

MODELS OF STRATEGIC ENVIRONMENTAL ASSESMENT IN CANADA

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INTRODUCTION

In 2006, a sub-committee on Strategic Environmental Assessment (SEA) (the SEA Sub-committee) was established to make recommendations to the Minister of Environment's Regulatory Advisory Committee on the *Canadian Environmental Assessment Act* concerning the definition and purpose of SEA, meaningful linkages between SEA and project environmental assessment, and the role of public and Aboriginal participation in SEA. The decision to establish the Sub-committee fulfills a federal government commitment made in response to the House of Commons Standing Committee on Environment and Sustainable Development and its second report on Bill C-9, *An Act to Amend the Canadian Environmental Assessment Act*. As part of its response, the Government indicated that the Minister of Environment would ask the Regulatory Advisory Committee to provide recommendations on how to improve SEA in Canada. The overall objective of the Sub-committee's work is thus to explore opportunities for non-project EA to complement project EA and to strengthen EA in Canada.

Study Purpose

Strategic Environment Assessment has been ongoing in Canada for a number of years, yet there currently exists limited knowledge of the nature and effectiveness of SEA. Part of the challenge is that considerations as to what SEA really is, what it delivers and how it should perform are still far from a consolidated stage (Vicente and Partidario 2006). Aside from selected studies of SEA application (e.g. Auditor General 2004; Hazell and Benevides 1998; Noble 2004, 2003), there has not been an examination of Canadian SEA models and frameworks that includes both formal and informal SEA applications across a range of policy, plan, and program (PPP) initiatives.

In March 2007 a project was initiated by the Sub-committee to better understand the current nature and characteristics of SEA practices in Canada, to develop a set of SEA principles and criteria for Canadian SEA, and to describe and critically analyze past and existing SEA and SEA-like processes that most closely meet the proposed principles and design criteria.

This report presents a review of viable models for SEA with a view to understanding how each contributes to integrated decision-making and incorporates a number of proposed principles and design criteria for SEA in Canada. To accomplish this, a manageable and diverse set of past and recent SEA and SEA-like models and applications are described and critically analyzed. The intent is not to comparatively evaluate recent SEA cases, as any single set of criteria cannot be used widely and unequivocally; rather, each case is explored individually based on a rich variety of possible criteria deemed to be characteristic of desirable SEA models and frameworks. In each case, attention must be given to the context, time, actor-perspective, nature, and intentions of the specific SEA or SEA-type activity (Thissen 2000).

Report Structure

In the sections that follow, a brief overview of SEA development and its various forms is presented, followed by a description of the study methods, case study summaries, and case evaluations. A number of general observations are then made concerning SEA practices in Canada and the implications for SEA development. Detailed case study descriptions and evaluations are included in an appendix to the report.

OVERVIEW OF STRATEGIC ENVIRONMENTAL ASSESSMENT ORIGINS AND APPROACHES

Strategic Environmental Assessment is perhaps one of the most diverse and rapidly growing, yet least understood, forms of impact assessment. Early definitions of SEA conceptualized the process as an extension of environmental impact assessment (EIA) upstream, focusing on the environmental assessment of already proposed PPPs. More recently, however, SEA has adopted a much broader and varied perspective focused also on the integration of environmental considerations with PPP development processes.

Inherently a decision support tool, SEA is designed to integrate environmental and social issues into higher-order PPP decision making processes, bringing together different aspects of problems, different perspectives, and providing possible solutions in an accessible form to the decision maker (Sheate et al. 2003). The potential benefits of SEA have been discussed widely in recent years; it is not the intent here to review this literature. In short, SEA allows for an early, overall analysis of the relationships between PPPs and the potential effects of the projects that emerge from those PPPs (Sadler 1996). In this way SEA focuses on the 'source' of environmental impacts rather addressing their symptoms, and cascading down toward subsequent assessment and decision process. Strategic Environmental Assessment should take place before decisions are made, when major alternatives are open, contributing to PPP their formulation and development rather than focusing only on the impact(s) of their implementation (Dalal-Clayton and Sadler 2005). Having such a framework in place well before project developments become a reality is critical to ensuring effective regional environmental effects assessment and management (Creasy 2002).

Since the rapid growth of international interest in SEA in mid 1990s, several authors have coined various definitions for SEA and SEA itself has been institutionalized under many labels. The name has been used synonymously with many and varied forms of assessment and appraisal, including *strategic environmental analysis, integrated assessment, policy appraisal, sustainability appraisal, regional environmental assessment, programmatic impact assessment, and sectoral-based assessment*. This lack of standardized terminology often confuses discussion on SEA (Dalal-Clayton and Sadler 2005). That being said, SEA has much less to do with the 'name tag' than it does with underlying strategic principles and characteristics – irrespective of the impact assessment, planning, or appraisal framework.

SEA origins and development

Canada has a rich history of strategic forms of impact assessment, with the current system of SEA at the federal level shaped by a number of influential developments dating back to the 1970s (Noble 2005; Table 1). The development and evolution of SEA can be divided into three broad phases (Sadler 2001). The 1970s to the late 1980s marked the formative stage of SEA when the legal and policy precedents were established, in particular the US *National Environmental Policy Act* (NEPA). In Canada, it was the work carried out through the former Canadian Environmental Assessment Research Council that provided the basis for Canada's process of policy and program assessment. Strategic forms of impact assessment were operationalized in the form of area-wide reviews, public review panels, and concept-based assessments under the Guidelines Order. None of these early assessments were recognized as 'SEA'; however, they have much to offer current SEA systems and practices.

Table 1. Influential developments in Canadian federal SEA

1973	Foundations laid for environmental assessment in Canada with federal approval of a directive establishing a policy-based federal environmental assessment process.
1975	First Environmental Assessment Review process (EARP) completed for the Point Lepreau nuclear power generating station.
1984	EARP registered formally as a guidelines order with a strategic scope that includes any initiative, undertaking, or activity for which the federal government has a decision-making responsibility.
1989	Release of the Bridgewater report on the <i>EIA of Policies in Canada: a Beginning</i> .
1990	Separation of strategic level assessment from project-based EIA. Bill introduced to establish an environmental assessment act, but in absence of strategic-level application. Announcement to establish a separate, non-legislated process for policy and program review.
1992	A Federal Environmental Assessment Review Office (FEARO) reform package introduces <i>Environmental Assessment on Policy and Program Planning: a Sourcebook</i> , the first initiative to develop a separate system of strategic environmental assessment.
1993	FEARO procedural guidelines released, in the form of a directive, for policy and program assessment.
1995	Federal government releases <i>Strategic Environmental Assessment: A Guide for Policy and Program Officers</i> .
1999	Canada strengthens its commitment to SEA with release of the <i>Cabinet Directive on the Environmental Assessment of Policies, Plans, and Programs</i> .
2004	Federal departments and agencies required to prepare a public statement of environmental effects where an SEA has been conducted. Auditor General reports on inconsistencies in SEA application within federal government departments and agencies.
2006	A sub-committee on SEA established to make recommendations to the Minister of Environment's Regulatory Advisory Committee on the <i>Canadian Environmental Assessment Act</i> concerning the definition and purpose of SEA, meaningful linkages between SEA and project environmental assessment, and the role of public and Aboriginal participation.

Source: Based on Noble 2005

The 1990s marked the formalization stage of SEA, when various provisions and forms of a 'strategic environmental assessment' were instituted. This was also the decade of a number of high profile international developments including the UN Earth Summit of 1992 and the World Bank's recommendation in 1999 for the EA of policy. The federal SEA process in Canada was first established by Cabinet Directive in 1990, as a non-statutory procedure and separate from EIA legislation, "making it the first of the new generation of SEA systems that evolved in the 1990s" (Dalal-Clayton and Sadler 2005: 61). Procedural guidance was contained in *The Environmental Assessment Process for Policy and Programme Proposals* (FEARO 1993), with implementation subject to oversight by the Federal Environmental Assessment Review Office (FEARO) and later the Canadian Environmental Assessment Agency (the Agency). Critiqued for inconsistencies and inadequacies in its application, a revised Directive on SEA was issued in 1999 to strengthen the role of SEA in PPP decision-making and clarifying the obligations of federal departments and agencies.

From 2000 onward marked the *expansion stage* of SEA when international legal and policy developments catalyzed the adoption and use of SEA. As of 2004, for example, Dalal-Clayton and Sadler (2005) reported SEA systems in place in more than 25 countries. In Canada, updated guidelines for implementing the revised Directive were prepared by the Agency in 2000 and as of January 2004, all federal departments and agencies are required to prepare a public statement of environmental effects whenever a full SEA has been conducted.

Globally, SEA remains far less advanced than EIA and few nations currently have formal SEA systems. In those cases where SEA systems do exist, the provisions and requirements for assessment, as well as the nature and role of SEA in the PPP and decision making process, vary considerably. Dalal-Clayton and Sadler (2005) suggest that in many respects SEA practice has run ahead of theory in applying its ideas and tools in a policy or planning context.

SEA models and frameworks

In Canada, similar to Denmark, Hong Kong, and the Netherlands, SEA as a formal procedure is undertaken as a separate or modified process from EIA and primarily under a national directive or equivalent order. At the provincial level, however, and under various applications of land use planning, regional environmental studies, and policy appraisal, different types of SEA institutional models can be recognised (see Dalal-Clayton Sadler 2005; Fischer 2005; Sheate et al. 2001), namely:

- constitutional or legislative models that are based on legal provisions or generic or consolidated legislation that imposes directives, responsibilities, or duties on public agencies and departments;
- process or strategy models where strategic assessment is based on a government-led strategy or initiative for improved environmental integration and planning; and
- *ad hoc* models that exist outside of any coordinated environmental assessment framework or strategy.

In addition, there are a variety of possible SEA frameworks including EIA-inspired or formal SEA, policy analysis or appraisal-inspired SEA, integratory SEA, and *ad hoc* SEA (Table 2). As such, there is considerable variability in SEA systems and models of application and SEA must be seen as an overarching concept and a family of tools. The nature and characteristics of any SEA system or application is dictated in large part by the institutional frameworks and how and where SEA fits into the relevant decision-making process (Sheate et al. 2001).

Table 2. SEA frameworks and characteristics

SEA framework	Description
EIA-inspired	<ul style="list-style-type: none"> ▪ <i>EIA-based</i>: modeled closely after or applied in accordance with EIA legislation ▪ <i>EIA-modified</i>: SEA as a separate or parallel process to EIA, as an administrative procedure ▪ <i>Dual-track</i>: EIA-based process specific to PPPs (e.g. Dutch E-test)
Policy analysis or appraisal-inspired	<ul style="list-style-type: none"> ▪ <i>Environmental appraisal</i>: no formal SEA, but a near-equivalent process of policy and plan appraisal ▪ <i>Regional assessment</i>: SEA for sector or regional development strategies for a geographic area ▪ <i>Sustainability appraisal</i>: SEA linked to integrated assessment of the effects of a policy or plan
Integratory	<ul style="list-style-type: none"> ▪ <i>Procedural integration</i>: SEA integrated into PPP process, no separate procedure ▪ <i>Substantive integration</i>: SEA replaced by integrated assessment, no SEA procedure ▪ <i>Integrated planning and assessment</i>: procedurally and substantively integrated system
Ad-hoc	<ul style="list-style-type: none"> ▪ <i>Elements of SEA</i>: methods and approaches that demonstrate the features of SEA and have the same overall purpose

Source: Based on Dalal-Clayton and Sadler 2005

STUDY DESIGN

This study focuses on formal SEA and ‘SEA-type’ models and applications in Canada. By ‘SEA-type’ we are referring to *near-equivalent* processes of environmental appraisal of policies or plans, *integratory SEA* where SEA occurs indistinctive of a planning or policy development process, and *para-SEA* or *ad hoc* applications that reflect SEA principles and methodologies but do not meet the formal definition of SEA (Dalal-Clayton and Sadler 2005). The SEA and ‘SEA-type’ models and case studies are described in Table 3. Based on recent SEA performance evaluations, the number of cases selected for study have ranged considerably from a small set of in-depth case analyses (e.g. Noble 2003) to a cross-sectional analysis of a large number of SEA applications based on the expertise of large multidisciplinary teams (e.g. Sheate et al. 2001). The number of cases identified for this study reflects what is considered to be a balance between the analytical detail that is desired to draw conclusions concerning specific SEA principles and criteria, and the breadth of SEA coverage across a range of sectors and PPPs that can be addressed in a study of this magnitude.

Cases were selected in consultation with the Minister’s Sub-committee¹ on SEA and based on three principal selection criteria: i) the case study must be a completed work, or work near completion, such that sufficient information is available and there is an opportunity to explore the real or potential benefits of the application; ii) there must be sufficient evidence to label the work as a *strategic-level* assessment, or SEA-type application (e.g., integrated SEA, parallel SEA, or post PPP assessment); and iii) there must be evidence that at least some of the proposed principles and criteria are met.

Table 3. Canadian SEA and SEA-type case studies

SEA model and case study	Sector	Participation <i>Public (P)</i> <i>Aboriginal (A)</i> <i>Other (O)</i>	Institutional framework <i>Policy or legislated (P)</i> <i>Informal or ad hoc (I)</i> <i>SEA name tag (S)</i>	Application tier <i>Policy (A)</i> <i>Plan (B)</i> <i>Program (C)</i> <i>Regional (E)</i>
1. Canada-Nova Scotia Offshore Petroleum Board, Misaine Bank SEA	energy	P, A, O	P, S	C
2. Great Sand Hills Regional Environmental Study, Saskatchewan	land use	P, A, O	I	B, E
3. National Capital Commission Core Area Sector Plan SEA	urban	P, O	P, S	B
4. Foreign Affairs and International Trade SEA of WTO Negotiations	trade	P	P, S	A
5. British Columbia Offshore Oil and Gas Moratorium Public Review	energy	P, A, O	P	A
6. Ontario Power Authority Integrated Power System Planning	energy	P	P	B
7. Pasquia-Porcupine 20-yr Forest Management Plan Assessment	forestry	P, A	P	B
8. Capital Regional District Regional Growth Strategy, British Columbia	urban/regional	P, O	I	B, E
9. AECL Conceptual Review of Nuclear Fuel Waste Disposal	waste	P, A	P	C
10. British Columbia Salmon Aquaculture Review	fisheries	P, A, O	P	A

¹ The final set of case studies selected for review differs slightly from the list proposed in the initial work plan. Specifically, the Northern Rivers Basin Study was removed from the case list as further review of the case deemed it a poor fit in light of the case selection criteria and proposed SEA characteristics. The CIDA strategic assessment of the South Asia Earthquake Management Fund was removed due to inadequate information on the case study. The Capital Regional District Regional Growth Strategy, British Columbia, was added at the request of the Sub-committee.

SEA principles and evaluation criteria

Years of international debate on SEA process and principles have led to the development of a set of generic SEA criteria by the International Association for Impact Assessment (IAIA) (2002). Evaluating SEA systems and performance has received considerable attention in the international SEA literature; however, research into the application of these criteria suggests that they are not equally applicable in all decisional contexts and across all systems of SEAs due in part to the variability of SEA models and frameworks. There is indeed considerable evidence to suggest that no universal set of criteria can equally apply to all SEA contexts (Dalal-Clayton and Sadler 2005; Fischer and Gazzola 2006; Noble 2003; Partidario 2005); and not all criteria are equally valid for every SEA, but could vary from the policy to the program level (Fischer 2002).

Nonetheless, standardized evaluation of SEA against normative design criteria is a useful exercise for several reasons. First, it provides an opportunity to identify the 'state-of-practice' across SEA systems based on a common set of principles and criteria. Second, it enables identification of common SEA constraints and opportunities for improvement. Third, it provides an opportunity to refine normative models of SEA principles and criteria to better fit the realities of PPP decisional contexts – as Nitz and Brown (2001) suggest, learning how policy and planning actually work.

The criteria were developed based on initial guidance received from the Sub-committee and drawing upon the IAIA (2002) SEA performance criteria, and then modified based on Thissen (2000), Sheate et al. (2001), Noble (2003), Gibson et al. (2005), Fischer (2005), and Jones et al. (2005). Following the lead of previous SEA evaluation exercises (e.g. Dalal-Clayton and Sadler 2005; Fischer 2002; Jones et al. 2005; Noble 2004; Retief 2007; Therivel 2004; Thissen 2000), the criteria are separated into *system* criteria, *process* criteria, and *results* criteria (Table 4). The purpose of grouping the criteria is to ensure that the various 'elements' of SEA are captured in each case analysis, and to limit the potential of mutually exclusive criteria appearing in any single category.

We agree with Thissen (2000) on the need to focus on the ultimate effects of SEA rather than on the SEA process and analytic content alone; however, we stress that the success of SEA, with regard to outcome measures, is in large part a function of the input and process elements. That is to say, the added value of SEA is to a significant extent related to the nature of the institutional environment or intended objectives of SEA and to the quality of the SEA process itself. Examining SEA performance and the influence of SEA on decision outcomes requires attention to the input and process elements of SEA, in addition to the output (Noble 2003). A poor quality SEA process will be less than effective in influencing PPP outcomes, and an SEA process designed based on objective *i* cannot be evaluated in terms of its ability to influence or realize outcome *j*. Attention must be given to the nature of the SEA system, context and objectives of application, and the process itself before critiquing SEA output and PPP influence.

The case analyses adopted a structured approach based on:

- i) a description of the respective SEA framework and/or application;
- ii) review of the SEA framework and/or application against the proposed criteria based on the case documents and supporting literature; and
- iii) a 'self-assessment' email-based questionnaire (Appendix A) and follow-up telephone interview conducted with those who were involved in the management or administration of a particular system or case study in question.

The case studies were 'scored' against the respective criteria based on: criterion fully met, criterion partially met, criterion not met, or unknown.

Table 4. Criteria for strategic environmental assessment in Canada

System components	Evaluation criteria
1. Provisions	<input type="checkbox"/> clear provisions, standards or requirements to undertake the process
2. Integration	<input type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP
3. Tiering	<input type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making
4. Sustainable development	<input type="checkbox"/> sustainability / sustainable development a guiding principle and integral concept
Process components	Evaluation criteria
5. Responsibility and accountability	<input type="checkbox"/> clear delineation of assessment roles and responsibilities <input type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review <input type="checkbox"/> opportunity for appeal of process or decision output
6. Purpose and objectives	<input type="checkbox"/> assessment purpose and objectives are clearly stated <input type="checkbox"/> centered on a commitment to sustainable development principles
7. Scoping	<input type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue <input type="checkbox"/> consideration of related strategic initiatives <input type="checkbox"/> identification and narrowing of possible valued ecosystem components (VECs), to focus on those of most importance based on the assessment context
8. Alternatives	<input type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios
9. Impact evaluation	<input type="checkbox"/> identification of potential impacts or outcomes resulting from each option or scenario under consideration <input type="checkbox"/> integration or review of sustainability criteria specified for the particular case and context
10. Cumulative effects	<input type="checkbox"/> consideration of potential cumulative effects and life cycle issues
11. Monitoring program	<input type="checkbox"/> procedures to support monitoring and follow-up of process outcomes and decisions for corrective action
12. Participation and transparency	<input type="checkbox"/> opportunity for meaningful participation and deliberations <input type="checkbox"/> transparency and accountability in assessment process
Result components	Evaluation criteria
13. Decision making	<input type="checkbox"/> identification of a 'best' option or strategic action <input type="checkbox"/> authoritative decisions, position of the authority of the guidance provided
14. PPP and project influence	<input type="checkbox"/> defined linkage with assessment and review or approval of any anticipated lower-tier initiatives <input type="checkbox"/> demonstrated PPP influence, modification, or downstream initiative <input type="checkbox"/> identification of indicators or objectives for related or subsequent strategic initiatives or activities
15. System-wide learning	<input type="checkbox"/> opportunity for learning and system improvement through regular system or framework review

CASE STUDIES OF STRATEGIC ENVIRONMENTAL ASSESSMENT

Each of the case studies exhibit notable features of SEA and were identified, in part, based on their reflection of the guiding principles and criteria for SEA in Canada. None of the cases meet all of the proposed principles and criteria simultaneously, and some demonstrate no formal 'impact assessment' process in the traditional sense. Collectively, however, the case studies illustrate the range of SEA and 'SEA-type' applications that currently exist across Canada and under a variety of assessment systems and planning frameworks. More importantly, the selected cases each highlight a number of 'good practice' elements and provide an opportunity to learn from experience and to advance the next generation of SEA systems and practices in Canada.

