review of policy documents. As noted in Section 2.1, one additional theme, policy windows (Kingdon 2003), emerged from our analysis of the qualitative data. A review of related literature aided the interpretation of our findings, which are discussed below.

### **5.2 SEA-Type Activities in York Region**

#### **5.2.1 Provincial and Regional Planning—Early 1990s to 2006**

Before the existence of the ORMPA (2001), ORMCP (2002), *Places to Grow Act* (2005) and Growth Plan for the Greater Golden Horseshoe (2006), *Greenbelt Act* (2005) and Greenbelt Plan (2005), York Region made growth decisions primarily on the basis of demographic trends and traditional civil engineering issues, including infrastructure capacity (e.g., water supply, wastewater treatment). Now that the above-noted acts and plans are in place, the region bases its decisions on growth strategies that the Government of Ontario directs and land-use constraints detailed in various plans, including the ORMCP and the Greenbelt Plan.

The region's official plan is required to be in conformity with these provincial plans. Sixty-nine percent of the land mass of York Region is now covered by either the ORMCP or the Greenbelt Plan, leaving only small "white-belt" areas and urban densification to accommodate the 62 percent population increase expected to occur in

York Region from 2006 to 2031. Given this evolution of land-use planning, the region is now required to consider extensive strategic direction developed from land-use planning processes, and these are having significant impacts on both master planning and project-level EA processes (interviews 2 and 10, workshops 5 and 7). The York Region case illustrates development and implementation of an emerging regional approach to EA/SEA with strong links to infrastructure and land-use planning.

York Region played a key role in the ORM planning effort, working with the other two regions affected by ORM lands (Region of Peel and Region of Durham) to deal with uncertainty about future development and in response to massive public and NGO interest in protecting the ORM (Whitelaw et al. 2008). York Region also participated in the multi-party ORM Advisory Panel in 2001 that led to recommendations that the Ontario government largely adopted as the basis for the ORMCA and ORMCP (interviews 6 and 7).

These activities indicate the York Region's openness to undertake collaborative planning and work with other stakeholders. Outcomes from this collaborative process regarding the ORM reinforce the positive aspects of collaborative planning, including the ability of multiple stakeholders to achieve broader societal goals together as opposed to when working alone; expanded and innovative public engagement; breaking down of silos; mutual learning; use of local knowledge; and increased trust (Healey 1998; Frame, Gunton and Day 2004).

Section 41 of the ORMCP deals with infrastructure planning requiring EA processes to take into consideration ORMCP policies. Our findings indicate that York Region is actively addressing the policies of the ORMCP and other strategic planning documents (e.g., Greenbelt Plan) suggests evidence of tiering, and is working towards integrated decision making (workshop 6). Tiering, in the case of York Region, is evident through strategic direction provided by the ORMCP and Greenbelt Plan to infrastructure master planning processes and influence on project-level EA (Dalal-Clayton and Sadler 2005; Jones et al. 2005; Partidário 2000).

### **5.2.2 EA and Construction of the 16th Avenue Trunk Sewer**

The 16th Avenue Trunk Sewer EA and construction process led to the opening of a "policy window" (Kingdon 2003) of opportunity for York Region (interviews 3, 10, 14 and 15). Looking through the lens of policy windows, as conceptualized in the policy-making literature, seems an appropriate way to address the emergence of SEA-type approaches within York Region. Kingdon (2003) describes policy windows as opportunities for action on given initiatives that present themselves and stay open for only short periods of time.

Policy windows are transitory opportunities during which the likelihood of adopting new policy or legislative proposals is greater than usual (Solecki and Michaels 1994). In this context, the policy windows concept is useful in describing and analyzing what happens in the agenda-setting process in public bureaucracies. As Kingdon (2003) argues, policy windows open infrequently but despite their rarity can result in major changes in public policy.

Kingdon (2003) describes how separate streams of problems, solutions and politics converge to move an issue onto the public policy agenda and towards potential governmental action. The problem stream relates to how the problem is defined and has evolved. The solution stream includes the set of potential solutions to the problem. And the political stream is the state of politics and public opinion on the issue (Michaels, Goucher and McCarthy 2006). Kingdon labels the convergence of these three major streams "coupling" and describes how these independent streams "flow" through the system all at once, each with a life of its own. They become coupled, or put on the policy agenda, when a window of opportunity is opened (Thurber 2003). Kingdon (2003) asserts that an issue is most likely to achieve public agenda status when public problems, policy alternatives and political opportunities intersect. Furthermore, these windows appear when a major incident or accident occurs that requires action. The "focusing event" is a sudden, uncommon event (such as a disaster or a crisis) that leads to harm or exposes the prospect of great devastation, which leads to policy change (Birkland 1997).

One influence on policy change is "the inexorable march of problems pressing in on the system" (Kingdon 2003: 16), and a crisis or a focusing event might signal the emergence of such problems. In the York Region case study, a focusing event in the form of a crisis that occurred during the construction phase of the 16th Avenue Trunk Sewer project in 2002/03 (one of the 1997 YDSS Master Plan projects) led to recognition of problems. A number of interviewees suggested that sometimes a crisis is needed to promote change (interviews 3, 10, 14 and 15). In the York Region case, the problem stream (i.e., EA crisis), a viable solution (i.e., a more strategic, collaborative and integrated approach to EA and planning) and the political will to enact the solution (in the form of a letter from the Minister of Environment—see Section 3. 6) all converged, or "coupled," to provide a viable opportunity for policy change. This collaborative research project to explore SEA in the York Region context resulted from the opening of a policy window.

On the basis of their experience with the construction phase of the 16th Avenue project, a number of interviewees raised the issue of how contracts are tendered (interviews 9, 10, 14, 15, 16, 18 and 20). Contract tendering contributed to the 16th Avenue focusing event discussed above. Design/build contracts in which the contractor designs the project and, once the EA is done, also takes part in the construction phase proved to be problematic for a number of reasons. The main issue was mitigation measures that were delegated to the responsibility of the contractor; the more measures needed, the less profit the contractor makes (interviews 9 and 18). The clear implication here is that the contractor has a large incentive to make the least possible effort in addressing mitigation measures when required (interview 15). This was one of the main issues that turned the 16th Avenue project into a focusing event. Because the contractor was responsible for mitigation measures, York Region did not respond promptly to the public's complaints about problems (e.g., de-watering resulting in residential wells running dry) that would have required mitigation, since this was the contractor's responsibility (interviews 9, 10, 15 and 20). In the end, York Region was accountable for the problems but initially was resistant to recognizing that they existed. The region's delayed response amplified the problems in the minds of the public

(interviews 3, 10 and 16).

Numerous lessons were learned by taking advantage of the policy window that the 16th Avenue EA focusing event opened. These lessons included broader, more effective consultation; consideration of strategic provincial land-use planning direction; and improved contract and tendering processes. These lessons were subsequently applied to the 19th Avenue Interceptor Sanitary Sewer EA discussed below.

### **5.2.3 19th Avenue Interceptor Sanitary Sewer EA and Collaboration with STORM**

York Region embarked on a more open and collaborative approach for the 19th Avenue EA project. This resulted from the problems with the 16th Avenue Trunk Sewer EA and construction phase, and resulting conditions that the Ontario Minister of the Environment dictated (see Section 3.6). The 19th Avenue Class EA project team created the Interceptor Sewer Advisory Committee (ISAC) to provide public input to the project team. Intervener funding was provided for members of the ISAC, to retain independent expert advice. The ISAC is an example of a collaborative planning approach applied to a Class EA (interviews 2, 6, 8 and 15). Flowing directly from the ISAC process, a series of meetings was initiated between the executive director of STORM and York Region water and wastewater staff to jointly explore opportunities for a collaborative process to ensure that the views of ORM stakeholders would receive proper consideration. Despite these more open and collaborative approaches, a number of limitations in the 19th Avenue EA were identified: inadequate access and time to assimilate new information; over-reliance on consultants to run the process; and overly complicated reporting mechanisms that served only to obfuscate the key issues (interviews 9 and 15).