This section presents a brief summary of each case study followed by a summary evaluation of the case studies against the specified SEA criteria (Table 5). Detailed descriptions of each case study, including case study evaluation tables, are reported in Appendix B.

Case Study # 1: Canada-Nova Scotia Offshore Petroleum Board, Misaine Bank Area SEA

The Canada-Nova Scotia Offshore Petroleum Board (CNSOPB) is an independent joint agency of the governments of Canada and Nova Scotia responsible for the regulation of petroleum activities in the Nova Scotia offshore area. There are no formal requirements for SEA; rather SEA is undertaken by way of compliance, in principle, with the Directive and solely at the program level prior to issuing a call for bids for downstream exploration and project development. In 2005, an SEA was undertaken for the Misaine Bank offshore area to provide an overview of the offshore region, identify the potential effects associated with exploration activity, and to assist in determining whether exploration rights should be offered, in whole, or in part for the area (CNSOPB 2005). A draft scoping document for the SEA was released for public comment in early 2005 and the assessment was completed in that same year. The assessment consisted of an open scoping process and review of seismic surveys and exploratory drilling activities, followed by a baseline description and discussion of the potential individual and additive effects of, and mitigation options for, exploration activities in the area.

The CNSOPB considered a relatively narrow set of alternatives when considered in light of the spirit of SEA – to proceed with a call for offshore licensing or not - and is more consistent with the nature of alternatives considered at the project-specific level. However, the scope of the alternatives is consistent with the intended decision support role of SEA under the CNSOPB, operating at the program level, and reflects recent SEA practices and alternatives considered under the UK Department of Trade and Industry offshore assessments (see UK DTI 2007). The Misaine Bank Area SEA concluded that the area is not more sensitive to the potential effects of oil and gas than other areas of the Scotian Shelf. Sensitive marine areas that should be included in the scope of subsequent EIAs were identified. Specific mitigation measures for subsequent downstream development and EIAs were noted in the SEA, but, there is no formal mechanism to ensure enforcement of SEA output and compliance with decisions downstream. Strategic Environmental Assessment under the CNSOPB reflects a proactive approach to offshore exploration, but at the same time is inherently restrictive in alternatives consideration and scope when considered in light of the spirit of SEA. The role of SEA is primarily to streamline the EIA and approvals process.

Case Study # 2: Great Sand Hills Regional Environmental Study, Saskatchewan

In 2004, the Government of Saskatchewan committed to undertake a Regional Environmental Study (RES) of the Great Sand Hills, providing a strategic assessment of human activities that affect the long term ecological integrity and sustainability of the area. The assessment, completed in 2007, was initiated as a provincial government response to meet a prior land use planning commitment. The assessment was conducted independent of government and set out to provide strategic recommendations, in the form of a management plan, to guide human activities in the Great Sand Hills so that the long-term ecological integrity of the area could be maintained while economic benefits are realized (Scientific Advisory Committee 2007). The assessment process consisted of three main phases: a baseline assessment that characterized the current and cumulative biophysical, economic, and social conditions of the region from 1950 to present; the development, projection forward to 2021, and assessment of alternative land use scenarios and surface disturbances; and the identification of a preferred scenario and guidelines and recommendations for implementation, mitigation, and monitoring.

Although informal and without the SEA 'name tag', the RES demonstrates an ambitious approach to SEA, proactive in terms of planning orientation, with an outward-focus on achieving a broader regional vision. The assessment was explicitly based on an SEA framework and assessment methodology and unfolded as an integrated and objectives-led process at the same time as plan development. Sustainability criteria were an integral part of plan development rather than criteria against which the plan was evaluated post-development. A preferred scenario was identified for the Great Sand Hills recommending particular sites of enhanced protection and best-practice land use management. Numerous recommendations for plan implementation, future planning and assessment, and monitoring were also identified, along with specific targets, thresholds, and objectives for select ecological components. That being said, there is no formal tiering arrangement for the SEA and the responsibility for plan and recommendation implementation is beyond the authority of the independent scientific advisory committee appointed to carry out the assessment. At the time of this report the RES was still under review; it is too early to determine whether the recommendations will be implemented and influence downstream project assessment and decision making in the area.

Case Study # 3: National Capital Commission Core Area Sector Plan Assessment

In 2003, the National Capital Commission (NCC), an arm's length federal Crown corporation with the mandate to plan lands in Canada's national capital region, commenced development of the Core Area Sector Plan (CASP). As part of plan development, the CASP was subject to SEA under policy direction of the NCC and in the spirit of the Canadian Cabinet *Directive*. The SEA was conducted as a parallel process to plan development with information feeding into the planning process with the intent to ensure that environmental considerations are built into future planning processes for the resulting strategies and projects (NCC 2005). The SEA was situated within a tiered forward-planning system ranging from broad policy plans and overarching visions to site-specific objectives and implementation plans. As a sector plan, the CASP was third in a hierarchy of previous plans for the Core area. Specific implementations and project-related actions under the CASP are to be addressed in subsequent project-based EIAs under the *Canadian Environmental Assessment Act*. The purpose of the CASP was to identify a framework of policies and initiatives for development, programming, environmental integrity, transportation, animation, architectural and design quality on

federal lands in the Capital's Core Area, and to guide decision-making and inform planning initiatives over the next 20 years.

The SEA application was objectives led, and adopted a structured and systematic approach to assessing the implications of future initiatives resulting from the CASP according to specified biophysical, socioeconomic, and cultural VECs and objectives. Potential future initiatives and projects under the plan were identified and each initiative reviewed to assess the potential environmental effects, including potential cumulative effects due to spatial and temporal crowding. Determination of significance was undertaken by cross-referencing the proposed CASP initiatives and other known activities in the region with foreseeable environmental conditions or trends. Mitigation measures and monitoring measures were recommended for each of the potentially adverse environmental effects. Alternatives to the plan were not explicitly assessed; rather emphasis was placed on identifying a range of future planning actions or initiatives most likely to result from the CASP itself and evaluating their potential impacts. The CASP is reported by the NCC to have been improved through SEA application and results of the SEA are reported to have improved subsequent planning initiatives. Public involvement and the systematic approach to assessment are identified as key strengths of the NCC's SEA methodology. However, conducted parallel to plan development, SEA results proved difficult to coordinate and integrate with the CASP planning process.

Case Study # 4: Foreign Affairs and International Trade Initial Environmental Assessment of World Trade Organization Negotiations

In 2001, the Department of Foreign Affairs and International Trade (DFAIT) released its framework for the environmental assessment of trade negotiations. Multiple SEAs have been initiated under this framework, including the *Initial Environmental Assessment of the World Trade Organization (WTO) Negotiations* released in 2002. The purpose of the WTO SEA was to identify the potential sectors or activities that may be affected by WTO negotiations, with the aim to scope the main environmental issues that might arise and which will be given more rigorous analysis in the draft and final stages of the SEA process. While not explicitly tiered within a structured PPP arrangement, there is a tiered process of SEA application whereby an 'initial' SEA document is prepared to scope environmental issues and concerns; a 'draft' SEA is released at the start of trade negotiations to inform the negotiation process; and a final SEA is prepared following negotiations to document the outcome in relation to the SEA process.

The scope of the WTO SEA was determined based on the trade issues to be negotiated, including the effects of phasing out agricultural export subsidies, tariff reductions in non-agricultural products, additional trade in services, import anti-dumping disciplines, environmental commitments, wines and spirits registry, and dispute settlement. Alternatives were considered in the SEA, but the range was limited to the consideration of a 50% reduction in the status quo or baseline conditions for each of agricultural export subsidies and non-agricultural market tariff reductions. The SEA process was not explicitly sustainability-led in comparison to the Sustainability Impact Assessment approach employed by the European Union (EU) – identified by DFAIT as “too general for an accurate assessment” (DFAIT 2001: 21). The initial SEA of WTO negotiations concluded that the effects new WTO negotiations are likely to have on the Canadian environment are minimal. Mitigation and monitoring measures were identified, but such recommendations are non-binding under the current framework. Perhaps the only significant outcome of the SEA of trade negotiations under the DFAIT framework is increased recognition of the relationship between international trade and the

environment. The WTO SEA was, in many respects, narrowly focused, with no intent to compare alternatives in order to arrive at a preferred option; rather, the intent was to identify potential environmental issues in order to inform trade negotiations. Public input to the SEA process to date has been limited, with relatively few comments and questions received on the initial SEA.

Case Study # 5: British Columbia Offshore Oil and Gas Moratorium Federal Public Review

In May 2003, Natural Resources Canada called for a federal public review of the long-standing moratorium on oil and gas activity in the Queen Charlotte Basin, offshore British Columbia. The review was to identify the potential impacts of oil and gas activity in the region and to identify information gaps that may need to be filled prior to, or following, any decision on lifting the moratorium². The federal review of the B.C. offshore oil and gas moratorium was an SEA in all but name, conducted in accordance with the provisions of the 1999 *Cabinet Directive*. Sadler (2005: 49) describes the assessment as an “extended SEA”, established to “definitively ‘roll up’ long-standing issues and uncertainties relating to the environmental justification of the moratorium.” The assessment system was multi-track, consisting of three parallel and independently administered processes: a science review of information and knowledge gaps concerning oil and gas activity; a public review and consultation process; and a First Nations engagement process³, which together comprise the SEA regarding the federal Government’s decision on whether or not to lift the federal moratorium.

While more comprehensive in both process and scope than previous reviews offshore BC and formal SEAs offshore eastern Canada, missing from the assessment was a consolidated and integrated report that combined the results of each panel report into a single, decision support framework and identification of a ‘best’ option or strategic action. For example, the science review concluded that “*provided an adequate regulatory regime is in place, there are no science gaps that need to be filled before lifting the moratoria on oil and gas development*” (Royal Society of Canada 2004: 121). The public review concluded that “*the strongly held and vigorously polarized views it received do not provide a ready basis for any kind of public policy compromise at this time in regard to keeping or lifting the moratorium*”, and proposed four options ranging from keeping the moratorium to lifting the moratorium (Priddle et al. 2004). The First Nations engagement process reported consensus that the moratorium should not be lifted or should not be lifted at the present time. Recommendations emerging from the review were many and varied, but non-binding with no authority on behalf of the review panels to ensure implementation. A 2004 media release by Natural Resources Canada made clear that “the three-part federal process is not a decision-making process, but rather a way to explore the issues and views of British Columbians regarding the federal moratorium”⁴. The moratorium continues, with no formal federal response to the public reviews.

² An overview of the BC oil and gas moratorium assessment is presented by Sadler (2005) as a case study of “leading edge” SEA.

³ Copies of the panel reviews are available at <http://www2.nrcan.gc.ca/es/erb/prb/english/View.asp?x=655>

⁴ Natural Resources Canada media release 2004/64. http://www.nrcan.gc.ca/media/newsreleases/2004/200464_e.htm

Case Study # 6: Ontario Power Authority Integrated Power System Planning

In May of 2005, the Ontario Minister of Energy directed the Ontario Power Authority, the province's planning authority for electricity, to begin the process of developing an Integrated Power System Plan (IPSP) - a comprehensive plan for Ontario's electricity system to 2027. Power system planning is exempt from the provincial environmental assessment process, but legislated under the *Electricity Act* and reviewed by the Ontario Energy Board - a Crown corporation and regulator of Ontario's natural gas and electricity industries. The basis for the IPSP was a supply mix directive, which identified a preferred set of electricity supply and distribution objectives for the province based on a review of possible supply mix alternatives. The IPSP was developed based on the preferred supply mix and set out to: identify demand reduction strategies and new generation technologies; increase alternative and renewable energy generating capacity; replace coal-fired generation; and develop new programs and targets for electricity production, planning and delivery. The IPSP was developed through a series of discussion papers, all made available for public review and comment, including a sustainability paper which set out the approach to sustainability used in developing the IPSP and established the sustainability criteria for final plan development and evaluation.

The IPSP process is the first of its kind under the new regulatory system in Ontario, and the plan is currently in its final stages of development and review. Although the IPSP was neither an SEA by name, nor was it reviewed under any system of environmental assessment, it is illustrative of an attempt at integrated SEA for sector-based plan development - albeit restrictive in the sense that the 'SEA process' was limited to a prescribed electricity mix and to the evaluation of alternatives within the scope of a predetermined policy outcome. The IPSP will not result in identification of a preferred alternative but the rationalization of a prescribed electricity mix. In this sense, while the IPSP itself is fairly comprehensive, the 'model' of SEA depicted by the planning process is relatively *ad hoc* and restrictive in comparison to SEA applications for electricity planning in the United Kingdom's privatized electricity sector.

Case Study # 7: Pasquia-Porcupine 20-year Forest Management Plan Assessment, Saskatchewan

In 1995, a forest harvesting and management partnership was formed between MacMillan Bloedel Limited and a subsidiary of the Saskatchewan Crown Investments Corporations, together known as the Saskfor-Macmillan Limited Partnership (SMLP). Negotiations commenced with the Saskatchewan government for a forest management agreement that would allow SMLP to harvest and manage timber in the Pasquia-Porcupine forest management area. As part of establishing a forest management agreement, a 20-year forest management plan (FMP) must be prepared by the industry and submitted for environmental assessment review. The environmental assessment of 20-year FMPs is legislated under the Saskatchewan provincial environmental assessment Act. Although 20-year FMP assessments do not carry the SEA name tag, they are illustrative of an integrated SEA where assessment unfolds simultaneously with plan development.

The assessment of 20-year FMPs is set within a tiered-forward planning framework, of which plan development and assessment is one component. The Pasquia-Porcupine FMP's guiding principles were based on sustainability, with an overall purpose to "manage the use of land and the renewable and non-renewable resources of the planning area on an integrated and environmentally sound basis to ensure ecological, economic, social and cultural benefits for present and future generations" (SMLP 1998: i). Five strategic plan alternatives were identified, each systematically assessed based

on a consistent set of criteria developed within the context of industry objectives, regulatory standards and requirements. A follow-up and evaluation strategy was also developed as part of the plan and integrated assessment, which includes an annual review plan implementation, public reporting, and an independent audit as per legislated requirements every 5 years. At the conclusion of plan development and assessment, a 'best' option was identified and a single plan and environmental assessment document delivered. The FMP and environmental impact statement were endorsed in 1998. Early integration of environmental assessment into the planning process ensured that the plan and preferred option were consistent with the various government regulations and specified industry standards. Public values and concerns had already been considered by the time the plan was completed and forwarded for approval and, as such, unexpected delays in plan approval were minimized.

Case Study # 8: Capital Regional District's Regional Growth Strategy, British Columbia

In 1996, the Capital Regional District (CRD), a regional governing body on southern Vancouver Island, British Columbia, formally initiated a process to develop a regional growth strategy (RGS) to define a common vision, goals, and regional priorities and strategies to manage growth in the region to the year 2026 (CRD 2003). The CRD RGS case is unlike urban and regional planning experiences reported elsewhere in the SEA literature, in that the RGS is an example of a planning approach that depicts the elements and practices of SEA but makes no reference to environmental assessment principles or practices. Moreover, the RGS is the product of a series of planning and decision documents generated from a planning process that unfolded over a period of seven years and at no point was subject to formal environmental assessment review.

Development of the RGS commenced with a baseline and visioning exercise. Four alternatives were considered in the RGS, each forecasted and characterized based on 53 quantitative and qualitative indicators and evaluated based on 18 criteria, from which a preferred option for plan development was identified and a bylaw passed for development and adoption of the RGS. Formal requirements, indicators and targets for implementation and performance monitoring were also identified. The assessment process itself was influential in leading up to the selection of a preferred strategy on which the RGS was developed; however, the RGS itself has had mixed influence. A number of initiatives have been implemented under the plan since its approval in 2003, and several growth management targets met, but the goals and targets established by the plan are neither enforceable nor directly tied to downstream planning initiatives and guidelines. As a 'model' of SEA, the RGS is illustrative of an assessment of strategic alternatives for the purposes of selecting a preferred option, for which a plan would then be developed. However, the overall process was lengthy, cumbersome, and, unlike planning in the Golden Horseshoe region on southern Ontario, resulted in a plan with limited authority to directly influence downstream activities and decision making.

Case Study # 9: Atomic Energy of Canada Limited Conceptual Review of Nuclear Fuel Waste Disposal

In 1974, a committee comprised of the Atomic Energy of Canada Limited (AECL), Ontario Hydro, and Hydro Quebec proposed a 'geological disposal concept' that would involve burying Canada's nuclear fuel waste (NFW) deep within the Canadian Shield. In 1988, the concept was referred for public review under the federal Environmental Assessment and Review Process (EARP) Guidelines Order. An independent panel was appointed to develop the scope of the assessment and to conduct a public review of the assessment document upon completion. The panel's mandate was unusual when compared to typical EARP reviews in that the panel was asked to review a 'concept' rather than a project with a specific geographic location. Moreover, the implementing agency of the concept was not defined and the public review was to span five provinces. The terms of reference directed the review in four areas: an evaluation of the acceptability of the nuclear fuel waste disposal concept, including the burden on future generations, and a future course of action; comparison of the Canadian disposal concept to the approaches for nuclear fuel waste management adopted by other countries; a focus explicitly on nuclear fuel waste and the disposal concept; to refrain from discussing energy policy, nuclear plant operation and construction, and military applications.

Atomic Energy of Canada Limited released its impact statement in 1994; a technical review of the deep geological burial disposal concept with no competing alternatives. The consideration of alternatives was a highly contentious issue. Atomic Energy of Canada Limited argued that the consideration of alternatives would open up the review to a scope beyond that which was intended by the terms of reference, the disposal concept itself. The public called for a broader consideration of alternatives, but were not involved in setting the initial terms of reference. The panel reviewing the impact statement went beyond the scope of the terms of reference to ensure consideration of broader social issues and concerns regarding NFW management. Interestingly, the panel's report to government found AECL's concept to be technically sound but not publicly acceptable due, in part, to the fact that only a single option, AECL's proposed concept, was considered. The proposal for deep geological disposal was not accepted. Approximately 30 years since initially proposed the concept, and alternatives to the concept, is currently being re-assessed by the nuclear Waste Management Organization - a private industry organization led by the major owners and producers of NFW, including AECL, mandated under the NFW Act to review and select a preferred option for long-term management.

Case Study # 10: British Columbia Salmon Aquaculture Review

In April 1995, the government of British Columbia placed a moratorium on the issuance of new salmon aquaculture licences and announced an Action Plan for Provincial Salmon Aquaculture, which identified the need for a review of environmental issues and of provincial salmon aquaculture policies (Salmon Aquaculture Review 1997). The review was in response to a long-standing concern over industry regulation and the potential effects of interaction between wild and escaped farm salmon. The province's Environmental Assessment Office (EAO) was asked to review the adequacy of the current methods and processes used in regulating and managing salmon aquaculture operations - the first use of the *Environmental Assessment Act* for policy and regulatory assessment (Davidson 1999).

A technical advisory committee of independent scientists was formed to lead the science component of the review, and a review committee of various stakeholders and First Nations was formed to lead the public review. In many respects the assessment was novel under the British Columbia system, but restricted in the sense that only the current level of aquaculture production was considered and not alternative industry growth scenarios or desired futures. The EAO was asked to consider only how the industry could be managed more effectively. The focus was on the adverse impacts of aquaculture operations and identifying preventative and potentially mitigating measures; a compromise of sustainability in favour of promoting the economy (Davidson 1999). Several communities were involved in the consultation process through the review committee; however, the review committee played only a nominal role in the assessment in that, unlike federal review panels, it did not prepare a separate report but played only an advisory role to the technical review team. The technical advisory team concluded that salmon aquaculture, at current production levels, presents a low overall risk to the environment. The conclusion was accompanied by 49 recommendations submitted to the EAO, which were revised by the EAO prior to submission to the responsible ministries. The outputs of the review were recommendations only, with the EAO having no authority to ensure implementation. The Ministry of Agriculture, Fisheries and Food indicated in 2003 that 39 of the 49 recommendations had been implemented in full⁵; however an independent review (Connell 2004) suggests that only 10 of the 49 recommendations have been implemented.