The experience with the 19th Avenue EA and the policy window that opened as a result of the 16th Avenue EA led to a York Region initiative to establish a formal collaborative agreement with STORM to work with York Region in its efforts to become a leader in EA practice. This initiative opened initial dialogue with stakeholders formerly viewed as outsiders, with the objective of bringing innovation to their EA processes (interviews 3 and 15). The ultimate viability of this collaborative effort has yet to be determined, as key staff who were originally involved have moved on to new positions within York Region and other organizations. This collaboration is limited to one NGO, and although STORM is the single largest NGO on the ORM, it represents only one perspective. As such, the initiative cannot be viewed as a significant move to more transparency or meaningful dialogue. The initiative is, however, an example of how SEA can be viewed as a communication tool (Vicente and Partidário 2006).

### **5.2.4 Development of Sustainability Principles to Guide EA Processes Within York Region**

Traditionally, planning and EA in York Region have been mostly development oriented. Growth and increase in population numbers have always pushed the agenda to

“develop and build more roads and more pipes” (interviews 2 and 11). To some extent, York Region has realized that there are limits to growing and developing in this manner. As a result, an explicit commitment to sustainability has been recognized as being essential to bringing important improvements in terms of what gets addressed and the overall way in which decisions are made (York Region 2007e).

Our research also identified some tiering associated with the work York Region has completed on sustainability. This was initiated through the development of *Vision 2026: Towards a Sustainable Region*—an exercise to “establish a strong vision for the future” and create a strategic plan for York Region with an explicit commitment to “forging a legacy of sustainability that is based on a sustainable natural environment, healthy communities and economic vitality” (York Region 2007a: 2). This process was somewhat unique in terms of public involvement, as it was based on “input from the public and stakeholders during the Region’s Sustainability Symposium, the Towards Sustainability in York Region (TSYR) Advisory Group and the Growth Management Public Engagement Initiative” (York Region 2007e).

To further “translate the concept of sustainability into practical action,” the region engaged in the development of the York Region Sustainability Strategy (York Region 2007e: 2). The sustainability strategy was influenced by provincial growth-management and conservation policies (e.g., *Places to Grow Act*, ORMCP) and is now linked to both infrastructure master planning and project-level EA (e.g., UYSS—see Section 5.2.6). Academic input into the sustainability strategy resulted from a workshop (workshop 1, organized by our research team) that the University of Waterloo hosted in June 2007. The focus of the workshop was on developing sustainability strategy principles and criteria relevant to master planning for transportation and for water and wastewater. The principles in the sustainability strategy were then further refined and adapted to the specific context of the master plan review and updating process for each type of infrastructure (i.e. transportation, and water and wastewater); for each master plan, a set of sustainability principles and criteria were developed for use during the review and updating process and during consideration and selection of preferred alternatives. This process can be described as having what the literature refers to as a trickle-down effect—proceeding from the vision developed for Vision 2026, to the generic sustainability principles in the sustainability strategy, to the specified sustainability criteria developed to guide the master plan update process and on down to the project level.

In addition, with the publication of York Region’s Sustainability Strategy, integration of biophysical, social and economic dimensions can be facilitated, as the document is intended to guide all regional activities. This is especially important for growth-management planning and its infrastructure component in a region with restricted land available for development. Focusing on integration can help reveal many opportunities in growth-management planning, such as integrating transportation planning with land-use planning<sup>2</sup> and urban design to minimize single-occupant vehicle trips while encouraging the use of an efficient public transportation system that reduces traffic

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<sup>2</sup> One of the sustainability principles used during the updating process of the transportation master plan relates to the integration of transportation planning and land-use planning (York Region 2007f).

congestion, pollution and resource use; a combination of reducing water inflow and infiltration (i.e. groundwater leaking into the pipe or water leaking out of the pipe) while taking measures to conserve water rather defaulting to the traditional, engineering solution of constructing one big pipe. These are emerging examples of links that are being made in practice between SEA and sustainability assessment (workshops 1 and 2; Gibson et al. 2005).

Nevertheless, the SEA-type process in York Region still misses part of the picture by paying limited attention to broader issues such as equity and social well-being (other than housing affordability and access to transportation, for example) (workshop 1; Gibson et al. 2005). The translation of the sustainability strategy principles into context- or sector-specific sustainability principles and criteria in the update processes of both the transportation master plan and the water and wastewater master plan is certainly promising and a novel approach to formulating these plans. These sustainability initiatives can be seen as a sign that the region is striving to take the sustainability paradigm more seriously.

### **5.2.5 Organizational Changes to Coordinate Water, Wastewater and Transportation Master Planning Under the York Region Sustainability Strategy**

Some interviewees criticized the previous water and wastewater master plan (i.e., YDSS Master Plan), indicating that the master planning process needed to be rethought in terms of the strategic nature and overall role of the process, and addressing issues in a more conceptual, generalized and flexible manner (interviews 8, 11 and 14). Flexibility and adaptability are crucial components for an effective planning system, given all the different contexts of applications in terms of scale, tiers of decision making and sectors (Noble 2005). This means that the planning process must be designed in such a way that it is adaptable to different application contexts, as well as to different tiers of decision making. In the past, master plans were too inflexible in terms of foreclosing viable alternatives, leaving little space for discussion of alternatives at the project level (interviews 8 and 14). This issue of foreclosing alternatives needed to be revisited so that the goals and objectives of strategic initiatives (e.g., official plans, master plans) could be addressed by evaluating all potentially reasonable alternatives (interviews 3 and 14). Evidence of this happening in York Region can be identified in the UYSS project, which used to be a “big pipe” project that now provides opportunities to consider other reasonable alternatives, including dealing with reduction of infiltration and inflow, increasing water conservation and potentially building a smaller pipe (workshop 6). This evidence highlights the importance of a flexible, adaptive approach to SEA, as described by Noble (2005).

Another source of evidence of a more integrated approach to decision making in York Region is the recent simultaneous review and update of both the transportation master plan and the water and wastewater master plan. This coordination resulted in an attempt to better coordinate or at least improve communication between institutions. These updated master plans are being used to update the regional official plan and guide project-level EAs (workshop 10). In addition, both master plans developed

specific sustainability principles that highlight and incorporate public involvement and the role of communicating with the public:

*Transportation master plan sustainability principle 10:* “Further encourage communication, consultation and engagement: York Region will plan for and implement transportation infrastructure and services in an open, transparent and accountable manner based on broad consultation, citizen engagement and strong communications” (York Region 2007f).

*Water and wastewater master plan sustainability principle 9:* “Communication, consultation and engagement: York Region is committed to planning and implementing water and wastewater services in an open, transparent and accountable manner based on broad consultation, citizen engagement, strong communications and to building public consensus toward the need to practice sustainability” (York Region 2008c).

These criteria have increased public consultation and engagement with respect to master planning in York Region, which contribute positively to improved SEA processes (Noble 2005; Gibson et al. 2005).

## **5.2.6 Ongoing UYSS Individual EA**

York Region has initiated the UYSS Individual EA project to identify practical and sustainable solutions that will provide additional sewage servicing capacity related to planned growth in upper York Region. The service area is made up of the communities of Holland Landing, Queensville and Sharon, and the Towns of Newmarket and Aurora (see Figure 1). The UYSS project is being conducted as an EA, under the Ontario EAA. The project may also be subject to the requirements of the Canadian *Environmental Assessment Act*. York Region has retained a consortium of consultants, led by Conestoga-Rovers and Associates, to complete the requirements of the EA process (workshop 6).