⁵ Recommendations status report available at http://www.agf.gov.bc.ca/fisheries/cabinet/salmonreview_apr03.pdf

Table 5. Canadian SEA and SEA-type case study characteristics

		<i>Case Study</i>	1	2	3	4	5	6	7	8	9	10
		<i>System criteria</i>										
1. Provisions	Clear provisions, standards or requirements to undertake the SEA, or equivalent, process		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Integration	Application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Tiering	Assessment is undertaken within a tiered system of environmental assessment, planning and decision making		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Sustainable development	Sustainability or sustainable development is a guiding principle and integral concept		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<i>Process criteria</i>										
5. Responsibility accountability	Clear delineation of assessment roles and responsibilities		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
	Mechanisms to ensure impartiality/ independence of assessment review		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6. Purpose and objectives	Opportunity for appeal of process or decision output		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
	Assessment purpose and objectives are clearly stated		<input checked="" type="checkbox"/>									
7. Scoping	Centered on a commitment to sustainable development principles		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
	Consideration of related strategic initiatives		<input checked="" type="checkbox"/>									
	Identification and narrowing of possible VECs, to focus on those of most importance based on assessment context		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				

8. Alternatives consideration	Comparative evaluation of potentially reasonable alternatives or scenarios	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9. Impact evaluation	Identification of potential impacts or outcomes resulting from each option or scenario under consideration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Integration or review of sustainability criteria specified for the particular case and context	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 Cumulative effects	Consideration of potential cumulative effects and life cycle issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Monitoring program	Procedures to support monitoring and follow-up of process outcomes and decisions for corrective action	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Participation and transparency	Opportunity for meaningful participation and deliberations	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Transparency and accountability in assessment process	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Output and results criteria											
13. Decision making	Identification of a 'best' option or strategic action	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Authoritative decisions, position of the authority of the guidance provided	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14. PPP and project influence	Defined linkage with assessment and review or approval of any anticipated lower-tier initiatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Demonstrated influence in PPP development, modification, or downstream initiative	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Identification of indicators or objectives for related or subsequent strategic initiatives or activities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15. System-wide learning	Opportunity for learning and system improvement through regular system or framework review	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case study:

1. Canada-Nova Scotia Offshore Petroleum Board , Misaine Bank Area SEA
2. Great Sand Hills Regional Environmental Study, Saskatchewan
3. National Capital Commission Core Area Sector Plan Assessment
4. Foreign Affairs and International Trade Initial Environmental Assessment of World Trade Organization Negotiations
5. British Columbia Offshore Oil and Gas Moratorium Federal Public Review
6. Ontario Power Authority Integrated Power System Planning
7. Pasquia-Porcupine 20-year Forest Management Plan Assessment, Saskatchewan
8. Capital Region District's Regional Growth Strategy, British Columbia
9. Atomic Energy of Canada Limited Conceptual Review of Nuclear Fuel Waste Disposal
10. British Columbia Salmon Aquaculture Review

STATE OF CANADIAN SEA SYSTEMS AND PRACTICES

It cannot be expected that all SEA applications will meet all of the proposed criteria simultaneously. Strategic Environmental Assessment systems are diverse and, in many cases, designed to meet specific objectives and functions that range from specific program-level decision making to broader visioning, policy and plan development. The case studies demonstrate considerable variability in SEA and SEA-type systems and practices across the range of criteria. This is not surprising given that what SEA really is, what it delivers and how it should perform are still far from a consolidated stage (Vicente and Partidario 2006). Overall, across all cases and the full range of criteria, the proposed SEA criteria were fully met 40% of the time, partially met 31% of the time, and not met 26% of the time, with 3% indeterminable. In terms of system, process, and results criteria, the process criteria were most frequently met across the range of case studies (Figure 1).

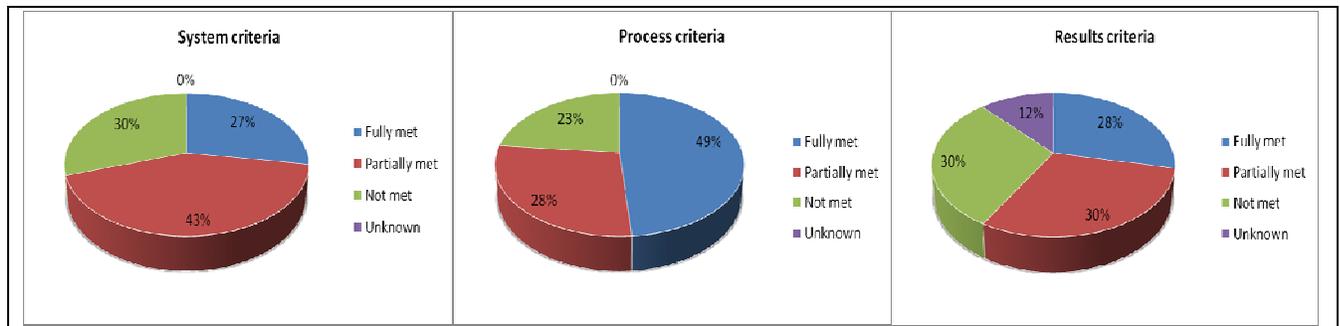


Figure 1. Summary of SEA characteristics and case study performance

Canadian SEA case studies: systems, processes, outputs

The case studies illustrate a range of provisions for SEA and SEA-equivalent processes including: legislated requirements for environmental assessment above the project level, albeit with no SEA label, such as the case of 20-year FMP assessments under Saskatchewan’s provincial environmental assessment system; policy requirements for formal SEA application in compliance with the cabinet Directive, as illustrated by the DFAIT WTO initial environmental assessment; one-time conceptual and policy reviews carried out under the auspices of environmental assessment guidelines and provisions, such as the British Columbia Salmon Aquaculture assessment; and applications demonstrating good-practice SEA methodology, such as the Great Sand Hills RES, but carried out under neither the SEA label nor any formal system of environmental assessment. Across the range of SEA principles and criteria, there appears to be little overall difference between those systems and applications that carry the formal SEA name tag and those that do not.

Most cases demonstrated, to some extent, early application of SEA or of the SEA-type system; however, in those cases where ‘SEA’ was undertaken as an integrated part of PPP development, such as the Pasquia-Porcupine FMP, the Great Sand Hills RES, and the Ontario Power Authority IPSP, its value to planning and decision making was more fully realized by those engaged in the process. In cases where SEA was implemented as a parallel process, such as the National Capital Commission CASP, the outcomes of assessment proved to be much more difficult to integrate with

PPP development. Where SEA was carried out for an already existing PPP or for a single strategic decision, such as the BC Salmon Aquaculture review or the AECL nuclear fuel waste disposal concept, its scope and value added to informing PPP decisions was inherently limited.

A major limitation of all SEA systems examined, formal and informal, was the lack of a tiered system of PPP assessment and decision making that carries forward SEA results to the project level. Only 5 of the 10 cases provided for some form of tiering mechanism, with the remainder of cases demonstrating no real tiered system. Ideally, SEA and project-based impact assessment are considered in sequence, where SEA proactively examines a range of alternatives and selects a preferred course of action. Project assessment is then initiated to determine in greater detail the potential impacts and implementation options of the 'best' alternative. While SEA and project assessment does not necessarily occur in such a structured and tiered forward-planning framework, if SEA is to be influential downstream then there is a need for SEA results to inform decision inputs at the next tier, and for SEA objectives to be informed by the decision outputs of previous tiers of assessment and decision making (Noble 2005). A number of cases examined demonstrated tiered arrangements within the planning framework itself, such as DFAIT's system of initial, draft, and final SEA reporting, and the NCC's hierarchical policy and planning framework; however, overall there is either a disconnect or only limited transmittal of strategic-level assessment output to actions and assessments at next tier of assessment.

With regard to SEA process characteristics, in most cases there was a clear delineation of assessment roles and responsibilities – but only 5 cases clearly demonstrated assurance of impartiality and independence of the assessment and review process. Most cases provided an opportunity for public review of the completed assessment document, however only one case, the Capital Regional District's RGS, clearly demonstrated an opportunity for formal appeal of the process or decision output. All cases examined provided for some form of public involvement. Purposes and objectives also were clearly stated, and the majority provided an opportunity to develop more or less onerous streams of assessment sensitive to the particular context and issue. The only exception was the Ontario Planning Authority's IPSP, for which the process, scope, and content were determined by way of both directive and legislation, thus leaving little flexibility in the process.

The consideration and assessment of a reasonable range of alternatives or scenarios, a defining characteristic of SEA, was clearly evidenced in only 3 of the 10 cases: the Great Sand Hills RES, the Pasquia-Porcupine FMP assessment, and the Capital Regional District RGS. The DFAIT WTO initial SEA, the federal review of the oil and gas moratorium offshore British Columbia, and the Ontario Power Authority IPSP demonstrated only a limited consideration and assessment of alternatives. The remaining cases did not provide a comparative evaluation of alternatives or scenarios. All cases, to some extent, identified the potential impacts or implications of the range of alternatives or of the single alternative under consideration. A dedicated cumulative effects assessment was either weak or non-existent in all cases examined. Only 2 cases clearly demonstrated a formal, required program for follow-up reporting and monitoring of outcomes and decisions for corrective action – a limitation not unique to assessment at the strategic-level. Further, only 2 cases clearly expressed sustainability or sustainable development principles; of those cases, interestingly, neither explicitly adopted sustainability review criteria for impact evaluation. Only the Ontario Power Authority IPSP explicitly addressed the integration of sustainability criteria as part of the impact evaluation process; this also was the only assessment to demonstrate a clear, legislative-based linkage to the assessment, review and approval of any anticipated lower-tier initiatives.

For half of the cases examined it is too early to tell whether the SEA or SEA-type application has been influential in either PPP development or modification of downstream initiatives. The strategic-level assessments of National Capital Commission CASP, the SMLP 20-year FMP, and the AECL nuclear fuel waste disposal concept clearly demonstrate PPP influence and modification and improvement of downstream assessment and development initiatives. The influence of the SEA-type review of the Capital Regional District RGS and the policy assessment of British Columbia aquaculture regulations have generated only mixed results. Only 2 cases demonstrated authoritative decisions and a position on the authority for downstream development actions or activities – reflecting a major challenge to SEA influence in that if there is no tiered system of assessment and supporting only limited commitment to ensuring that SEA output is carried forward to decision making processes, it is unlikely that the added value of SEA will be fully realized (Partidario 1996; Noble 2004).

OBSERVATIONS AND CONCLUSIONS

This report set out to characterize a range of SEA systems and experiences in Canada. An assessment of the overall state of SEA in Canada is difficult to determine objectively given that the majority of SEAs at the federal level are not publicly available, there is no central registry of SEAs as there is for EIAs, and a large number of SEA applications do not occur under the SEA name tag or under the federal SEA framework.

Based on the case studies reviewed, and in considering the lessons learnt from SEA experiences reported elsewhere in the literature, we venture a number of observations concerning SEA advancement in Canada. Some of these observations point toward critical decisions and actions that must be taken if SEA is to advance; others address general challenges to SEA systems and practices.

1. The notion of a strategic-level assessment is not new to Canada, but skepticism remains as to the benefits of 'SEA'. In large part, this skepticism is due to a lack of common understanding of the roles SEA can and should play in decision making, limited availability of tested methodological frameworks, and, perhaps most significantly, a lack of cases clearly demonstrating the added value of SEA (Noble 2004). 'SEA-type' practices are ongoing in Canada, many of which carry no SEA label but are based, purposefully or not, on relatively sound SEA principles and methodology. This suggests that there must be some *real* benefits to SEA; the problem is that very little is known about such applications. Under more formal SEA systems in Canada, conducted by way of policy requirement or commitment and which carry the SEA name tag, there is a greater tendency for SEA to be perceived as something that "must be done" but having limited influence over, or contribution to, PPP development or downstream actions.
2. Part of the challenge to realizing SEA benefits, particularly under the more formal systems of SEA, is the limited tiering of strategic- and project-level assessment and decision outputs. Strategic Environmental Assessment is often conceptualized as a tool that can complement and support subsequent strategic or project-level assessments by identifying potential environmental effects that could result from strategic initiatives and by identifying 'preferred' options for subsequent planning and development activities. In practice, SEA remains relatively static and often limited to a single PPP tier with only marginal input to subsequent assessment processes. Under the current federal *Directive*, for example, SEA is carried out as a separate or parallel process to project EIA. However, with no formal tiering arrangement there is considerable uncertainty as to what role SEA outputs and decisions can or should play downstream. While in most cases SEA is *intended* to influence or guide subsequent actions and decisions, there is often no clear connection between systems of SEA and downstream project-based environmental impact assessment input requirements. In this sense, the systematic separation of SEA as distinct from systems of EIA may constrain its ability to influence downstream activities.
3. There are different interpretations of the specific functions of SEA, from that of validating a PPP decision to influencing decisional contexts and strategic initiatives (Vicente and Partidário 2006). Arguably, the greatest potential for SEA lies in its ability to inform PPP development early in the decision making process before irreversible decisions or actions are taken. Strategic Environmental Assessment is most beneficial, and influential, when conducted as part of the PPP development process rather than used as tool to test or validate a PPP. Even as a parallel process to planning and decision making, the added value of SEA is limited in

terms its ability to adequately integrate and coordinate SEA methods, objectives, and outputs with those of the planning and decision making process. An integrated approach has a number of advantages, including increased clarity for PPP objectives and opportunity for evaluation of a broader range of alternatives; however, an integrated approach does require that SEA become an accepted part of the PPP development and decision making process. This will be difficult to achieve given the common interpretation of environmental assessment as an add-on process; a yardstick against which the acceptability of proposals are measured, rather than an integrated approach to develop better ones.

4. Integrated or applied as a separate evaluation tool, SEA is inherently an impact assessment and decision support process and requires a systematic and structured methodological approach (e.g. Alton 2005; Fischer 2003, 2006; Noble and Storey 2001; Noble 2005; Wiseman 2000). In principle, SEA methodology is best described as “one concept, multiple forms” (Verheem and Tonk 2000), flexible, diversified and tailor-made to the decision-making process (Partidario 2005). This is consistent with the current guidelines to the cabinet *Directive*, which suggests that there is no single best methodology for conducting SEA; rather, departments and agencies are encouraged to apply appropriate frameworks and approaches tailored to their particular needs and circumstances. In practice, however, it is the very notions of flexibility and adaptability that have led to interpretations of SEA as an “any size will do” tool characterized by *ad hoc* and poorly constructed models. Retief (2007) cautions that some have perceived the flexibility and adaptability of SEA as synonymous with being vague and confusing. As an assessment process, SEA should adopt “ex-ante tasks such as scoping, identification and comparison of the alternatives, evaluation based on technical and publicly adopted criteria, reporting...all in a consistent and systematic form, ensuring open and accountable strategic decision making, and contributing to the quality improvement of subsequent decisions” (Partidario 2000: 651). Structured and systematic methodological impact assessment and evaluation frameworks are prerequisites to realizing the value added of SEA; flexibility and adaptability in SEA systems to the particular PPP context and objectives will serve to ensure its success.
5. Many of the same technical and institutional problems that have plagued project-based EIA are evident also in recent SEA systems and practices. In particular, Canadian SEA performs poorly in the areas of cumulative effects assessment and post-decision follow-up and monitoring. SEA is widely acknowledged in the literature as a valuable tool for providing a more effective analysis of cumulative effects, addressing the causes of cumulative effects rather than treating the symptoms, and offering a more proactive and systematic approach to cumulative effects assessment at the regional scale (e.g. Bonnell and Storey 2000; Cooper 2003; Kingsley 1997; Sadler and Verheem 1996). However, there has been considerably more talk about the potential for SEA to address cumulative effects than there has been development and demonstration of enabling frameworks. As a result, there remains little evidence of cumulative effects assessment at the strategic level (Wärnbäck 2007).

In a similar context, the literature acknowledges the promise of SEA follow up to cope with deviations of PPPs from the planned course, to ensure their effectiveness, and to take corrective action where needed (Arts and Morrison-Saunders 2004; Partidario and Fischer 2004; Storey and Noble 2002), but the application of follow-up in SEA is limited. Strategic Environmental Assessment is still very much an *ex ante* evaluation of the impacts of strategies and rarely carries over to their implementation effects. Five general approaches to SEA follow-up have been proposed by Partidario and Arts (2005): monitoring actual changes; evaluating achievement of objectives of strategic initiatives by monitoring and evaluating ‘indicators of

success' or goal achievement; evaluating performance of strategic initiatives focusing on "implementation" activities and as related decisions and actions; checking conformance of subsequent decision-making with strategic initiatives and SEA; and monitoring and evaluation of the actual impacts of strategic initiatives. The challenges to undertaking follow-up, however, are many and varied including: the lack of institutional commitment; many strategic initiatives either remain at a discourse stage not resulting in actual actions or are not implemented exactly as planned; and what Partidario and Arts term the "splash effect" of strategic initiatives.

6. In principle, directive-driven SEA establishes a duty to comply but lacks the powers to ensure that agencies fulfil their responsibilities or to enforce consistency in SEA application (Dalal-Clayton and Sadler 2005). Hazell and Benevides (1998), for example, report that a legal framework for SEA may be desirable from the perspective of improving compliance with SEA rules across government departments, as well as improving the quality of SEAs. In addition, formal requirements for SEA may serve to ensure accountable SEA application, provide for meaningful participation, a public appeal processes, and regular system reviews. That being said, given the current state of development and understanding of SEA in Canada, there is not a definitive answer as to whether formal, legislated SEA would be advantageous and limited evidence to suggest that formal requirements translate to 'better' SEA. Some of the 'better-practice' SEA experiences in Canada to date have neither carried the SEA name tag nor occurred under formal SEA requirements; rather, such cases have been integrated with PPP development, often adopting SEA principles and methodology 'accidentally', and tailor-made to the particular needs and objectives of the planning system and problem at hand⁶.

The strength of SEA is its flexibility. Buckley (2000) and Retief (2007) note considerable difficulty in legislating or formalizing SEA, and even more difficulty in producing clear and concise guidelines for SEA systems. There is a delicate balance between formalizing SEA so as to ensure its application and in allowing sufficient flexibility such that SEA can be tailor-made to the specific objectives and planning systems under which it is intended to operate. SEA must be adaptable to the realities of the PPP system within which it is being applied (Dalal-Clayton and Sadler 2005; Nilsson and Dalkman 2001; Nitz and Brown 2001; Partidario 2005), and adopted as an integrated part of PPP development and decision-making.

In conclusion, Canadian SEA is characterized by institutional and methodological pluralism, the boundaries of which are not well defined. There is no single set of SEA criteria that can be unequivocally applied to all SEA systems and practices; attention must be given to the tier of application and to the specific nature, objectives, and constraints under which SEA is operating. Bina (2003) goes so far as to argue for the conceptualization of SEA at the level of organisations, not of PPP tiers or of economic sectors alone, framing the purpose of SEA by how it fits into the decision framework. This is not to say that 'good practice' SEA should not be defined by an agreed-upon set of principles and criteria, but rather SEA operates in diverse forms, under a range of institutional and methodological frameworks and expectations, and SEA evaluations must be sensitive to the input requirements and guidelines of the particular system in question. The results of this study suggest that SEA practice is occurring in Canada, both formal and informal, but under varied systems and frameworks and with mixed success. There is a need to examine a larger number of cases across a broader range of sectors, at different tiers of decision making, and under both formal and informal SEA systems in order to gain a comprehensive understanding of SEA experiences and of the state-of-the-art SEA in Canada.

⁶ This statement is made within the context of those SEAs or SEA-type applications that are within the public domain. The majority of formal SEAs under the current cabinet Directive are not publicly available and, as such, their quality and the extent to which they reflect the desired characteristics of SEA in Canada cannot be commented on.

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APPENDIX A

SAMPLE CASE STUDY EVALUATION QUESTIONNAIRE

Dear _____

Thank you for agreeing to assist us with this project.

As we discussed on the telephone, in 2006 a Sub-committee on Strategic Environmental Assessment (SEA) was established to make recommendations to the Minister of Environment's Regulatory Advisory Committee on the *Canadian Environmental Assessment Act* concerning the nature and purpose of SEA. The scope of this work, and the establishment of the committees, emerged from a 2003 report of the House of Commons Standing Committee on the Environment and Sustainable Development. Based on its review of a bill to amend the *Canadian Environmental Assessment Act*, the Standing Committee issued two reports: one concerns a regular 5-year review of the *Canadian Environmental Assessment Act* and the second explores a range of issues beyond the scope of this 5-year review and includes such issues as SEA.

We have been contracted by the Sub-committee on SEA to undertake a review of formal SEA systems and practices, and informal SEA-type systems and practices from across Canada. The objectives are to explore the range of applications that currently exist and to identify opportunities for learning and overall SEA improvement. The results of this work will be used to assist in a 2008 review of the *Canadian Cabinet Directive on the Environmental Assessment of Policy, Plan, and Program Proposals*.

In consultation with the Sub-committee, we have identified _____ as a case study model of SEA or SEA-type application, and would appreciate your participation in a brief questionnaire/interview. Questions focus on aspects of the overall planning and assessment system, the particular process of application, the overall value added and decision influence, and finally the key lessons learnt.

A questionnaire is attached, which may be completed and returned by email. We would like to speak with you over the phone, if at all possible, concerning the final set of questions on overall experiences and lessons learnt from recent application.

If we could receive your completed questionnaire before 30 May, and follow-up with you at that time it would be greatly appreciated.

Thanks you for your assistance. If you have any questions, please don't hesitate to call or email. We look forward to your response

Sincerely,

Bram Noble, Ph.D.
Jackie Bronson, M.A.

Questions about the overall planning and assessment system:

1. Are there formal requirements for the application of SEA (or for your equivalent planning and assessment process)?
 - Yes, there are legal requirements or equivalent (*please specify*)
 - There are guidelines for application
 - No
2. Who is responsible for ensuring implementation of the assessment process?
3. Are there clear standards or requirements that guide the specific application and content of SEA or equivalent planning and assessment system?
 - Yes (please specify / elaborate below)
 - There are standards or requirements, but they are not clear (*please specify / elaborate*)
 - No
4. Overall, is application early enough in the process to address deliberations on the purpose of the assessment, or on the types of alternative and issues that are considered?
 - Yes
 - Not early enough to be as influential as it could be
 - No
5. Are roles and responsibilities clearly defined and are those responsible for carrying out the assessment/planning process 'real' actors in decision making?
 - Yes, roles and responsibilities are clearly defined with some autonomy and decision making power to those responsible for assessment
 - Roles and responsibilities are more or less clear, but there is no real autonomy or decision making power
 - No, roles and responsibilities are not clear
6. Are there mechanisms in place to ensure impartiality and independence of the assessment review?
 - Yes, there is a full and independent review of the assessment process and report
 - There are some mechanisms, but no formal independent review
 - No
7. Is there an opportunity for a formal appeal of the process or of the outcome of the process?
 - Yes (*please specify*)
 - There is an opportunity, but only through informal mechanisms
 - No

Questions concerning SEA (or equivalent planning/assessment) process:

8. Are there clear objectives, centered on a commitment to sustainability, that guide the assessment process?
 - Yes, objectives guiding assessment are clearly outlined in supporting strategies, documents, policies, or guidelines
 - In a sense, but they need to be adapted in order to be applicable to assessment
 - No, there are no clear objectives
9. Is there an opportunity to use more or less onerous streams or types of assessment/evaluation depending on the nature of the issue at hand?
 - Yes, the assessment process/tool is flexible and tailor made to each application
 - No, there is more or less a single stream/type of assessment process

10. Are related strategic initiatives (existing policies, plans, programs, or initiatives) considered in the scope of application, assessment and evaluation?
- Yes, they are given direct consideration in informing the assessment or as components that affect or are affected by the particular initiative being assessed
 - They are given some consideration, but not directly used to inform the assessment or considered as affected/affecting components
 - No
11. Is there a clear scoping procedure or mechanism to identify and focus the assessment on a limited number of components?
- Yes, there is a formal scoping process/mechanism
 - Scoping is done, but there is no clear or defined process
 - No
12. Is there a reasonable range of alternatives considered and compared in the assessment process?
- Yes, alternatives are considered and compared in detail
 - Only a limited number of constrained alternatives are considered and compared
 - Alternatives are not considered, or are limited to the 'proceed' or 'not proceed' options
13. Are the potential impacts resulting from each alternative detailed and assessed using sustainability criteria?
- Yes
 - Impacts are identified and assessed for each alternative, but not necessarily based on sustainability criteria
 - No, the focus of impact assessment is on only one alternative or there is no detailed assessment
14. Are potential mitigation or impact management measures identified for those impacts that are considered in the assessment?
- Yes
 - No
15. Is there mechanism for follow-up or monitoring of the assessment recommendations/implementation?
- Yes, there is a formal requirement
 - Yes, but primarily through informal or ad hoc mechanisms
 - There is no real monitoring or follow-up process for implementation
16. Is there routine monitoring of the predicted/actual impacts identified in assessment for corrective action?
- Yes, there is a formal requirement
 - Yes, but primarily through informal or ad hoc mechanisms
 - There is no real monitoring or follow-up process for implementation
17. Does the process provide reasonable opportunity for meaningful public participation?
- Yes, there is early and ongoing public involvement integrated through the entire process
 - There is some public involvement, mostly in terms of an opportunity to review and comment on the assessment or planning document
 - There is limited opportunity for public involvement
18. Is the process transparent?
- Yes, the assessment document(s) is public and there is a tradition of information sharing amongst the affected parties and the public
 - There is limited information sharing and release of documentation, due in part to confidentiality of information or sensitivities
 - No, everyone is guarding their own interests

Questions concerning outputs and implications:

19. Is there clear identification of a 'preferred' or 'best' alternative at the end of the assessment process, and stated requirements for implementation?
- Yes, a 'best' alternative or option is identified and there are clear requirements and authority for implementation
 - Yes, a 'best' alternative or option is identified, but there is no clear requirement or authority for implementation
 - No, a preferred or 'best' alternative is not identified
20. Is there a clearly defined linkage to downstream assessment, review, or approval of subsequent projects or initiatives?
- Yes, assessment results set requirements, thresholds or standards for subsequent actions and decisions to be taken downstream
 - Yes, but more in the form of suggestions and good practice guidelines
 - There is no direct linkage to downstream activities or decisions
21. Are the policies, plans, or programs assessed or approved under the SEA or equivalent system re-assessed?
- Yes, all policies, plans or programs assessed or approved are reviewed on a regular basis (e.g. 5-year reviews)
 - Yes, but there is no formal system in place
 - No, there is no review or this is not how the particular system is intended to operate
22. Is there opportunity for regular review of the nature and performance of the overall SEA or planning/regulatory framework?
- Yes, there is a regular review process (e.g. a 'five year review')
 - The system is reviewed, but it is more of an informal evaluation
 - No, the system is not reviewed or there are no plans for such review
23. Would you say that sufficient funding and support exist for SEA (or equivalent planning and assessment process)?
- Yes
 - It does exist, but more is required to improve process/practice
 - No, it is inadequate

Concluding questions and lessons learnt:

Please feel free to type your responses to these questions below. However, if possible we would appreciate an opportunity to discuss these final and concluding questions over the telephone.

24. Overall, would you say that SEA (or the equivalent planning and assessment process) has been influential?
- a. In influencing or improving policy, plan, or program development?
 - b. In directing and/or improving downstream development and decisions making?
 - c. In other ways?
25. Based on the case application, what would you identify as the key strengths and limitations from the SEA (or equivalent) application?
26. What would you identify as the key lessons learnt from this application for improving future practice?

APPENDIX B

DETAILED CASE STUDY DESCRIPTIONS AND CHARACTERIZATIONS

Case Study # 1: Canada-Nova Scotia Offshore Petroleum Board, Misaine Bank Area SEA

The Canada-Nova Scotia Offshore Petroleum Board (CNSOPB) is an independent joint agency of the governments of Canada and Nova Scotia responsible for the regulation of petroleum activities in the Nova Scotia offshore area. The CNSOPB operates under the authority of the *Canada-Nova Scotia Petroleum Resources Accord Implementation Act* and the *Canada-Nova Scotia Offshore Petroleum Resources Accord (Nova Scotia) Act*. Included amongst the CNSOPB's activities are environmental protection, issuance of licenses for offshore exploration and development, resource evaluation and research, and management and conservation of offshore petroleum resources⁷.

Strategic Environmental Assessments conducted by CNSOPB serve to identify environmental issues and the potential impacts of exploration activities prior to a decision to open an offshore area for licensing. All subsequent projects or activities in the SEA area are still subject to environmental assessment under the *Canadian Environmental Assessment Act*. Previously, the CNSOPB used generic assessments, jointly funded by the petroleum industry, to streamline the regulatory process and to identify environmental effects and mitigation measures beyond those identified in downstream project impact assessments⁸. Included amongst these generic assessments were the effects associated with seismic and exploratory drilling activities on the marine environment. The potential effects of offshore exploration activities identified in these assessments form the core impact assessment information for recently completed SEAs.

Three SEAs have been completed under the CNSOPB to date – a number of offshore licenses had been issued before the SEA system was in place. The first assessment, *Strategic Environmental Assessment Laurentian Sub-basin*, was a joint SEA with the Canada-Newfoundland and Labrador Offshore Petroleum Board in 2003. The *Strategic Environmental Assessment of Potential Exploration Rights Issuance for Eastern Sable Island Bank, Western Banquereau Bank, the Gully Trough and the Eastern Scotian Slope* was completed in 2003. The most recent assessment, *Strategic Environmental Assessment of the Misaine Bank Area*, was completed in 2005. Similar to the previous SEAs, the Misaine Band Area SEA was to provide an overview of the offshore region, identify the potential effects associated with exploration activity, and to assist the CNSOPB in determining whether exploration rights should be offered at all (e.g. no 'Call for Bids'), in whole, or in part for the SEA area (CNSOPB 2005). A draft SEA scoping document was released for public comment in March 2005. The assessment was completed in December 2005.

System characteristics

The CNSOPB is a federal authority under the *Canadian Environmental Assessment Act* and the lead agency for coordinating regulatory activities in the offshore area. There are no formal requirements for SEA under the CNSOPB. This is in contrast to the current SEA system offshore United Kingdom where assessment is now required by the *Environmental Assessment of Plans and Programmes Regulations 2004*, which implement the European Directive on SEA⁹. Under the CNSOPB, SEA is conducted in portions of the offshore area that may be offered in a call for bids for exploration licenses and that have not previously been assessed by comprehensive study or panel review under

⁷ See <http://www.cnsopb.ns.ca>

⁸ See <http://www.cnsopb.ns.ca/environment/index.html>

⁹ SEAs (programmatic EAs) are also required offshore in the Gulf of Mexico as per the U.S. National Environmental Policy Act. Programmatic EAs, such as the 2001 Kerr-McGee assessment on the Outer Continental Shelf, tend to focus on the cumulative and regional impacts of a particular proposed development initiatives, or programs of development, rather than on 'strategic' initiatives per se.

the *Canadian Environmental Assessment Act*, or by a formal public review (CNSOPB 2005). Environmental impact assessments are required separately, as part of the approvals process for offshore seismic and drilling activities.

There is no formal tiered system of PPP and project assessment under the CNSOPB; rather SEA is undertaken solely at the program level prior to issuing a call for bids for downstream exploration and project development. Currently, SEA is guided in part by Fisheries and Oceans Canada's *Eastern Scotian Shelf Integrated Ocean Management Plan* - a multi-year, strategic-level plan to provide long-term direction and commitment for integrated, ecosystem-based and adaptive management of all marine activities in or affecting the planning area.¹⁰ Strategic Environmental Assessment is intended to serve as a learning tool for industry, to identify important VECs and sensitive areas of concern, and to make project-EIA a less onerous and more streamlined task. Sustainability is not explicitly identified as a guiding principle.

Assessment process

The Misaine Bank Area SEA, like other SEAs offshore Nova Scotia, is financed and directed by the CNSOPB. Similar to the United Kingdom's Department of Trade and Industry SEA system¹¹, the primary purpose of SEA is to identify potential environmental issues and concerns and to make recommendations for mitigation and offshore planning. SEA serves to assist in determining whether exploration rights should be offered, in whole or in part, for the offshore area and to identify general restrictive or mitigative measures that should be considered for application to exploration activities within new exploration licenses (CNSOPB 2005). The assessment consisted of an open scoping process, review of seismic surveys and exploratory drilling activities, followed by a baseline description and discussion of the potential effects of, and mitigation options for, exploration activities in the area.

The scope of the SEA is defined in an initial draft scoping document prepared by the CNSOPB, and refined following a public review period. The scoping document identified a list of preliminary VECs to guide the SEA, which were primarily biophysical in nature and derived based on stakeholder consultations and professional judgment. The SEA itself was set in the context of the province of Nova Scotia's energy strategy and the *Eastern Scotian Shelf Integrated Management (ESSIM) Plan* – the latter provides guidance for assessing ocean impacts related to oil and gas exploration. The spatial boundaries for the SEA included the Misaine Bank offshore regulatory/administrative area and adjacent areas in which adverse impacts could be reasonably expected to occur. Information from the SEA area was compared to that of other areas and marine ecosystems. The temporal boundary for assessment was limited to the oil and gas exploration phase.

The SEA describes the current biophysical and commercial fisheries baselines of the Misaine Bank Area. The impacts of seismic activity and exploratory drilling were then assessed on a VEC-by-VEC basis. The SEA considered only two alternatives: to proceed with a call for bids and to issue licenses for exploration, or not to proceed with offshore licensing activity. This is a relatively narrow set of alternatives when considered in light of the spirit of SEA, and reflects more on the nature of alternatives considered at the project-specific level. However, the scope of the alternatives considered in the Misaine Bank Area assessment is consistent with the CNSOPB's intended decision support role of SEA, operating at the program level. A similarly restrictive set of

¹⁰ See Fisheries and Oceans Canada *Eastern Scotian Shelf Integrated Ocean Management Plan* (2006-2011) available at <http://www.dfo-mpo.gc.ca/Library/286215.pdf>

¹¹ <http://www.offshore-sea.org.uk/site/>

alternatives is considered under recent SEAs conducted by the UK Department of Trade and Industry, namely: not to offer any blocks for offshore licensing, to restrict the licensing area either spatially or temporally, or to proceed with licensing as proposed (UK DTI 2007).

The Misaine Bank Area SEA identified the potential impacts of opening the area for licensing, and the associated impacts of seismic and exploratory drilling activity. Impacts were assessed using *ad hoc* methods based primarily on the results of previous studies and generic assessments prepared for seismic and exploratory drilling, which describe the potential environmental effects of such activities on the marine environment. Conventional EIA effects criteria were adopted for impact evaluation, including impact magnitude, geographic extent, duration and frequency, reversibility, and ecological context as well as specific standards and objectives. There is no mention of sustainability criteria as an assessment measure, and social and other human factors are considered only insofar as they relate to impacts on fish resources and implications for the region's commercial fishery. There are no formal provisions for monitoring or follow-up of impacts, mitigation measures, or report recommendations under the CNSOPB SEA framework.

The potential for cumulative effects is identified in the SEA scoping document, with reference to the identification of other planned or reasonable foreseeable activities on the Scotian Shelf and Slope that might interact in a cumulative fashion with potential exploration activities on Misaine Bank. The SEA final report explicitly considers the cumulative environmental effects, mainly related to activities such as seismic surveys and exploratory drilling. In particular, the SEA takes into account a number of previous environmental assessments considered by the CNSOPB, and combined oil and gas industry activities in the review area. The SEA finds potential cumulative impacts of concern related to the chronic oiling of seabirds, and concurrent commercial fishing in the area which could affect benthic communities and fish stocks. That being said, there is no explicit cumulative effects assessment or consideration of potentially interactive or synergistic effects. The SEA considers a modest range of mostly additive effects - none of which are deemed particularly significant and thus not specifically addressed in mitigation.

Public involvement commenced early in the assessment process with invited comments and feedback on a draft SEA scoping document. Meetings and consultations were held with specific affected parties as part of the assessment process, including fisheries unions and associations, First Nations, environmental organizations, and government agencies, and a general public information session also was held. The draft assessment document was made publicly available for comment and review for a 30 day period, which was extended to a 45 day review period. Of the key outcomes of the consultation process was the identification of a sensitive marine environment which would be considered in any future EIA for seismic or exploratory drilling activity in the area.

Outputs and outcomes

Strategic environmental assessment under the CNSOPB is not intended to replace downstream project-based EIA. Rather, the intent is to examine potential environmental impacts at the regional level and to determine if the area under review should be opened for exploration licensing, and if so whether specific planning and management steps are necessary to minimize potential adverse impacts. The SEA did not systematically compare options and select a 'best' option per se, but concluded that the Misaine Bank Area SEA is not more sensitive to the potential effects of oil and gas than other area of the Scotian Shelf, has been less affected by past human activities. The assessment also identified important migratory routes of concern for marine mammals and numerous coastal sites, through the public and stakeholder consultation process, that are sensitive

to potential accidental spills of hydrocarbons. An area also was identified that should be treated as a “special area” and should be included within the geographic scope of subsequent EIAs. Specific mitigation measures for subsequent downstream development and EIAs were identified in the SEA to address specific areas of concern, and to conform to the ESSIM Plan. That being said, there is no mechanism to ensure enforcement of SEA output and compliance with decisions downstream and there is no tiered system of assessment and decision making.

Strategic environmental assessment under the CNSOPB reflects a proactive approach to offshore exploration, but at the same time is inherently restrictive in alternatives consideration and scope when considered in light of the spirit of SEA. The SEA does, however, provide a biophysical baseline and identification of key issues to support downstream project EIA. It is too early to tell whether the Misaine Bank Area SEA has been effective. A call for bids for the area has not yet been issued. However, in a March 2004 proceedings of an Environment Canada sponsored international workshop on regional and strategic assessment offshore, the CNSOPB noted that project-specific EIAs are currently repetitive in nature and weak in addressing cumulative or regional wide effects. The role of SEA is primarily to streamline the EIA and approvals process by identifying potential environmental concerns, sensitive marine environments, and important VECs to inform downstream activity-specific EIA. Important VEC issues and concerns identified in the 2003 Eastern Sable Island Bank, Western Banquereau Bank, the Gully Trough and the Eastern Scotian Slope SEA (CNSOPB 2003) were directly considered in the design and focus of subsequent project EIAs including the Sable and Deep Panuke projects, although outside of the SEA region.