In September 2008, our research team was invited to participate in the chartering session for the UYSS EA, which included representatives from York Region’s departments of Planning and Development and of Transportation and Works (which includes the Water and Wastewater Division), and from the consulting consortium. This unprecedented session was meant to lay the groundwork for what is intended to be new and more integrated, strategic, sustainability-oriented EA (workshop 6). Participant observation in this closed meeting made clear that the aforementioned York Region Sustainability Strategy, related growth-management targets, and emerging water and wastewater and transportation master plans provided a context for this project. This was an example of a regional approach to “tiered” and more integrated decision making (Stinchcombe and Gibson 2001; Dalal-Clayton and Sadler 2005; Arts, Tomlinson and Voogt 2005; Jones et al. 2005). By inviting members from different departments, as well as our research team (which includes a member of a regional NGO) into this initial session, York Region demonstrated some commitment to a more integrated and transparent approach to environmental decision making.



In discussing the evolution of project EA in York Region, interviewees indicated that expectations regarding timing and costs of EAs have changed (interviews 3, 5 and 15). Interviewees noted that, in the past, project EAs were mostly done using a low-cost desktop study (interviews 3 and 6), with obvious limited spatial, temporal and conceptual scope. The need to broaden the scope of EAs has been identified as an important step in improving the overall planning and EA process in York Region (interviews 2, 14 and 18). This requires that, at the project level, more detailed background studies (i.e., hydrogeology in York Region's case<sup>3</sup>) be conducted, the acknowledgement that EA processes will probably "take more than six months to be completed" (an embedded assumption of the past), and that a broadened conceptual scope take into account sustainability considerations found in the overall sustainability strategy principles and related master plans (interviews 2, 3 and 8).

York Region staff and consultants working on the UYSS indicated that these new approaches the interviewees identified were part of the UYSS project (workshop 6). With respect to the UYSS case, we determined that the tiered approach (strategic direction filtering down to the project level) is having positive impacts on the EA process in the early stage of project conception (workshop 6).

The UYSS project team has indicated that, on the basis of the sustainability criteria developed for the water and wastewater master plan, further specified criteria for the project itself will be developed and used in considering and assessing reasonable alternatives. It is also clear that staff and consultants working on the UYSS were taking into account strategic direction from the ORMCP and legislation, such as the *Lake Simcoe Protection Act* (workshop 6). It is, however, too soon to evaluate the actual influence of the ORMCP's policies and other plans and legislation on the EA in terms of scoping and evaluation of alternatives, as the EA has only recently been launched.

Interviewees indicated that York Region has engaged in changing its approach to public participation. Early and more frequent public consultations have recently become more common in York Region's activities, something that in the past many people—especially residents and NGO representatives—saw as a serious deficiency in York Region's planning and EA processes (interviews 6, 7, 16 and 17). At the project level, "constructive engagement"<sup>4</sup> has been used in a few recent initiatives, resulting in what some interviewees perceive to be better outcomes (interviews 3, 10, 15 and 16). Engaging the public has been associated with increasing transparency in planning and decision making in York Region, as well as improving accountability and the

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<sup>3</sup> As interviewee 1 mentioned, in the past York Region would spend limited resources (less than 1% of project costs) on hydrogeology studies during the EA process. Now, 5 percent of the project cost is allocated to hydrogeology studies.

<sup>4</sup> "Constructive engagement" is the term used by Ogilvie, Ogilvie & Company, the firm hired to facilitate a few of York Region's projects. The five main principles of constructive engagement are (1) respect for the participants concerns vs. undertaking the process as a necessary hurdle; (2) engage participants vs. "trying to smoke it past 'em"; (3) empower participants with user-friendly information and education vs. confuse participants with techno-babble; (4) value participants opinions and accommodate participants suggestions vs. "hide participants suggestions in the Appendix"; and (5) make sure the processes are open, transparent, informed and fair vs. holding one public information centre open from 6:00 to 9:00 on a "holiday." (Source: Ogilvie, Ogilvie & Company, <http://www.mobalizers.com/>)

relationship and communication with consultants and the public (interviews 6, 7 and 11).