Evaluation of the Canada Nova Scotia Offshore Petroleum Board, Misaine Bank Area SEA

System components	Evaluation criteria and comments*
1. Provisions	<input type="checkbox"/> clear provisions, standards or requirements to undertake the process - <i>No formal requirements or standards for SEA</i>
2. Integration	<input checked="" type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP - <i>SEA initiated prior to issuing a call for bids for offshore licensing, focused on the exploration phase</i>
3. Tiering	<input checked="" type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making - <i>Program-level application only, informally linked to project EIA</i>
4. Sustainable development	<input checked="" type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept - <i>Neither explicitly mentioned nor operationalized</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities - <i>Assessment and decision making are the responsibility of the CNSOPB</i> <input type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review - <i>Normal 30-day review period of scoping and assessment documents</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output - <i>Public and stakeholder input, but no formal appeal process</i>
6. Purpose and objectives	<input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated - <i>Focused on whether exploration rights should be issued, and identification of restrictive or mitigation measures</i> <input checked="" type="checkbox"/> centered on a commitment to sustainable development principles - <i>Neither explicitly mentioned nor operationalized</i>
7. Scoping	<input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue - <i>VEC-based approach, with SEA scope defined through a formal scoping process</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives - <i>SEA linked to provincial energy strategy and guided by federal-based ocean integrated management plan</i> <input checked="" type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context - <i>VEC-based approach to scoping, SEA design, and impact mitigation</i>
8. Alternatives consideration	<input checked="" type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios - <i>Alternatives presented, 'proceed' or 'not proceed' with issuing a call for bids for offshore licensing, but no comparative analysis</i>

9. Impact evaluation
- identification of potential impacts or outcomes resulting from each option or scenario under consideration
 - *Potential impacts identified for the 'proceed' option based on literature review findings of previous studies*
 - integration or review of sustainability criteria specified for the particular case and context
 - *No explicit mention of sustainability criteria in impact assessment*
10. Cumulative effects
- consideration of potential cumulative effects and life cycle issues
 - *Cumulative effects identified in assessment document, but limited in terms of synergistic impact considerations and downstream impacts*
11. Monitoring program
- procedures to support monitoring and follow-up of process outcomes and decisions for corrective action
12. Participation and transparency
- opportunity for meaningful participation and deliberations
 - *Traditional techniques of public meeting, review of SEA document, and opportunity for written submission; opportunity for early comment on scoping document, and with affected stakeholders during assessment*
 - transparency and accountability in assessment process
 - *Assessment documentation publicly available, with a tradition of information sharing amongst the parties involved in assessment*

Results components

Evaluation criteria and comments

13. Decision making
- identification of a 'best' option or strategic action
 - *Default option of 'proceed', adapted for specific mitigation and avoidance measures*
 - authoritative decisions, position of the authority of the guidance provided
 - *Guidelines only, with the exception of identified protected marine spaces or sensitive areas or resources*
14. PPP and project influence
- defined linkage with assessment and review or approval of any anticipated lower-tier initiatives
 - *Recommendations and good practice guidelines for subsequent initiatives*
 - demonstrated influence in PPP development, modification, or downstream initiative
 - *Too early to determine. Call for bids not yet issued under Misaine Bank SEA*
 - identification of indicators or objectives for related or subsequent strategic initiatives or activities
 - *Specific areas or resources of concern identified for downstream EIA*
15. System-wide learning
- opportunity for learning and system improvement through regular system or framework review
 - *Informal mechanisms only for reevaluating PPPs or general systems and frameworks*

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 2: The Great Sand Hills Regional Environmental Study, Saskatchewan

In December of 2004, the Government of Saskatchewan committed to undertake a Regional Environmental Study (RES) of the Great Sand Hills, providing a strategic assessment of human activities that affect the long term ecological integrity and sustainability of the area¹². The RES was a provincial government response to a June 2004 report of the Great Sand Hills Land Use Review Committee on the previous Great Sand Hills Land Use Strategy. The Review Committee's report made recommendations for the future direction of human activities in the region and called for an environmental impact assessment which would set the basis for a comprehensive implementation plan for long-term management of the Great Sand Hills.

The Great Sand Hills is located in southwest Saskatchewan and is one of the largest sand dune complexes in the region. The unique landscape elements and known occurrences of endangered, threatened and sensitive species make the Great Sand Hills an ecologically important landscape. However, the Great Sand Hills have been influenced by both large scale and long-term human influence due to anthropogenic induced surface disturbance activities. Of particular concern are the patterns and impacts associated with livestock grazing and natural gas development, and the cumulative potential of these activities to cause significant habitat alteration and fragmentation across the landscape (Scientific Advisory Committee 2007).

The RES was to provide strategic recommendations to guide human activities in the Great Sand Hills so that the long-term ecological integrity of the area would be maintained, while a corresponding level of environmental, socio-cultural, and economic benefits could be realized. A scoping document defining the overall SEA approach to the RES was released in December 2004 for public comment. The final terms of reference to guide the assessment process and content was released in April 2005. The assessment was completed in May 2007.

System characteristics

There are no formal systems or requirements for SEA in Saskatchewan. The Great Sand Hills RES was initiated to meet a prior land use planning commitment rather than as part of a formal and tiered environmental assessment and planning framework. Although informal, and without the SEA name tag, the RES was explicitly based on an SEA framework and assessment methodology as set out by the RES scoping document and subsequent terms of reference. The application of SEA was an integrated and objectives-led process, where the environmental assessment process unfolded at the same time as planning and decision making. As a result, sustainability criteria were an integrated part of plan development rather than criteria against which the plan was evaluated post-development. The assessment itself was guided by sustainable development as outlined in the 1996 Bellagio Principles and stated in the assessment terms of reference.

¹² This case study is based on the information contained in the draft report of the Great Sand Hills Scientific Advisory Committee's Regional Environmental Study of the Great Sand Hills, and related consultant reports. For information on the Great Sand Hills Regional Environmental Study visit <http://www.se.gov.sk.ca/GSH/default.htm>.

Assessment process

The Great Sand Hills RES was conducted independent of government by a scientific advisory committee, appointed by the Saskatchewan Minister of Environment. Financial management of the assessment was the responsibility of the University of Regina, under contract agreement with Saskatchewan Environment.

The overall objective of the RES was to provide strategic recommendations, in the form of a management plan, to guide human activities in the Great Sand Hills so that the long-term ecological integrity of the area would be maintained while economic benefits are realized (Scientific Advisory Committee 2007). The assessment process consisted of three main phases: a baseline assessment that characterized the current and cumulative biophysical, economic, and social conditions of the region from 1950 to present; the development, projection forward to 2021, and assessment of alternative land use scenarios and surface disturbances; and the identification of a preferred scenario and guidelines and recommendations for implementation, mitigation, and monitoring.

The scope of the assessment was defined initially in the scoping document, tailored to the specific ecological context of the Great Sand Hills, and was refined as the assessment unfolded. A total of 20 biophysical, economic, and social VECs were identified for consideration in the baseline assessment, and carried to impact and scenario analysis and recommendations. Assessment VECs were identified based on an open scoping process involving members of the scientific advisory committee, area stakeholders, First Nations, and guided by previous land use planning initiatives.

The projected baseline plus three alternative future scenarios of land use and surface disturbance were identified and assessed in the RES. The scenarios focused on various combinations of the cumulative effects of natural gas development, road construction, and cattle grazing and varying intensities and rates. The primary focus of scenario assessment was biophysical in nature, with significant emphasis on biodiversity and ecological integrity. The direct and indirect economic impacts of each scenario were considered, as well as the economic implications of biophysical change. Social implications were discussed relative to both the biophysical and economic impacts of future scenarios, but there was no direct social impact assessment consideration.

Each phase of the RES considered the input of affected stakeholders, interests, and First Nations. Early opportunity for public involvement was ensured through the release of the scoping document and assessment terms of reference. A communications strategy was also developed as part of the assessment process, consisting of a project website and community newsletters. However, to date there has been no formal consultation or public review of the assessment documents or process. Information collected during the assessment process was kept confidential as per the requirements of the agreement between the government and the independent scientific advisory committee.

Outputs and outcomes

The Great Sand Hills assessment did not carry the SEA name tag, but it was explicitly based on SEA methodology. As a multi-sector, regional approach, the RES demonstrates a relatively ambitious SEA, proactive in terms of planning orientation, and outward-focused on achieving a broader regional vision. The final assessment document reported the current baseline conditions of the region, considering pressures from both past and present activities, and the impacts of alternative future scenarios. A preferred scenario was identified for the Great Sand Hills recommending particular sites of enhanced protection and best-practice land use management.

Numerous recommendations for plan implementation, future planning and assessment, and monitoring were also identified by the scientific advisory committee, along with specific targets, thresholds, and objectives for select ecological components. The intent is that such recommendations, and the RES itself, would inform and guide future project-based development, land use zoning, and decision making. However, there is no formal tiering arrangement and the strategic decision and the responsibility for implementation are beyond the authority of the independent scientific advisory committee and rests with the government agency. At the time of this report the RES was still under review by the government. As such, it is too early to determine whether the strategic recommendations will be implemented and influence downstream project EA and decision making.

Evaluation of the Great Sand Hills Regional Environmental Study, Saskatchewan*

System components	Evaluation criteria and comments
1. Provisions	<input checked="" type="checkbox"/> clear provisions, standards or requirements to undertake the process - <i>SEA response to previous land use study review; no legislated requirement</i>
2. Integration	<input checked="" type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP - <i>Integrated plan and assessment; alternatives developed as part of process</i>
3. Tiering	<input checked="" type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making - <i>Plan level assessment; no explicit or formal tiering arrangement</i>
4. Sustainable development	<input checked="" type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept - <i>Based on the Bellagio Principles as stated in SEA terms of reference</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities - <i>Design and implementation the responsibility of an independent committee; final decision making the responsibility of government</i> <input checked="" type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review - <i>Assessment by an independent committee not directly accountable to government; financial management transferred to a University institution</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output - <i>No formal opportunity thus far in the process.</i>
6. Purpose and objectives	<input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated - <i>Assessment sets out to provide strategic recommendations, in the form of a management plan, to guide land use activities</i> <input checked="" type="checkbox"/> centered on a commitment to sustainable development principles - <i>Explicit commitment to sustainability principles; assessment guided by biodiversity and ecological integrity</i>
7. Scoping	<input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue - <i>Assessment design developed through early scoping process and is context specific to maintaining ecological integrity of the region</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives - <i>Integration and consideration of several acts, existing and proposed by-laws and land use regulations from the local to the national scale</i> <input checked="" type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context - <i>VECs identified through scoping involving stakeholders and First Nations</i>
8. Alternatives consideration	<input checked="" type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios - <i>Baseline and alternative scenarios of surface disturbance projected and assessed based on sustainability and ecological integrity criteria</i>

9. Impact evaluation
- identification of potential impacts or outcomes resulting from each option or scenario under consideration
 - *Biophysical, ecological, and economic impacts identified for each scenario; less attention to social and cultural impacts beyond the baseline phase*
 - integration or review of sustainability criteria specified for the particular case and context
 - *Sustainability criteria and indicators specific to the ecological and socio-economic environment of the region*
10. Cumulative effects
- consideration of potential cumulative effects and life cycle issues
 - *Cumulative baseline conditions identified; and 'surface disturbance' used as a proxy for cumulative impact; no separate cumulative effects analysis*
11. Monitoring program
- procedures to support monitoring and follow-up of process outcomes and decisions for corrective action
 - *Issues and indicators identified and recommended for monitoring and follow-up, but no detailed monitoring or follow-up program*
12. Participation and transparency
- opportunity for meaningful participation and deliberations
 - *Public review of scoping document and stakeholder involvement in assessment process; no formal public review of final document to date*
 - transparency and accountability in assessment process
 - *Government requirement that assessment data and documentation treated as confidential throughout assessment process*

Results components

Evaluation criteria and comments

13. Decision making
- identification of a 'best' option or strategic action
 - *Preferred land use scenario and conservation areas identified*
 - authoritative decisions, position of the authority of the guidance provided
 - *Independent committee responsible for assessment has no authority or decision making power*
14. PPP and project influence
- defined linkage with assessment and review or approval of any anticipated lower-tier initiatives
 - *Recommendations for downstream land use and development*
 - demonstrated influence in PPP development, modification, or downstream initiative
 - *Too early to determine*
 - identification of indicators or objectives for related or subsequent strategic initiatives or activities
 - *Key issues and indicators for the assessment region identified as recommendations or principles, but no clear adoption requirements.*
15. System-wide learning
- opportunity for learning and system improvement through regular system or framework review
 - *Unknown at this time; not specified.*

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 3: National Capital Commission Core Area Sector Plan Assessment

The National Capital Commission (NCC) is a planning agency of the government of Canada, created by parliament in 1959. The NCC operates under the authority of the *National Capital Act* as an arms' length, Crown Corporation. Its mandate is to plan federal lands within Canada's Capital region. Similar to its predecessors – the Federal District Commission and the Ottawa Improvement Commission – the NCC guides the development and use of federal lands; plans development commensurate with the role and significance of the National Capital Region; prepares long-range plans to guide policies concerning the ownership, use and development of federal lands; prepares area site plans to shape the development of specific areas of the Capital; and prepare land use and design approvals for Capital federal lands¹³.

Several plans concerning Canada's Capital region have been developed by the NCC and at various spatial and planning scales, including the Federal Land Use Plan (1988), the Greenbelt Master Plan (1996), the Plan for Canada's Capital (1999), and the Gatineau Park Master Plan (2005). In June 2003 the NCC commenced development of the Core Area Sector Plan (CASP), representing the final stage of a three-stage planning process. The CASP is intended to be "the lead policy document governing the planning and development of federal lands in the Core Area over the next twenty years" (NCC 2005). As part of plan development, the CASP was subject to SEA under the direction of the NCC, guided by a vision statement that focuses on the protection of natural features and improvement to the quality of urban life in the Core area. The CASP and SEA were completed in 2005.

System characteristics

Strategic environmental assessment is a policy requirement of the NCC, conducted to adhere to the spirit of the Cabinet Directive and its recommendation that "...Agencies conduct strategic environmental assessments for other policy, plan and program proposals" (Canada 2004). There are no specific standards for SEA under the NCC, but there are guidelines that provide overall direction including *Environmental Assessment: Making Better Decisions* – a guidebook designed primarily for those responsible to land use planning and planning for the implementation of projects and activities, but also for external proponents of activities on NCC lands and the general public. The application of SEA is parallel to plan development, intended to feed into the content and design of the final planning document in support of sustainable urban development, healthy communities, and smart growth (NCC 2005). Although not all plans developed by the NCC have been subject to assessment, SEA is currently set within the context of a tiered forward-planning system. At the top of this hierarchy are long range visionary or policy plans, followed by detailed master plans for specific areas of the Capital region, sector plans that apply the policies to specified geographic areas and address individual structures or green spaces, and finally area plans that specify the nuts and bolts for specific planning areas. Specific implementations and project related actions are addressed in subsequent project-based EIAs under the *Canadian Environmental Assessment Act*.

Assessment process

Strategic environmental assessment of the CASP was the responsibility of the NCC, but carried out by an independent team of consultants according to a Terms of Reference developed through a

¹³ See http://www.capcan.ca/bins/ncc_web_content_page.asp?cid=16300&lang=1

working committee and a steering committee, with feedback from the NCC Advisory Committee on Planning, Design, and Realty. The CASP was the third phase of a three-phase planning initiative, commencing with a *Vision for the Core Area of Canada's Capital Region* (1998) and followed by a *Concept of Canada's Capital Core Area* (2000), and integrates the objectives and findings of numerous additional plans prepared by the NCC and by other federal, provincial, and municipal government departments and agencies in the Core Area.

The purpose of the CASP was to identify a framework of policies and initiatives for development, programming, environmental integrity, transportation, animation, architectural and design quality on federal lands in the Capital's Core Area, and to guide decision-making and inform planning initiatives over the next 20 years. The overarching objective was to "be a model of sustainable urban development with regard to socioeconomic and cultural environment". More specifically, the CASP seeks, among other things, to: communicate the future perspective and view of the federal government respecting the Core Area; develop and set out principles, goals and policies that guide decisions on land use planning in support of the key functions of the Capital; determine the land base necessary for the future Capital and define the optimum use of these lands in terms of future requirements; set the framework for the preparation and achievement of more detailed plans for federal lands in the Core Area (NCC 2005). The SEA was conducted as a parallel process to the plan, with information feeding into the planning process, intended to "ensure that environmental considerations are built into future planning processes for the resulting strategies and projects" (NCC 2005).

The scope of the assessment was defined by the scope of the developing plan which, in turn, was guided by the overarching objective of the Core Area to "be a model of sustainable urban development with regard to socioeconomic and cultural environment" (NCC 2005). This objective was operationalized in the SEA in terms of environmental planning objectives that were deemed pertinent to one or more of the CASP planning principles and could be used as organising concepts for environmental considerations, applicable across more than one planning principle thus allowing identification and prioritization of conflicts between interests and objectives, attainable, and sensitive to the influence of the CASP.

The SEA application was objectives led, assessing the implications of future policy, plan and project initiatives resulting from the CASP according to specified biophysical, socioeconomic, and cultural VECs and objectives (e.g.: VEC: water resources; objective: ensure the protection of natural shorelines). A structured and systematic approach to SEA was adopted. First, potential future initiatives and projects under the plan were identified and the types of activities most likely to occur identified. Each initiative was then reviewed to assess the potential environmental effects on each of the identified VECs, including the potential effects due to spatial and temporal crowding. Residual effects and determination of significance was undertaken by cross-referencing the proposed CASP initiatives and other known activities in the region with foreseeable environmental conditions or trends. Mitigation measures and monitoring measures were then recommended for each of the potentially adverse environmental effects.

Both the plan and the SEA were subject to several workshops between 2003 and 2005 involving federal and municipal partners and agencies, and the general public. There is no formal appeal process and neither is one deemed necessary by the NCC; both the plan and SEA document are subject to a typical 30-day public review period. Annual public meetings, public consultations, and annual meetings and consultations with special interest groups are held by the NCC as part of the overall planning process.

Outputs and outcomes

Strategic environmental assessment under the NCC is situated within a tiered forward-planning system ranging from broad policy plans and overarching visions to site-specific objectives and implementation plans. As a sector plan, the CASP was third in a hierarchy of previous plans for the Core area; however, but SEA results are not formally tied to project specific EIA which would occur in the NCC region under the *Canadian Environmental Assessment Act*. The SEA of the CASP concluded that there are no significance residual negative effects of the plan's initiatives (NCC 2005). The plan was endorsed by the NCC in June 2005 as a plan that presents the optimum use of Core area lands in terms of future requirements. That being said, the SEA report provides limited evidence of the systematic comparison of alternative options to arrive at the 'preferred' strategic option(s). Rather, emphasis is placed on identifying a range of future planning actions or initiatives most likely to result from the CASP, and evaluating their potential impacts. While the impacts can be compared across plan actions and initiatives, it is not clear whether competing options were considered. However, the CASP itself is reported by the NCC to have been improved through SEA application and results of the SEA are reported to have improved subsequent planning initiatives, including the Commemorations Plan, and to have influenced the LeBreton Flats and the Islands area plans. Downstream at the project level, SEA viewed by the NCC as an opportunity to increase the efficiency of EIA through advanced consideration of underlying concepts and cumulative effects. Public involvement and the systematic approach to assessment are identified as key strengths of the NCC's SEA methodology. However, conducted parallel to plan development, SEA results proved difficult to coordinate and integrate with the CASP planning process.

Evaluation of the National Capital Commission Core Area Sector Plan Assessment

System components	Evaluation criteria and comments*
1. Provisions	<input type="checkbox"/> clear provisions, standards or requirements to undertake the process - <i>SEA is a policy requirement of the NCC; process and guidebook developed to facilitate EA design and applications</i>
2. Integration	<input type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP - <i>SEA as a parallel process to identify potential impacts of planning actions and mitigation measures, with feedback to the planning process</i>
3. Tiering	<input type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making - <i>Hierarchy of SEA for policy, master, area, and sector plans; remains independent of project-based EIA</i>
4. Sustainable development	<input checked="" type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept - <i>Overall guiding principles are sustainable urban development, healthy communities, and smart growth</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities - <i>Decision making rests with NCC; SEA carried out by independent consultant based on prepared Terms of Reference.</i> <input checked="" type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review - <i>Terms of Reference developed through a working committee and a steering committee, with feedback from the NCC advisory committee.</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output - <i>Opportunity for public and stakeholder input, but no formal appeal process</i>
6. Purpose and objectives	<input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated - <i>To ensure the plan incorporates sound environmental planning principles</i> <input checked="" type="checkbox"/> centered on a commitment to sustainable development principles - <i>Sustainable urban development operationalized by specific plan objectives which guide the SEA</i>
7. Scoping	<input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue - <i>Flexible to specific planning issue; SEA used to validate, or not, the planning process</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives - <i>Cross-referencing of proposed strategies and projects and other known or foreseeable activities of related plans and organizations</i> <input checked="" type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context - <i>VECs adopted from broad environmental planning objectives, previous Core Area Plan, and based on public and stakeholder consultation</i>

8. Alternatives consideration	<input checked="" type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios - <i>Range of potential plan actions and outcomes assessed, but no explicit comparison of alternatives or scenarios</i>
9. Impact evaluation	<input checked="" type="checkbox"/> identification of potential impacts or outcomes resulting from each option or scenario under consideration - <i>Potential impacts identified for planning, construction and operating activities likely to result from the single plan option proposed</i> <input type="checkbox"/> integration or review of sustainability criteria specified for the particular case and context - <i>Indicators used for biophysical, socioeconomic and cultural impact assessment but not explicitly sustainability based or cross-referenced</i>
10. Cumulative effects	<input type="checkbox"/> consideration of potential cumulative effects and life cycle issues - <i>Consideration of spatial and temporal effects in assessment matrix; no separate CEA</i>
11. Monitoring program	<input type="checkbox"/> procedures to support monitoring and follow-up of process outcomes and decisions for corrective action - <i>Informal monitoring by the NCC; adverse or cumulative impacts may require specific monitoring, plan revision, or project EIA</i>
12. Participation and transparency	<input checked="" type="checkbox"/> opportunity for meaningful participation and deliberations - <i>Participation based on a long-term public involvement and partnership arrangement as part of the NCC planning process including workshops, public forums, interviews, and surveys</i> <input checked="" type="checkbox"/> transparency and accountability in assessment process - <i>Planning and SEA process subject to several workshops with federal and municipal departments and agencies and the public</i>

Results components

Evaluation criteria and comments

13. Decision making	<input type="checkbox"/> identification of a 'best' option or strategic action - <i>Preferred plan presented resulting from the SEA, but competing options not explicitly identified or explored</i> <input type="checkbox"/> authoritative decisions, position of the authority of the guidance provided - <i>SEA results and subsequent decisions are planning recommendations; shared planning responsibility with provincial and municipal government</i>
14. PPP and project influence	<input type="checkbox"/> defined linkage with assessment and review or approval of any anticipated lower-tier initiatives - <i>Sets guidelines and standards for downstream projects subject, but subsequent EA approval not contingent on meeting those guidelines</i> <input checked="" type="checkbox"/> demonstrated influence in PPP development, modification, or downstream initiative - <i>Several plans since developed influenced by the results of the SEA and Core Area Sector Plan</i>

- identification of indicators or objectives for related or subsequent strategic initiatives or activities
 - Objectives and indicators based on higher tiered plan, and tied forward to subsequent plan and project initiatives
- 15. System-wide learning
 - opportunity for learning and system improvement through regular system or framework review
 - *NCC Planning Framework instructs a review every five years, and an in-depth review and revision every ten years*

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 4: Foreign Affairs and International Trade Initial Environmental Assessment of World Trade Organization Negotiations

The Department of Foreign Affairs and International Trade (DFAIT) is the lead federal department responsible for conducting the environmental assessment of trade negotiations. In 2001, in response to the 1999 *Cabinet Directive*, DFAIT released its framework for the environmental assessment of trade negotiations establishing a process for SEA with the intent of factoring environmental considerations into the negotiations of trade agreements. The SEA of trade negotiations has two key objectives: first, to provide a means to integrate environmental concerns into the negotiating process, identifying economic effects and subsequent environmental impacts; second, to address public concerns by documenting how environmental issues and impacts are considered during trade negotiations. The overall intent is to ensuring greater coherence between trade and environment policies (DFAIT 2001).

The scope of SEA application under DFAIT includes negotiations for bilateral, regional, multilateral trade negotiations, and negotiations for Foreign Investment Protection Agreements¹⁴. Multiple SEAs have been initiated under this framework, all at various stages of assessment, including trade and investment negotiations for the Free Trade of the America, Central America Four, and Singapore Trade Negotiations, Canada-Peru Foreign Investment Protection Agreement, the Canada-EU Trade and Investment Enhancement Agreement, and negotiations of the World Trade Organization (WTO). Multilateral trade negotiations for the WTO (Doha Development Agenda) commenced in November 2001 and cover a number of areas including the phasing out agricultural export subsidies, reduction or elimination of non-agricultural tariffs, improvements in market access for services, and the relationship between WTO rules and multilateral environmental agreements. The 'initial' SEA of the WTO negotiations, *Initial Environmental Assessment of the World Trade Organization (WTO) Negotiations*, was released by DFAIT in November 2002¹⁵.

System characteristics

The SEA of trade negotiations is carried out in compliance with the *Cabinet Directive* on the environmental assessment of PPP proposals (Canada 2004). The SEA process is guided by the DFAIT *Framework for Conducting Environmental Assessments of Trade Negotiations*, created in response to the 1999 *Cabinet Directive*, which establishes the assessment process and analytical requirements for SEA. The intention of the *Framework* is that SEA will facilitate the early consideration of environmental factors into trade negotiations. The Framework for SEA is thus intended to be both flexible and generic such that it could be applied to current and future trade liberalizing negotiations in the WTO, the Free Trade Area of the Americas, and in bilateral Free Trade Agreements (FTAs) while using a consistent methodology (DFAIT 2001).

While the Framework is not explicitly tiered toward downstream decisions and actions within a structured PPP arrangement, there is a tiered process of SEA application within the Framework (DFAIT 2001). Following an announcement of the intent to conduct an SEA, an 'initial' SEA document is prepared to scope the main environmental issues and concerns likely to arise from the negotiations and a decision is made as to whether further assessment is required. If there is a likelihood of significant environmental effects, a 'draft' SEA is prepared and released at the start of

¹⁴ See <http://www.dfait-maeci.gc.ca/tna-nac/env/faq-en.asp>

¹⁵ The WTO initial environmental assessment is available at <http://www.international.gc.ca/tna-nac/ea1105-en.asp>

trade negotiation to inform negotiators of the identified environmental concerns. A final SEA report is prepared after negotiations have been completed, documenting the outcome of the negotiations in relation to the SEA process. The overall SEA system is based on the premise of a federal commitment to sustainable development. While the SEA process does include opportunities for adverse impact mitigation and the creation and enhancement of positive impacts, it is not explicitly sustainability-based when compared the Sustainability Impact Assessment (SIA) approach employed by the European Union (EU). However, the European Union SIA approach, focusing on broad qualitative techniques, is noted in DFAIT's overview of trade assessment models as "too general for an accurate assessment" (DFAIT 2001: 21).

Assessment process

The SEA of the WTO negotiations is based on the standards and procedures as set out in the DFAIT Framework. An interdepartmental steering committee, coordinated by DFAIT, with representatives from the relevant federal departments and agencies is responsible for SEA – a separate committee is established for the assessment of each negotiation. The committee varies according to the nature of the proposed negotiations, but includes mandatory representative from the Canadian Environmental Assessment Agency, Environment Canada, and Foreign Affairs. Consistent with the Guidelines for implementing the *Cabinet Directive*, SEA is 'in house' and based on the principle of self-assessment.

The WTO negotiations are expected to contribute to poverty reduction, development, and long-term social and economic progress through better access to global markets for Canadian exporters, clarifying and improving multilateral trade rules, and helping advance Canada's sustainable development objective. The purpose of the SEA was to identify the potential sectors or activities that may be affected by WTO negotiations, with the principal aim to scope the main environmental issues that might arise and which will be given more rigorous analysis in the draft and final stages of the SEA process. As such, the initial SEA of WTO negotiation was not an assessment of the environmental impacts of economic growth *per se*, but of the potential environmental issues and effects of resulting economic activity and trade policy changes.

The scope of the WTO SEA was determined based on the particular set of trade issues to be negotiated, namely the effects of phasing out agricultural export subsidies, tariff reductions in non-agricultural products, additional trade in services, import anti-dumping disciplines, environmental commitments, wines and spirits registry, and dispute settlement. Comments received following the formal announcement of intent to conduct the assessment, the nature of the potential economic changes resulting from the trade issues, and guidance contained in the DFAIT *Framework* served to establish the scope of SEA. The SEA focuses on environmental impacts in Canada, where the negotiations are expected to have an economic effect based on expected changes in economic activity, in order to identify and assess the likely and significant environmental impacts on the Canadian environment. There also are approximately 20 multilateral environmental agreements that regulate trade or contain trade provisions. Not all of these agreements are considered in detail in the initial SEA, rather the focus is placed in only a few more directly related agreements including, for example, the *Convention on International Trade in Endangered Species* and the *Montreal Protocol for the Protection of the Ozone Layer*.

Alternatives are considered in the WTO SEA, conceptualized as possible trade scenarios, but the range is limited. For agricultural and non-agricultural market access negotiations, alternatives are limited to 50% reduction in the status quo or baseline conditions for each of agricultural export

subsidies and non-agricultural market tariff reductions. For the remaining issues, such as services, rules and trade facilitation, alternatives are qualitative in nature. Alternatives serve primarily a scoping function for the SEA, narrowing the range of possible trade-induced economic and regulatory changes to be assessed.

Five different types of effects are considered in the SEA, including: changes in overall production and consumption; shifts in production and consumption toward different sectors in the economy; changes in the types of products that are produced or consumed; changes in potential technologies used as a result of the negotiation; and impacts on current and future policy development and implementation. Following the identification of the effects of the trade negotiation, the likely environmental impacts of such changes are identified. Assessment is guided by a number of generic questions, such as: Will the trade negotiations affect the achievement of an environmental quality goal (e.g., reduction of greenhouse gas emissions or protection of endangered species)?; Will the trade negotiations increase or decrease the availability of environmental goods and services, the consumption of ecologically sensitive inputs, the movement of environmentally-hazardous goods, or any other environmental externalities? The impact assessment adopts a relatively restrictive interpretation of 'environment', focusing primarily on the biophysical environment. Impact significance is determined using standard EIA-based principles, including impact frequency and duration, risk, reversibility, spatial extent and magnitude. Impact enhancement and mitigation measures are then addressed for potentially significant environmental effects.

Public involvement in the DFAIT WTO SEA process was formal, based primarily on written submissions from the general public and on consultations with representatives of the provinces and territories, non-government organizations, and the business community through a Sectoral Advisory Groups on International Trade. Consultation was early on in the process, prior to negotiations taking place. A 'notice of intent' to conduct an SEA was announced in the Canada Gazette and on the DFAIT website at the same time as announcement of the trade negotiation. The purpose was to publicize the intention to conduct the SEA and to invite comments, over a 60-day period, on environmental matters related to the proposed negotiations. A similar 60-day public review period followed release of the initial SEA, with the intent that comments received would feed into the draft SEA and trade negotiations¹⁶.

Outputs and outcomes

Initial SEA under the DFAIT Framework occurs early on in trade negotiation process, and a more detailed Draft EA occurs at an advanced stage of the negotiations. The Framework allows for further analysis if changes occur in latter stages of the negotiations, and calls for a Final EA based on the conclusion of the negotiations. The initial SEA of WTO negotiations concluded that the effects, in aggregate, the new WTO negotiations are likely to have on the Canadian environment are minimal. Mitigation and monitoring measures were identified, but such recommendations are non-binding under the current framework. The next step in the WTO assessment process is the draft SEA; the completion of which will depend on re-launching of the WTO negotiations. To date, there have been no cases where a significant shift in Canada's trade negotiating position would change the anticipated environmental impacts of the negotiations.

¹⁶ WTO negotiations were suspended in July 2006, and the SEA process did not proceed to the draft SEA and final SEA stage. The DFAIT Framework provides for similar 60-day consultation periods for draft and final SEA reports. On 27 January 2007 Canada called for a re-launching of the negotiations. See <http://www.international.gc.ca/tna-nac/WTO/doha-relaunch-en.asp> for media release.

Perhaps the only significant outcome of the SEA of trade negotiations under the DFAIT framework is simply increased recognition of the relationship between international trade and the environment. However, this is not surprising given the increased global recognition of the potential environmental and social impacts associated with the liberalization of international trade. Since the mid-1990s, beginning in Canada with a retrospective assessment of the North American Free Trade Agreement, these concerns have increasingly been addressed through the impact assessment of trade-related policies and agreements¹⁷. That being said, the SEA of WTO negotiations is in many respects narrowly focused. Notwithstanding an overall commitment to sustainable development, the SEA is focused primarily on the biophysical impacts of economic and policy changes. Alternatives (i.e., scenarios) are explored, but with no intent to systematically compare alternatives in order to arrive at a preferred option – this was not the intent of the SEA; rather, the intent was to identify potential environmental issues and impacts in order to inform trade negotiations and identify measures to mitigate anticipated negative environmental impacts. Potential impacts are inward focused, with no attention to transboundary or international impacts.

Public input to the SEA process to date has been limited, with relatively few comments and questions received on the initial SEA. A number of initiatives were undertaken in an attempt to enhance public input and improve communication, including the development of an 'FAQ' section on the DFAIT website, creating an advisory group, and reporting and circulating comments as they are received. Little has changed, however, and public input to the SEA process remains less than desired. This is perhaps not surprising given the heavy reliance on traditional and relatively passive forms of public involvement. The timing of SEA also remains a challenge. The three phase approach to SEA advances based on progress in the negotiations. It can be difficult to determine the best time to conduct each phase of SEA, particularly when negotiations move slowly or when progress occurs at differing speeds in the various negotiating areas.

¹⁷ See George and Goldsmith (2006) and the special volume of *Impact Assessment and Project Appraisal* dedicated to the impact assessment of trade-related policies and agreements.

Evaluation of the Foreign Affairs and International Trade Initial Environmental Evaluation of World Trade Organization Negotiations*

System components	Evaluation criteria and comments
1. Provisions	<input checked="" type="checkbox"/> clear provisions, standards or requirements to undertake the process - <i>Implemented as per Cabinet Directive, carried out as per guidance under DFAIT framework for the assessment of trade negotiations</i>
2. Integration	<input checked="" type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP - <i>Three-phase assessment: initial, draft, and final, with initial assessment serving primarily as a scoping exercise for the final assessment</i>
3. Tiering	<input checked="" type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making - <i>SEA process is multi-staged, but no tiered system of PPP decision making</i>
4. Sustainable development	<input type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept - <i>Identified as rationale behind, but not well integrated into the SEA process</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities - <i>SEA is managed by an interdepartmental steering committee, coordinated by DFAIT, which ensures implementation</i> <input type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review - <i>Formal provisions for public review of SEA documents; process based on principle of self-assessment under the Directive</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output - <i>No formal opportunity for appeal under Directive-based assessments</i>
6. Purpose and objectives	<input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated - <i>Assessment sets out to identify environmental issues to carry forward to draft SEA and initial negotiations</i> <input type="checkbox"/> centered on a commitment to sustainable development principles - <i>Implicit, with reference to broad federal government commitment to sustainable development</i>
7. Scoping	<input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue - <i>Systematic methodology, but flexible to other trade applications</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives - <i>WTO negotiations encompass several multilateral environmental agreements noted in the SEA</i> <input checked="" type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context - <i>Important issues or VECs identified through a formal scoping process, the initial environmental evaluation</i>

8. Alternatives consideration	<input type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios - <i>Limited to a comparison of single scenario of 50% baseline against the current baseline condition</i>
9. Impact evaluation	<input checked="" type="checkbox"/> identification of potential impacts or outcomes resulting from each option or scenario under consideration - <i>Biophysical impacts identified and characterized as a result of anticipated economic changes</i> <input checked="" type="checkbox"/> integration or review of sustainability criteria specified for the particular case and context - <i>No explicit use or consideration in impact evaluation</i>
10 Cumulative effects	<input checked="" type="checkbox"/> consideration of potential cumulative effects and life cycle issues - <i>Mentioned in SEA, but no explicit consideration or assessment</i>
11. Monitoring program	<input type="checkbox"/> procedures to support monitoring and follow-up of process outcomes and decisions for corrective action - <i>Formal requirement for follow-up of SEA recommendations and implementation; informal monitoring of predicted impacts</i>
12. Participation and transparency	<input type="checkbox"/> opportunity for meaningful participation and deliberations - <i>Public review of SEA documents, limited active involvement</i> <input type="checkbox"/> transparency and accountability in assessment process - <i>Framework for SEA and final reports publicly available; interdepartmental steering committee and Cabinet documents not readily available</i>

Results components

Evaluation criteria and comments

13. Decision making	<input type="checkbox"/> identification of a 'best' option or strategic action - <i>Not directly; SEA serves to identify environmental concerns about trade negotiations and to inform subsequent rounds</i> <input checked="" type="checkbox"/> authoritative decisions, position of the authority of the guidance provided - <i>Recommendations only, non-binding responsibilities on the SEA recommendations</i>
14 PPP and project influence	<input type="checkbox"/> defined linkage with assessment and review or approval of any anticipated lower-tier initiatives - <i>Limited tiering, with recommendations only which may be adopted for downstream decisions</i> <input type="checkbox"/> demonstrated influence in PPP development, modification, or downstream initiative - <i>Too early to determine; subsequent assessment rounds not yet complete</i> <input type="checkbox"/> identification of indicators or objectives for related or subsequent strategic initiatives or activities - <i>Limited number of biophysical indicators identified in assessment, based on Agriculture and Agri-Food Canada's Agri-Environmental Indicators</i>
15. System-wide learning	<input type="checkbox"/> opportunity for learning and system improvement through regular system or framework review - <i>Informal review or evaluation</i>

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 5: British Columbia Offshore Oil and Gas Moratorium Federal Public Review

In May 2003, Natural Resources Canada (NRCan) called for a federal public review of the long-standing moratorium on oil and gas activity in the Queen Charlotte Basin, offshore British Columbia. The review was to identify the potential impacts of oil and gas activity in the region and to identify information gaps that may need to be filled prior to, or following, any decision on lifting the moratorium¹⁸. The Queen Charlotte Basin is situated between mainland BC and the Queen Charlotte Islands. The Basin is host to a number of ecologically sensitive species, the distributions of which remain poorly understood, and also to significant oil and gas reserves. Current estimates suggest 6 fields with a combined production potential of 1.3 billion barrels of oil, and 9 fields totalling more than 9.8 trillion cubic feet of natural gas (Royal Society of Canada 2004).

Exploration offshore B.C. began around 1958, with wells first drilled in the Hecate Strait and Queen Charlotte Sound in the late 1960s. A provincial moratorium was imposed on offshore exploration during 1959 and 1966, and in 1972 the Government of Canada made a policy decision to not approve any new exploration permits or programs and to suspend all current activities due to concerns over potential environmental impacts. In 1981 a similar restriction was imposed by the Government of British Columbia. Between 1984 and 1986 a joint federal-provincial environmental assessment panel review of the potential impacts of offshore activity was undertaken (WCOEEAP 1986), with more than 90 recommendations and conditions identified to be applied to offshore activities. Following the 1989 Exxon Valdez spill, however, a decision was made to continue the moratoria.

The Government of British Columbia since commissioned a number of reviews and scientific studies, including a 2002 review which concluded that there was no fundamental inadequacy of science or technology to justify a blanket moratorium (Strong et al. 2002). The Government of British Columbia requested that the Government of Canada consider lifting the federal moratorium on oil and gas activities. Before deciding whether to lift the moratorium, the Government of Canada initiated a process to identify science gaps relative to possible oil and gas development offshore and to consult the public on the possible impacts of lifting the moratorium (Royal Society of Canada 2004). The review commenced in 2003 and was completed in 2004.

System characteristics

The federal review of the B.C. offshore oil and gas moratorium was an SEA in all but name, conducted in accordance with the provisions of the 1999 *Cabinet Directive*. Sadler (2005: 49) describes the assessment as an “extended SEA”, established to “definitively ‘roll up’ long-standing issues and uncertainties relating to the environmental justification of the moratorium. The assessment system was multi-track, consisting of three parallel and independently administered processes: a science review of information and knowledge gaps concerning oil and gas activity; a public review and consultation process; and a First Nations engagement process¹⁹, which together comprise the SEA regarding the federal Government’s decision on whether or not to lift the federal moratorium.

¹⁸ An overview of the BC oil and gas moratorium assessment is presented by Sadler (2005) as a case study of “leading edge” SEA.

¹⁹ Copies of the panel reviews are available at <http://www2.nrcan.gc.ca/es/erb/prb/english/View.asp?x=655>

Assessment process

Natural Resources Canada was the responsible federal authority for assessment; however, each of the three SEA tracks was undertaken by an independent, federally commissioned panel. The science review was undertaken by an expert panel appointed by the Royal Society of Canada (RSC), which itself has a formal and published set of procedures for how panel members are to be selected and how the panel process is to be conducted. As part of the RSC panel process, the original terms of reference for the review were accepted only provisionally until the final panel was appointed. The terms of reference were then reviewed jointly by the panel and NRCan. The final report of the panel was subject to an external peer review process, and released to the public independent of any prior review and comment of the report by NRCan. The public review panel and the First Nations engagement process were equally independent processes.

The overall objectives of the SEA were to identify science gaps related to possible oil and gas activity offshore British Columbia; hear the views of the public on whether the existing moratorium should be lifted for selected areas; and ensure that issues and concerns of First Nations are fully explored. The alternatives under consideration were simply to lift the federal moratorium or not.