During the workshop our research team held with the UYSS EA team to explore innovative ideas for application in EA processes, the idea was discussed of establishing a long-term standing advisory committee on EA in York Region, consisting of individuals involved in ORM planning and management to assist with interpretation. The idea for such a committee came from the collaboration between York Region and STORM already discussed (workshop 6). The potential of bringing together on a long-term basis such individuals with complementary knowledge of strategic planning, such as the ORMCP and Greenbelt Plan, was thought to be a useful idea; however, no such committee has been formed to date.

### **5.2.7 Champions of Sustainability and the Current Situation**

When trying to develop a culture of sustainability in an organization such as York Region, someone to champion the cause is needed (interviews 10 and 17). As one interviewee (interview 10) mentioned, "Cultural change in the organization is really critical. You've got to have champions, and it really does take leadership, because the organization will not change by itself. You've got to have the right level of people or series of people." Sometimes this will come from the chief administrative officer or even someone at a lower level in the organizational hierarchy. In York Region, a group of champions was formed to deal with the planning issues that arose after the 16th Avenue EA and construction problems. They played a significant role in pushing a new agenda for a different approach to planning and EA in York Region (interview 15). It is important to note, however, that at the time of writing this report, most of these champions had moved within or left the organization, which raises doubts as to the continuity of the positive aspects of SEA in York Region identified above.

## 6 Implications and Recommendations for SEA Practice and Theory

### 6.1 *Implications and Recommendations for Practice*

Our findings indicate that all themes (including transparency and meaningful public involvement, tiering and broader spatial and conceptual scope, integrated adaptive decision making, sustainability and communication) within the SEA portion of our conceptual framework (see Figure 6) apply to a degree to the York Region case. In addition, a sixth theme, policy windows, also emerged. On the basis of our analysis of the York Region case, viewed through the lens of these themes, we present eight implications and corresponding recommendations for practice:

1. **Implication: Better coordination between land-use planning and EA processes.**

The York Region case clearly demonstrates the value of SEA as a communication tool and the need for coordination and integration between land-use planning and EA. York Region master planning is increasingly influenced by growth-management strategies, regional land-use plans and other legislation that provide strategic direction. Furthermore, regional land-use plans, such as the ORMCP, require EA processes to take into consideration strategic, as well as site specific, information with respect to justification and need, scoping and assessment of alternatives (Government of Ontario 2002: section 41). Municipalities are well positioned to enhance integration and coordination, as these organizations have legislated responsibility for both land-use planning and EA processes. As such, larger municipalities have departments that deal with land-use planning and EA, making better coordination and integration possible within the organization.

**Recommendation:**

We recommend that municipalities actively work on integrating and better coordinating land-use planning and EA processes by using SEA as a communication tool between planning and EA practitioners. The timing of land-use plan reviews should be coordinated with infrastructure master planning processes. Furthermore, municipalities should work at better integrating land-use planning and infrastructure and EA departments.

2. **Implication: Environmental assessment and sustainability.**

The York Region case study illustrates the important role sustainability can play in planning and the EA process. Gibson et al. (2005) indicate that broad sustainability criteria need to be contextualized for application in practice. Broad sustainability visions (e.g., York Region's Vision 2026) can be refined (e.g., York Region Sustainability Strategy) for use in SEA processes such as master planning and through specific project-level sustainability criteria, as is taking place for the UYSS EA.

**Recommendation:**

We recommend that municipalities under moderate to significant development pressure and that require significant EA work undertake to develop sustainability visions and strategies and translate these for use in master planning and further use at the project level.

**3. Implication: SEA as a communication tool.**

Once York Region staff were exposed to the SEA concept, many actively used it to continue to improve communication between departments and to better integrate land-use and EA planning processes. We believe our research points to this aspect of SEA as having a particularly positive impact within the municipal context in terms of tearing down the silo mentality that characterizes departments concerned with land-use and infrastructure, and EA.

**Recommendation:**

We recommend that further applied research be carried out in a municipal context to explore the potential of SEA as a communication tool to better integrate EA and planning processes and to break down departmental silos.