The assessment process reflected a three-pronged approach. The science review identified important science gaps and their implications for offshore oil and gas activity which may need to be filled before a decision is made in respect to the moratorium, evaluated sensitive environments within the review area, and identified additional areas requiring special management measures in the event of a decision to lift the moratorium (Royal Society of Canada 2004). A baseline report characterizing the physical and ecological environments of the Queen Charlotte Basin review area was compiled, and the impacts of oil and gas activity assessed using a risk characterization framework. Impacts of seismic exploration, exploratory drilling, and production, as well as the potential impacts of catastrophic events including spills and blow outs were considered in the assessment. Mitigation and monitoring measures, as well as sensitive marine environments were identified. Consideration was also given to exiting resource industries in the region, including fishery, forestry, and mining, and to tourism and aquaculture operations.

The purpose of the public review panel was to hold public meetings to obtain the views of British Columbians on matters relevant to the federal moratorium on oil and gas activities, with a particular emphasis on communities in the Queen Charlotte Region - those most likely to be affected by any decision regarding the moratorium (Priddle et al. 2004). The public review reported only on what the public had said; there was no analysis of the impacts or implications of the views presented to the panel. The First Nations engagement process set out to assist First Nations members in obtaining information about the moratorium review; ensure that First Nations were aware of the public review and that they had an opportunity to participate; provide a forum for information sharing and discussion of the public review process and the moratorium; provide information about the unique views of First Nations about whether or not to lift the federal moratorium (Brooks 2004).

Public involvement was an integral part of the overall SEA process. Two of the three assessment tracks, the public review panel and the First Nations engagement process, were explicitly based on public involvement processes. For the public review panel, meetings were held in the communities most likely to be affected by lifting the moratorium and invited written submissions from across the province. The First Nations engagement process included both individual First Nations and Tribal Councils near the Queen Charlotte Basin, who participated directly or participated either directly or through one or more of the First Nations' umbrella organizations. Public involvement was also part of the science review, for which the scope of consultations was broadened beyond the requirements

set out in the initial terms of reference for the review to include three workshops that were open to all interested parties.

Outputs and Outcomes

The federal review of the B.C. offshore oil and gas moratorium was more comprehensive in scope than both its predecessor and SEAs conducted offshore eastern Canada. A science review, public review, and First Nations engagement process together comprised the SEA. However, missing from the SEA was a consolidated and integrated report that combined the results of each panel report into a single, decision support framework and identification of a 'best' option or strategic action. For example, the Science Panel, after identifying a number of science and information gaps concerning offshore oil and gas exploration and development, concluded that *"provided an adequate regulatory regime is in place, there are no science gaps that need to be filled before lifting the moratoria on oil and gas development."* The public review panel concluded that *"the strongly held and vigorously polarized views it received do not provide a ready basis for any kind of public policy compromise at this time in regard to keeping or lifting the moratorium"*, and proceeded to set out four options for the government of Canada: keeping the moratorium; deferring the decision while undertaking further research activities and taking a decision at a future time; lifting the moratorium and undertaking a suite of activities prior to accepting any oil and gas activity applications; lifting the moratorium. The First Nations engagement process reported unanimous consensus that the moratorium should not be lifted or should not be lifted at the present time.

Recommendations emerging from the SEA were many and varied, ranging from specific mitigation and monitoring measures for offshore oil and gas activity, and the identification of sensitive marine environments to the development of a multi-party advisory body for offshore oil and gas management and decision making. The SEA is tiered toward future actions and developments, both in terms of downstream project EIA and upstream policy and offshore oil and gas program decision making, but the recommendations are non-binding with no authority on behalf of the review panels to ensure implementation. A 2004 media release by Natural Resources Canada made clear that *"the three-part federal process is not a decision-making process, but rather a way to explore the issues and views of British Columbians regarding the federal moratorium"*²⁰.

A report of the School of Resource and Environmental Management (2004), Simon Fraser University, concluded that jurisdiction over offshore development remains unclear, there is inadequate delineation of decision-making criteria concerning offshore oil and gas development activities, and the consideration of a broader range of alternative energy strategies is needed²¹. The moratorium continues, with no formal federal response to the public reviews.

²⁰ Natural Resources Canada media release 2004/64. http://www.nrcan.gc.ca/media/newsreleases/2004/200464_e.htm

²¹ The 'Simon Fraser Study' is available at http://www.rem.sfu.ca/sustainableplanning/CoastalFirstNations_OOGReport.pdf

Evaluation of the Federal Public Review of the Moratorium on Offshore Oil and Gas Exploration and Development, British Columbia *

System components	Evaluation criteria and comments
1. Provisions	<input checked="" type="checkbox"/> clear provisions, standards or requirements to undertake the process - <i>No legal basis; public review in response to provincial request to lift federal moratorium</i>
2. Integration	<input checked="" type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP - <i>SEA developed to review existing policy on moratorium</i>
3. Tiering	<input checked="" type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making - <i>No explicit tiered system of PPP decision making</i>
4. Sustainable development	<input checked="" type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept - <i>No reference to sustainable development as overall principle of SEA</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities - <i>Science review managed by Royal Society of Canada; public review and First Nations engagement responsibility of independent parties</i> <input checked="" type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review - <i>Federal public review, conducted independent of government</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output - <i>No formal opportunity for appeal; no decision reached to date</i>
6. Purpose and objectives	<input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated - <i>Three-pronged: identify science gaps, public views, and First Nations issues</i> <input checked="" type="checkbox"/> centered on a commitment to sustainable development principles - <i>No reference to sustainability principles</i>
7. Scoping	<input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue - <i>No formal stream requirement; terms of reference custom designed</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives - <i>Oceans Act, and other acts and policies concerning offshore activities</i> <input checked="" type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context - <i>Important issues or VECs identified through scoping</i>
8. Alternatives consideration	<input type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios - <i>Limited to lifting current moratorium or not; comparison not consistent across the three review processes</i>

9. Impact evaluation
- identification of potential impacts or outcomes resulting from each option or scenario under consideration
 - *Potential impacts identified for the 'proceed' option (lifting the moratorium); only indirect consideration of impacts for moratorium continuance*
 - integration or review of sustainability criteria specified for the particular case and context
 - *No explicit use or consideration in impact evaluation*
10. Cumulative effects
- consideration of potential cumulative effects and life cycle issues
 - *Mentioned in SEA, but no explicit consideration or assessment*
11. Monitoring program
- procedures to support monitoring and follow-up of process outcomes and decisions for corrective action
 - *Recommendations and indicators for monitoring identified, but no formal process or implementation requirements*
12. Participation and transparency
- opportunity for meaningful participation and deliberations
 - *Direct engagement of affected communities, opportunity for broader provincial input, separate First Nations engagement process*
 - transparency and accountability in assessment process
 - *SEA conducted as a public review process*

Results components

Evaluation criteria and comments

13. Decision making
- identification of a 'best' option or strategic action
 - *Three pronged process, no consensus on 'best' option*
 - authoritative decisions, position of the authority of the guidance provided
 - *Recommendations only, non-binding responsibilities on the SEA recommendations*
14. PPP and project influence
- defined linkage with assessment and review or approval of any anticipated lower-tier initiatives
 - *Limited tiering, with recommendations only which may be adopted for downstream decisions*
 - demonstrated influence in PPP development, modification, or downstream initiative
 - *Unknown; no SEA decision taken*
 - identification of indicators or objectives for related or subsequent strategic initiatives or activities
 - *Important VECs, sensitive areas and indicators identified for downstream assessment and decision making*
15. System-wide learning
- opportunity for learning and system improvement through regular system or framework review
 - *No system or framework review process*

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 6: Ontario Power Authority Integrated Power System Planning

The Ontario Power Authority (OPA) was created as result of the *Electricity Restructuring Act, 2004*. The OPA is Ontario's planning authority for electricity and performs four key functions: power system planning, generation development, conservation and demand management, and electricity sector development.

In May of 2005, the Ontario Minister of Energy directed the OPA to begin the process of developing an Integrated Power System Plan (IPSP) for the province. As a starting point and foundation for the IPSP, the OPA was asked to prepare a document establishing the future electricity supply mix for the Province – the Supply Mix Advice Report²² (OPA 2005). Based on the supply mix information, OPA was directed by the Minister to develop an IPSP that would: define programs and actions which aim to reduce projected peak electricity demand; increase the province's use of renewable energy for electricity generation; plan for nuclear capacity to meet base-load electricity but limit the installed in-service capacity of nuclear power; maintain the ability to use natural gas at peak times and pursue application that allow high efficiency and high value use; plan for the replacement of coal-fired generation with cleaner sources; and strengthen the transmission system to enable the achievement of supply mix goals, facilitate renewable resource use for electricity development, and promote system efficiency and reliability²³. The IPSP will cover the next 20 years through to 2027 and outline the steps needed for a reliable electricity supply.

The scoping document and process overview for the IPSP process was released in June 2006, with the preliminary plan released for public comment and review in November 2006. The final phase of the IPSP, assessment and identification of procurement options, was released in January 2007 and currently under review.

System characteristics

Integrated Power System Planning is a legislated process. The OPA is mandated by the *Electricity Restructuring Act, 2004*, to produce an IPSP, in compliance with the Ontario Minister of Energy's supply mix directive, and to address the current electricity supply–demand imbalance through conservation and generation procurements. The IPSP is to be filed with the Ontario Energy Board (OEB), a Crown corporation and regulator of Ontario's natural gas and electricity industries, for review and approval. The OEB's objective in reviewing the IPSP is to determine whether it complies with supply mix directive and is economically effective. Under Ontario Regulation 276/06, s. 2(2), integrated power system plans developed by the OPA under the *Electricity Act* are exempt from the *Environmental Assessment Act*. As regulatory tribunal process that results in a quasi-judicial decision, the OEB's decision on the IPSP can be appealed to the courts only on matters of law. The IPSP will direct future planning in the electricity sector. Specific projects developed under the IPSP will be subject to the provincial environmental assessment process. It is a regulatory requirement that the OPA update the IPSP and the OEB to review and approve it every three years.

²² The report is available at <http://www.powerauthority.on.ca/Page.asp?PageID=1224&SiteNodeID=127>

²³ Minister's directive to the Ontario Power Authority 13 June 2006.

http://www.powerauthority.on.ca/ipsp/Storage/23/1870_IPSP-June13,2006.pdf

Assessment process

The IPSP is a plan to implement the Minister's directive concerning the future electricity supply mix in Ontario. The OPA is responsible for the development of the IPSP and submission to the regulator, the OEB, for review, public hearings, and decision.

The purpose of the IPSP process is to develop a comprehensive plan for Ontario's electricity system to 2027. The IPSP scope and process are determined by the supply mix directive and the *Electricity Restructuring Act*. The focus of the plan is on identifying short-term conservation, generation, and transmission investments, developing electricity supply and demand management options for the medium term from which choices can be made, and identifying broader scenarios of options and opportunities for longer-term planning and decision making. The specific goals of the IPSP, in relation to the supply mix directive, are to: identify current demand reduction strategies and new generation technologies; increase generating capacity from alternative and renewable energy sources; replace coal-fired generation; and develop new programs and targets for electricity production, planning and delivery.

IPSP process was based on a series of 8 incremental 'discussion papers'²⁴, commencing with a 'Scope and Overview' document detailing the IPSP process and supply mix directive. This followed by a 'Load Forecast' model for the 20-year planning horizon; a 'Conservation Demand' assessment of options to reduce energy consumption and reduction of demand during peak periods through the adoption of energy efficient technologies and promotion of change in consumption patterns; an analysis of 'Supply Resources' available to meet short- and long-term electricity requirements and the environmental implications of supply options; and a 'Transmission' discussion paper focusing on the need and options for strengthening the transmission system to meet the supply mix goals, facilitate the development and use of renewable energy sources, and increase system efficiency.

A 'Sustainability' paper set out the approach to sustainability used in developing the IPSP identified the rationale for alternative to electricity projects proposed in the plan, and established the sustainability criteria used for integration of plan elements. The sustainability criteria were drawn from broad sustainability principles including socio-ecological system integrity, livelihood sufficiency and opportunity, intra-generational equity, intergenerational equity, resource maintenance and efficiency, socio-ecological civility and democratic governance, precaution and adaptation, immediate and long-term integration, and interpreted for the specific IPSP context. 'Integrating the Elements – a Preliminary Plan' presented the preliminary 20-year IPSP, outlining the context and purposes of the plan, and the process for evaluating it. The final discussion document, 'Procurement Options' provided an assessment of competitive procurement, standard offer procurement, and non-competitive procurement in order to identify a preferred procurement option(s).

An alternatives assessment of electricity supply mix was undertaken as part of the Supply Mix Advice Report prior to the IPSP, and formed the foundation of the IPSP process. As such the IPSP itself did not consider the impacts of a range of electricity alternatives or result in identification of a preferred supply mix, but rather focused the implications of a prescribed supply mix. However, the IPSP process did consider a number of more limited alternatives within the context of the preferred supply mix, including a range of scenarios for electricity conservation and demand management, and competing options for plan procurement.

²⁴ See <http://www.powerauthority.on.ca/ipsp/Page.asp?PageID=1224&SiteNodeID=204> for IPSP discussion papers.

Public involvement is a regulatory requirement of the IPSP, including consultation with consumers, electricity distributors and generators. Throughout the IPSP process, each of the 8 discussion documents noted above were released for public review and written comment. In addition, a number of open houses were held, along with consultations with First Nations interests. Once completed, the IPSP will be submitted to the OEB for review and public hearings, providing further opportunity for public comment on the IPSP. The overall influence of public consultation on the IPSP, however, is limited given that the goals, targets, and desired outcomes of the IPSP are determined by the supply mix directive and, furthermore, given the quasi-judicial nature of OEB decision process.

Outputs and outcomes

The IPSP process is the first of its kind under the new regulatory system in Ontario, and the plan is currently in its final stages of development and review. The OEB's decisions on OPA's IPSP and its implementation are authoritative, with the necessary legal mechanisms for enforcement of the assessment results. However the OEB does not have the authority to revisit the policy directives of government which specify the desired electricity supply mix and overall IPSP goals. The longer-term planning horizon of the IPSP remains flexible, and is subject to a mandatory plan and system review every three years. Albeit exempt from formal environmental assessment, the IPSP does provide a direct link to downstream development and decision making. Electricity development projects identified in the plan that require an individual assessment under the provincial *Environmental Assessment Act* must have a specified completion date that would require an application for impact assessment within five years of IPSP approval (OPA 2005).

An SEA neither by name nor by adoption of a formal SEA framework, the OPA IPSP is illustrative of integrated, albeit restrictive, SEA for sector-based plan development; restrictive in the sense that the 'SEA process' was limited to a prescribed electricity mix and to the evaluation of alternatives within the scope of a predetermined policy outcome. The IPSP did evaluate a number of scenarios and alternatives to meet the Government of Ontario's supply mix directive, including options to meet electricity conservation, demand management, and procurement objectives. The IPSP did not result in identification of a preferred alternative but the rationalization of a prescribed electricity mix. In this sense, while the IPSP itself is fairly comprehensive, the 'model' of SEA depicted by the planning process is relatively restrictive in comparison to SEA applications for electricity planning elsewhere.

Marshall and Fischer (2006), for example, report on an application of SEA by ScottishPower, one of three UK privatized electricity companies who hold a statutory license to develop and maintain electrical transmission supply systems. As a private corporation, ScottishPower was under no obligation to develop and implement SEA for electricity transmission planning. Rather, SEA was seen as providing a structured framework that would: contribute to better internal decision making; facilitate efficient and effective consideration of environmental factors into overhead transmission line routing programs; avoid potentially costly environmental damage; improve existing planning procedures; and influence the deliverability of corporate plans and programs. Using an adaptation of Noble and Storey's (2001) seven-phase assessment framework, SEA was applied to the design of regional transmission network planning in Mid-Wales. An ambitious range of alternatives were considered and assessed, some of which were outside of the company's direct control and would not normally be considered in transmission program planning – the intent was to encourage debate on the electricity program's needs and demands. Each alternative was systematically examined against formal environmental and socioeconomic criteria, and in terms of its potential cumulative impact and compliance with existing plans and programs. A preferred alternative or 'best practicable

environmental option' was identified for implementation as a result of the SEA application. Albeit a much smaller scale planning process than that of OPA's IPSP, the case of ScottishPower it demonstrates the added value of SEA, even if informal by nature, as a structured approach to environmental assessment and decision support for electricity system planning.

Evaluation of Ontario Power Authority Integrated Power System Planning

System components	Evaluation criteria and comments
1. Provisions	<input checked="" type="checkbox"/> clear provisions, standards or requirements to undertake the process - <i>IPSP is a regulatory requirement, its scope established under the Electricity Act and OEB Act; no requirements or provisions for SEA per se</i>
2. Integration	<input type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP - <i>SEA as part of plan development, but restrictive in nature; purpose, preferred strategic outcome, and goals prescribed prior to assessment</i>
3. Tiering	<input type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making - <i>Directive sets requirements for IPSP, which recommends specific project developments requiring EIA; EIA separate process and legislation from IPSP</i>
4. Sustainable development	<input type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept - <i>Not explicitly identified as a planning principle; implicit through principles of transparency, conservation, renewable supplies, and short-term versus long-term consideration</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities - <i>OPA responsible for assessment based on government directive; OEB regulatory authority responsible for review</i> <input type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review - <i>Assessment in-house; reviewed by independent regulator and public hearing</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output - <i>OEB process is a regulatory tribunal, quasi-judicial decision</i>
6. Purpose and objectives	<input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated - <i>Develop a plan to implement the electricity supply directive</i> <input type="checkbox"/> centered on a commitment to sustainable development principles - <i>Principles identified, but not central to influencing strategic choices</i>
7. Scoping	<input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue - <i>Single-type process, with a legislative and regulatory foundation</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives - <i>Various electricity sector regulations and downstream electrical development projects and initiatives</i> <input type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context - <i>Scoping document for IPSP based on prior supply mix directive</i>
8. Alternatives consideration	<input type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios - <i>Limited to alternative means to implement the supply mix directive</i>

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| 9. Impact evaluation | <input type="checkbox"/> identification of potential impacts or outcomes resulting from each option or scenario under consideration
- <i>Potential impacts identified for the preferred option</i> |
| | <input checked="" type="checkbox"/> integration or review of sustainability criteria specified for the particular case and context
- <i>Context-specific sustainability criteria identified to facilitate IPSP integration</i> |
| 10. Cumulative effects | <input checked="" type="checkbox"/> consideration of potential cumulative effects and life cycle issues
- <i>No explicit consideration or assessment</i> |
| 11. Monitoring program | <input type="checkbox"/> procedures to support monitoring and follow-up of process outcomes and decisions for corrective action
- <i>Regulatory requirement for 3-year follow-up; no specification of on-going impact monitoring program</i> |
| 12. Participation and transparency | <input type="checkbox"/> opportunity for meaningful participation and deliberations
- <i>Regulatory requirement for consultation; opportunity for public comment on plan documents; limited influence in OEB quasi-judicial decision</i> |
| | <input checked="" type="checkbox"/> transparency and accountability in assessment process
- <i>Planning documents public; review and approval of IPSP by independent regulator</i> |

Results components

Evaluation criteria and comments

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| 13. Decision making | <input checked="" type="checkbox"/> identification of a 'best' option or strategic action
- <i>Pre-determined option based on supply mix directive</i> |
| | <input checked="" type="checkbox"/> authoritative decisions, position of the authority of the guidance provided
- <i>Legislated requirements</i> |
| 14. PPP and project influence | <input checked="" type="checkbox"/> defined linkage with assessment and review or approval of any anticipated lower-tier initiatives
- <i>Tiered toward specific electricity sector development initiatives and approvals</i> |
| | <input type="checkbox"/> demonstrated influence in PPP development, modification, or downstream initiative
- <i>Unknown, IPSP still in progress</i> |
| | <input checked="" type="checkbox"/> identification of indicators or objectives for related or subsequent strategic initiatives or activities
- <i>Specification of demand reduction and generation targets</i> |
| 15. System-wide learning | <input checked="" type="checkbox"/> opportunity for learning and system improvement through regular system or framework review
- <i>3-year review period required by government regulation</i> |

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 7: Pasquia-Porcupine 20-year Forest Management Plan Assessment, Saskatchewan²⁵

In 1995, a decision was made to prepare an integrated land and resource management plan for the Pasquia-Porcupine forest management area. The Pasquia-Porcupine forest management area is located along the Saskatchewan-Manitoba border within the Boreal Plain Ecozone, encompassing approximately 20,000 square kilometers and including the Porcupine Hills, Pasquia Hills, and a portion of the Cumberland Delta area. A forest harvesting and management partnership was formed between MacMillan Bloedel Limited and a subsidiary of the Saskatchewan Crown Investments Corporations, known as the Saskfor-Macmillan Limited Partnership (SMLP), and negotiations commenced with Saskatchewan Environment for a forest management agreement that would allow SMLP to harvest and manage timber in the forest management area.