**4. Implication: Active promotion of tiering.**

Building on the above implications for practice, the York Region case suggests that tiering has significant potential at the municipal level. Strategic and site-specific information from regional- and provincial-level plans (e.g., ORMCP) is now influencing project-level EAs (e.g., UYSS). Furthermore, the sustainability criteria discussed above are filtering down and becoming more focused at the project level.

**Recommendation:**

We recommend that municipalities actively and explicitly work to encourage tiering. Municipalities should extract strategic and project-level direction from progressive land-use planning documents for use in master planning and project EA.

**5. Implication: Improved transparency and meaningful public engagement.**

The York Region case demonstrates increased consultation, especially at the project level (e.g., UYSS EA) and some improvements in transparency and engagement at the strategic level. The region took some tentative steps by entering into a collaborative agreement with STORM and is contemplating setting up a long-term EA advisory committee.

**Recommendation:**

We recommend that medium-sized and large municipalities work on implementing the better practices public engagement criteria discussed in the background section of this report (Section 2.4.2) and that long-term EA advisory committees be established, comprising individuals involved with land-use planning, EA and other related areas (e.g., stewardship).

**6. Implication: Improved accountability through contracting practices.**

One of the main issues with York Region's troubled 16th Avenue EA was that the contract was tendered as a "design-build" one. This means that the

consultant/contractor was responsible for the project, from design through construction, for a fixed price to the region. When contracts are structured this way, the region effectively passes the risk of problems or delays, as well as accountability, on to the consultant/contractor. The result in this case was the emergence of an “accountability gap” when problems and delays arose; that is, when residents’ wells went dry due to unanticipated effects of de-watering, the consultant/contractor delayed taking action. Problems and delays effectively cost the consultant/contractor money. The accountability gap emerged, as the consultant/contractor was accountable to its owners/shareholders for making a profit and not to the common good of York Region’s citizens, which was York Region’s responsibility.

**Recommendation:**

We recommend that municipalities avoid the use of design-build contracts in cases where uncertainty is elevated or decisions about citizens’ interests involve high stakes.

**7. Implication: Taking advantage of policy windows.**

Our research increased our understanding of the role of a focusing event (e.g., 16th Avenue EA) in York Region, and we interpreted this event through the concept of a policy window (Kingdon 2003). Planning and EA practitioners should become more familiar with the concept and requirements of the opening of a policy window, in the form of “coupling” the problem, solution and political streams to better take advantage of such opportunities to make innovative policy change.

**Recommendation:**

We recommend that municipalities and other stakeholders be open to potential policy windows and seize them as opportunities for positive change.

**8. Implication: Need for long-term champions.**

The York Region case clearly demonstrates the important role of champions in initiating and sustaining positive changes towards improved land-use planning, EA and SEA. A group of committed planners and EA practitioners actively worked to improve York Region processes. These individuals learned about and acquired extensive knowledge of SEA in the context of York Region. Unfortunately, they have moved on to different positions, leaving a void. The implications of this are unknown.

**Recommendation:**

We recommend the establishment of an advisory committee to provide input on the use of an SEA-informed approach to EA and infrastructure planning. Such a committee could be the retainer for contextual knowledge and succession planning and training. A type of “champion succession planning” could also be fostered through this committee, by scouting for and training future champions. A training plan or manual could be prepared for future champions.

## **6.2 Implications for Theory**

Our contributions to SEA theory are expressed through the conceptual framework

included in the background section of this report (see Figure 6). This conceptualization appears valid in the context of the York Region case. The strength of the framework lies in the explicit integration of land-use planning with master infrastructure planning and project-level EA. The framework acknowledges the opportunity, at a regional scale, to better integrate strategic corporate policies, official planning, infrastructure planning and project-level EA through the concept of SEA.

Additional implications for SEA theory focus on aspects that are not emphasized in the literature. Many SEA conceptualizations focus on discrete, formal assessment of plans, policies or programs following an EA-style protocol (e.g., Bass 2005; European Commission 2008; Fischer 2007), and they also concentrate on the potential for EA principles and practice to improve planning and policy-making processes (e.g., Hildén, Furman and Kaljonen 2004). Our findings, in the context of the York Region case, suggest three additional conceptualizations of SEA:

1. Similar to Vicente and Partidário's (2006) conceptualization of SEA as an ongoing, communication tool, our conceptualization of SEA is that it could be used as a vehicle for improved communication, and we believe the concept can be extended through the application of collaborative planning theory.
2. Similar to conceptualizations of SEA and sustainability assessment that Haq (2004), Dalal-Clayton and Sadler (2005), Chaker et al. (2006) and Gibson et al. (2005) have provided, our analysis emphasizes the importance of broad sustainability principles that are contextualized for practice through tiering processes (i.e., progressively more detailed sustainability criteria from the broad strategic level down to the project level).
3. The policy science literature, including Kingdon's notion of a policy window (2003), can contribute to the further development of SEA as a communication tool by identifying opportunities to add the concept into the policy stream.

## 7 Conclusions

As stated at the outset, the purpose of this case-based, collaborative research project was to extend practical and theoretical understanding of SEA to the related, but in practice poorly coordinated, processes of project-level EA, master planning and regional land-use planning. In York Region, a voluntary, ongoing, communication and process-oriented type of SEA is in place, and the lessons learned from York Region's experience provide useful insights about integration and tiering in planning and decision making, especially in the context of growth. One of the main benefits of SEA is tiering, that is, setting a strategic context for lower tiers of decision making, including project undertakings. A vital role of tiering in SEA is to encourage procedural guidance to those practitioners undertaking lower-tier assessments (Gibson 1993; Stinchcombe and Gibson 2001). Procedural guidance can "establish reliably defined and appropriately rigorous processes for various sorts of subsequent assessments, specifying[,] for example, the scope and nature of necessary documentation, consultation and reviews" (Stinchcombe and Gibson 2001: 11). Because of tiering, SEA has the potential to streamline decision making so that decisions taken at one planning level may not need to be revisited at subsequent stages of decision making (Thérivel 2004), potentially reducing costs, time and confusion (Ortolano and Shepherd 1995).

The descriptions of the activities in Section 5.2 suggest that York Region's approach to planning and EA processes appears to have shifted gradually from the traditional development-oriented approach to planning and EA towards a more strategic, sustainability-oriented approach. Opportunities for change, articulated as a policy window, appeared after problems were recognized during a project-level undertaking. As a response, potential solutions were sought, at both the project and strategic levels. However, it is probably reasonable to say that it will take years for many of the results of the SEA-type approach in York Region to become evident. Procedural and some structural changes (tiering, better consultation, development and initial use of sustainability criteria) can already be identified. Positive outcomes are likely to take more time. Nonetheless, looking at this SEA-type approach in York Region has led to some useful insights, implications and recommendations for the theory and practice of EA and SEA.

Institutionalizing innovations or lessons learned is essential for not reverting to making the same mistakes as in the past. Since the problems with the 16th Avenue project, York Region has had in place, for project managers, a system of capturing lessons learned and sharing them; program managers meet frequently to talk about lessons learned. This has been recognized as an important component of the organization for building adaptive capacity (Armitage 2005) and learning from past experience. However, champions and the role of leadership have also been identified as essential in fostering innovations and ensuring their durability (Aragon-Correa, Garcia-Morales and Cordon-Pozo 2007; Ginsberg and Abrahamson 1991). Given the current situation in York Region and the changes in key staff, one may legitimately question the long-term durability of some of the recent SEA-type changes initiated. Further research would be required to assess the increase in adaptive capacity, social learning and

durable innovation that York Region might continue to experience as a result of incorporating SEA into its organizational dynamics. Such research would probably highlight the continuous, cyclical dynamics of natural and human institutional systems, as well as the evolution of concepts and ideas (Gunderson and Holling 2002).



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