A forest management agreement is a formal agreement between the provincial Minister responsible for administering the *Forest Resources Management Act* and the harvesting company concerning licensing, permitting, harvesting, and responsibilities for forest management and regeneration. As a prerequisite to the forest management agreement, SMLP was to develop a 20-year forest management plan (FMP) detailing harvesting and forest renewal plans for the proposed harvest areas and means by which other resource users and would be accommodated while maintaining a healthy forest ecosystem. An environmental assessment application for development of the Pasquia-Porcupine forest management area, in the form of an integrated 20-year forest land use plan, was forwarded to the government of Saskatchewan for review and approval. The FMP and environmental impact statement were endorsed in 1998.

System characteristics

There are no formal requirements for SEA in Saskatchewan; however, there is a legislated requirement for the environmental assessment of 20-year FMPs. Under section 9.1 of the Saskatchewan *Environmental Assessment Act*, forest management activities pursuant to a 20-year FMP are deemed to be development under the *Act* and subject to the environmental assessment process. Forest companies wishing to enter into a forest management agreement are required to prepare a 20-year FMP and environmental impact statement. The requirement is similarly included in *The Forest Resources Management Act*. Although 20-year FMPs do not carry the SEA name tag, they are illustrative of an integrated approach to SEA where assessment unfolds simultaneously as part of plan development.

The environmental assessment of 20-year FMPs is set within a tiered framework, of which plan assessment is one component. *The Forest Resources Management Act* requires three tiers of planning. Provincially, the Saskatchewan Forest Accord is prepared at least every 10 years to establish long-term forest management principles, policies, and goals for the province and to set the direction for regional and local forest plans. At the regional level, Integrated Forest Land Use Plans are prepared for each forest management unit to identify the most appropriate mix of sustainable land uses, and forest companies prepare 20-year FMPs assessing how industry operation will affect existing users and forest health. The 20-year FMPs are subject to an environmental assessment. Locally, annual operating plans are prepared for specific sites, to demonstrate compliance with the

²⁵ This case study description is based on Noble, B. 2004. Integrating strategic environmental assessment with industry planning: a case study of the Pasquai-Porcupine forest management plan, Saskatchewan, Canada. *Environmental Management*, 33(3): 401-411.

management plan. Certain site specific activities occurring under the plan, or changes to the management plan itself, may once again trigger the environmental assessment process.

Assessment characteristics

The Pasquia-Porcupine FMP development and integrated assessment was the responsibility of SMLP and a multi-disciplinary planning team, with representatives from various branches of the Saskatchewan government, the Canadian Wildlife Service, and Environment Canada. A Pasquia-Porcupine Forest Management Advisory Committee (FMAC), comprised of various stakeholder and aboriginal groups in the area, also was appointed by government to provide input to the FMP and advice on the forest management agreement negotiations. The Government of Saskatchewan was responsible for decision making, and for ensuring a full and independent review of the assessment process and report.

The FMP was developed based on the principles of integrated resource management with the intent to provide direction for resource use and management in the area. The overall purpose of the plan is to “manage the use of land and the renewable and non-renewable resources of the planning area on an integrated and environmentally sound basis to ensure ecological, economic, social and cultural benefits for present and future generations” (SMLP 1998: i). The plan’s guiding principles were based on sustainability and include maintenance of ecological integrity, supporting environmentally, socially, and economically sustainable land uses, respecting traditional resources uses, promoting the needs and wishes of the people who live adjacent to the planning area, and considering ecological, social, cultural and spiritual values in decision making (SMLP 1998: 5). Included amongst the specific objectives of the plan are to apply integrated resource management principles to resource management activities in the area, develop guidelines that allow for controlled development, identify and maintain ecologically representative or unique landscapes, and important cultural, heritage and recreational sites, and develop standards to review and evaluate existing and future land uses.

Plan development and assessment were integrated processes. A survey of the baseline environmental and socioeconomic conditions of the forest management area was completed as part of the plan development process, along with compilation of a substantial list of assessment criteria indicators, goals, and objectives against which to assess the impacts of various plan alternatives and to evaluate plan environmental and socioeconomic performance. Five strategic plan alternatives were identified, ranging from the baseline condition of no timber harvesting to various harvest and regeneration regimes. Each alternative, and its assumptions, was detailed in the plan and assessment document and systematically evaluated based on a consistent set of assessment criteria developed within the context of industry objectives, regulatory standards and requirements.

The biophysical impacts of each alternative were systematically assessed using forest land inventories and computer based modeling. The socioeconomic impacts were assessed by a panel of experts using an input-output model and simulation model, alongside information collected through public consultation processes. Although the assessment did not directly consider second-order socioeconomic impacts caused by environmental change due to harvesting, tradeoffs between environmental and socioeconomic benefits were made explicit in the selection and analysis of alternatives. Criteria against which the alternatives were assessed were derived based on sustainable forest management standards presented by the Canadian Standards Association, provincial and regional land use policies and frameworks, public consultation with residents in the management area, and literature reviews of past FMPs. Included amongst the criteria were specific

targets for average annual gross domestic product, employment, maintenance of existing land use values and activities, protection of forest lands through the province's representative areas networks, ensuring regeneration, and maintenance of sedimentation, turbidity and water chemistry consistent with natural variability. Indicators for impact assessment were formulated based on the standards developed by the Canadian Council of Forest Ministers, and included such socioeconomic and biophysical indicators as direct and indirect forest values, direct employment, demographic change, soil and erosion potential, long run sustained yields, and ecosites in protected areas. Approximately 30 acts, by-laws, and associated regulations were considered in plan development and assessment

A follow-up and evaluation strategy was also developed as part of the plan and integrated assessment process. The follow-up strategy included the identification of monitoring indicators, targets and objectives, as well as the establishment of process for annual review plan implementation, which includes a public reporting and comment process. Under *The Forest Resources Management Act* the FMP is subject to a formal, independent audit every 5 years. A comprehensive plan review and update was established for ten years after the start of plan implementation, and every ten years thereafter, to re-examine the plan's purpose and success at meeting ecological and social objectives.

In addition to stakeholder representation and involvement through the FMAC, several rounds of public meetings were carried out prior to the planning process, during plan development, and following release of the draft plan. The scope of the communities involved in public consultations was extended beyond the direct impact communities for the purposes of identifying community goals and needs, issues and concerns, and to gather local knowledge. Initial public meetings were held early in the scoping phase of plan development, including meetings with Aboriginal resource users, and continued throughout the plan development. Additional public meetings were held to discuss the draft plan, prior to development of the final plan for submission to government for approval.

Outputs and outcomes

The Pasquia-Porcupine environmental assessment proceeded simultaneously with forest plan development, providing the necessary assessment and planning information at critical decision points. At the conclusion of plan development, a 'best' option was identified and a single plan and environmental assessment document delivered. Early integration of environmental assessment into the planning process ensured that the plan and preferred option were consistent with the various government regulations and specified industry standards. More than 20 potentially adverse, residual impacts were identified in the plan alongside 65 mitigation measures for the preferred option. Public values and concerns had already been considered by the time the plan was completed and forwarded for approval and, as such, unexpected delays in plan approval due to deficiencies in the assessment process were minimized.

The FMP was approved in 1998, subject to a number of recommendations of government, with formal audit requirements under *The Forest Resources Management Act* to ensure implementation of the standards and mitigation measures as identified in the FMP. Several terms and conditions of the plan approval did ensure the development of standards, operating regulations, and management and mitigation procedures. A strength of the FMP process is the opportunity to reassess on a regular basis, and the ability for changes in the approved development, or actions beyond the scope of that approved under the FMP, to trigger further assessment under the *Environmental Assessment Act*.

Evaluation of the Pasquia-Porcupine 20-year forest management plan assessment, Saskatchewan

System components	Evaluation criteria and comments
1. Provisions	<input checked="" type="checkbox"/> clear provisions, standards or requirements to undertake the process - <i>20-year FMP assessment legislated under EA Act and Forest Resource Management Act; no requirements for SEA per se</i>
2. Integration	<input checked="" type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP - <i>Integrated assessment as part of plan development – from conceptualization to implementation and follow-up</i>
3. Tiering	<input type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making - <i>Tiered system of forest management planning; environmental assessment not explicitly tiered</i>
4. Sustainable development	<input type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept - <i>Implicit guiding principle, operationalized through integrated resource management approach</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities - <i>SMLP responsible for plan and assessment document; government responsible for ensuring review, approvals and implementation</i> <input checked="" type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review - <i>Independent review of assessment process and report, including independent audit requirements</i> <input type="checkbox"/> opportunity for appeal of process or decision output - <i>Public review process and opportunity for Minister to commission an inquiry; limited opportunity following Ministerial approval</i>
6. Purpose and objectives	<input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated - <i>Develop an integrated resource management plan</i> <input type="checkbox"/> centered on a commitment to sustainable development principles - <i>Indirect based on principles of ecological integrity, community needs, and integrated resource management</i>
7. Scoping	<input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue - <i>Tailor-made through scoping process</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives - <i>Consideration of multiple by-laws, regulations, and existing land uses</i> <input checked="" type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context - <i>Identified through scoping process and baseline assessment</i>

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| 8. Alternatives consideration | <input checked="" type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios
- <i>Range of alternatives considered based on biophysical and socioeconomic criteria, goals and objectives</i> |
| 9. Impact evaluation | <input checked="" type="checkbox"/> identification of potential impacts or outcomes resulting from each option or scenario under consideration
- <i>Potential impacts identified for the full set of scenarios</i>

<input checked="" type="checkbox"/> integration or review of sustainability criteria specified for the particular case and context
- <i>No explicit review of sustainability criteria</i> |
| 10. Cumulative effects | <input checked="" type="checkbox"/> consideration of potential cumulative effects and life cycle issues
- <i>Recommendation for cumulative effects management, but no direct assessment or consideration in assessment</i> |
| 11. Monitoring program | <input checked="" type="checkbox"/> procedures to support monitoring and follow-up of process outcomes and decisions for corrective action
- <i>Regulatory requirement for follow-up and audit under Forest Resource Management Act</i> |
| 12. Participation and transparency | <input checked="" type="checkbox"/> opportunity for meaningful participation and deliberations
- <i>Early and on-going community consultation prior to plan development; stakeholder representative advisory committee</i>

<input checked="" type="checkbox"/> transparency and accountability in assessment process
- <i>Planning documents public; independent review; legislated requirement for independent audit of implementation and compliance</i> |

Results components

Evaluation criteria and comments

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| 13. Decision making | <input checked="" type="checkbox"/> identification of a 'best' option or strategic action
- <i>Preferred scenario identified</i>

<input checked="" type="checkbox"/> authoritative decisions, position of the authority of the guidance provided
- <i>Legislated requirements</i> |
| 14. PPP and project influence | <input checked="" type="checkbox"/> defined linkage with assessment and review or approval of any anticipated lower-tier initiatives
- <i>Blanket approval of FMP activities; deviations or new developments trigger separate review</i>

<input checked="" type="checkbox"/> demonstrated influence in PPP development, modification, or downstream initiative
- <i>Established standards, practices, and mitigation in forest management</i>

<input checked="" type="checkbox"/> identification of indicators or objectives for related or subsequent strategic initiatives or activities
- <i>Tailor-made process for specific FMP case</i> |
| 15. System-wide learning | <input checked="" type="checkbox"/> opportunity for learning and system improvement through regular system or framework review
- <i>Regular FMP review required by government regulation</i> |

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 8: Capital Regional District's Regional Growth Strategy, British Columbia

The Capital Regional District (CRD) is the regional government for 13 municipalities and three electoral areas on the southern tip of Vancouver Island, British Columbia. The urban centre of the CRD is the City of Victoria²⁶. In 1996, the CRD formally initiated a process to develop a regional growth strategy. A regional growth strategy is an agreement, developed and approved by the member municipalities and the regional district, on social, economic and environmental goals and priority actions. Its purpose is to promote human settlement that is socially, economically, and environmentally healthy and that makes efficient use of public facilities and services, land and other resources (CRD 2003). Following 7 years of planning and development, the Regional Growth Strategy (RGS) for the CRD was adopted as bylaw in 2003. The RGS is currently in its implementation and monitoring phase.

The CRD RGS case is unlike urban and regional planning experiences reported elsewhere in the SEA literature, in that the RGS is an example of a planning approach that depicts many of the elements and practices of SEA but makes no reference to environmental assessment principles or practices. Moreover, the RGS is the product of a series of planning and decision documents generated from a planning process that unfolded over a period of seven years and at no point was subject to formal environmental assessment review. This is in contrast to Sweden's Greater Stockholm Regional Plan 2000, for example, which was subject to SEA under both the Swedish Planning and Building Act and the EC SEA Directive (Hilding-Rydevik and Fundingsland 2005), and to the National Capital Commission Core Area Concept Plan, described in this report, where a SEA of the plan was formally carried out in compliance with the Canadian Cabinet Directive. Similarly, in the UK, local area plans, such as the Sefton Council's Unitary Development Plan in northwest England, were traditionally subject to environmental assessment and, more recently, to sustainability appraisal (Jones et al. 2005). However, when considering the RGS process in its entirety, from initiation in 1996 to completion in 2003, a number of principles and practices can be observed characteristic of SEA.

System characteristics

Development of the RGS neither fell under environmental assessment requirements nor was the final plan subject to a formal environmental assessment process. There was no mandatory requirement to undertake the RGS, but once initiated the RGS content, review, and approval process was guided by the province's *Local Government Act* and implemented as a bylaw. Environmental protection is identified in legislation as one of the goals for regional growth strategies; however sustainability principles are not articulated as overarching principles to guide regional growth strategy development. The extent to which sustainability guides a regional growth strategy is at the discretion of the specific regional district responsible for developing and implementing the plan. Regional growth strategy planning and development does not occur within an explicitly tiered system. As a 'model' of SEA, the RGS is illustrative of an assessment of strategic alternatives for the purposes of selecting a preferred option, for which a plan would be developed.

²⁶ See <http://www.crd.bc.ca/about/index.htm> for an overview of the Capital Regional District membership, authority, and responsibilities.

Assessment characteristics

The RGS was formally initiated in 1996 by the CRD in accordance with the province's *Municipal Act*. The CRD was responsible for major decisions on the process and content of the RGS, and for giving it final approval as a bylaw in 2003. A standing committee of the CRD was responsible for steering the RGS process, with advice from a public advisory committee of regional residents and an intergovernmental advisory committee of CRD staff, member municipalities, and federal provincial government departments and agencies. Member municipal councils and neighboring jurisdictions had sign off authority on the final RGS.

The purpose of the RGS for the Capital Region was to define a common vision, goals, and regional priorities and strategies to manage growth to the year 2026. As set out in the *Municipal Act*, a RGS is to promote settlement that is socially, economically and environmentally healthy and that make sufficient use of public facilities and services, land and other resources. The overall vision of the RGS is to enhance social well-being and regional quality of life.

Development of the RGS occurred over a period of several years. In 1995 a background research phase commenced to establish a common understanding on the purpose, scope, consultation and schedule for the RGS. Between 1997 and 1998 a technical evaluation and public discussion of a growth management scenario, the base case, for the region was initiated and a framework developed that outlines a vision for the region. The base case and vision were constructed based on existing municipal community plans. The framework also outlined the overall scope of the RGS, criteria for evaluation, and a number of general guiding principles for its development including sustainability; appropriateness; continuity; cooperation, collaboration and coordination

Between 1998 and 2000 a base growth strategy and preliminary growth strategy alternatives were developed and circulated to various stakeholder groups for review. In total, four alternatives, including the base strategy, were considered, each depicting different approaches to growth: 'Metropolitan Core and Major Centres', 'Transit-Linked Towns', 'Hierarchy of Walkable Centres'. In developing alternatives, consideration was given to those that aim to achieve the regional visions and support 6 values including personal safety, effective and efficient local and regional development, and a high quality natural and built environment, rural character and agriculture, community stability, and community and regional character and diversity. The alternatives were comparatively evaluated in 1999 by consulting consortium and the *Growth Strategy Alternatives for the Capital Region* published. The report was distributed for public review, and a survey conducted.

Alternatives were evaluated based on 18 criteria categorized according to 5 main elements, namely livable human settlements; vital economy; stewardship of environment and resources; enhanced quality of life; and practical and affordable implementation. In addition, 53 quantitative and qualitative forecast indicators were adopted for projection of the alternative growth scenarios. Geographic information systems, dwelling and employment data, and a transportation model, combined with key informant interviews were used to interpret the differences among the four options. A preferred option was identified at a Regional Summit of Elected Officials. In 2000, formal authorization was given for preparation of the RGS and a by-law passed to adopt a regional growth strategy for the capital region. The RGS plan was developed and approved as bylaw in 2003, along with formal requirements, indicators and targets for implementation and performance monitoring. Annual monitoring reports were released in 2004 and 2005.

Public involvement in the RGS development commenced early in the process, prior to plan development, through municipal organizations, a public advisory committee, and an

intergovernmental advisory committee. First Nations councils were also invited to participate in the RGS process. Documents and reports generated at each stage of the process were circulated for stakeholder review, and a public survey conducted of the RGS plan alternatives. The final RGS bylaw underwent a public hearing and statutory referral to the affected local governments for acceptance as required under the *Local Government Act*.

Outputs and outcomes

The assessment process itself, including the review of competing alternatives, identification of goals, targets and indicators was influential in leading up to the selection of a preferred strategy on which the RGS was developed. Based on the comparison of possible growth alternatives, a preferred alternative, the 'Metropolitan Core and Major Centres' with selected elements of the 'Transit-Linked Towns Option', was identified as the basis for the RGS. A progress report on implementing the Regional Growth Strategy must be published annually following its adoption. In addition, to ensure the Regional Growth Strategy is kept up-to-date, it must be reassessed at least every five years to consider whether amendments are necessary.

That being said, and notwithstanding a number of characteristics of good SEA as reflected by the process, the RGS has had mixed influence. A regional transportation plan, resulting from the RGS priorities, has been adopted and implemented, and the RGS process itself is said to have re-legitimized regional planning in Greater Victoria. At the same time, however, programs, goals, and targets established by the plan are non-mandatory and there are no enforceable measures to ensure compliance and no penalties to address issues of non-compliance. One of the CRD municipal members has not adopted the RGS regional context statement as part of their official community plan. The overall process, in terms of either a planning process or SEA model, was lengthy and cumbersome and proved difficult in sustaining the public's interest in the long term.

Evaluation of the Capital Regional District Regional Growth Strategy, British Columbia

System components	Evaluation criteria and comments
1. Provisions	<ul style="list-style-type: none"> <input type="checkbox"/> clear provisions, standards or requirements to undertake the process <ul style="list-style-type: none"> - Undertaking a <i>RGS</i> is <i>non-mandatory</i>, but once initiated the process and content are guided by legislation; no requirements for SEA per se
2. Integration	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP <ul style="list-style-type: none"> - <i>Purpose, objectives and alternatives conceptualized as part of RGS process, prior to RGS plan development</i>
3. Tiering	<ul style="list-style-type: none"> <input type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making <ul style="list-style-type: none"> - <i>Informal linkage only to downstream regional and community area planning</i>
4. Sustainable development	<ul style="list-style-type: none"> <input type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept <ul style="list-style-type: none"> - <i>Implicitly, based on the 14 goals set out in the Local Government Act which guided RGS development and alternatives evaluation</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<ul style="list-style-type: none"> <input type="checkbox"/> clear delineation of assessment roles and responsibilities <ul style="list-style-type: none"> - Enormous complexity in process, roles and responsibilities across multiple committees, sub-committees, consultants, and standing committees <input checked="" type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review <ul style="list-style-type: none"> - <i>No formal mechanisms beyond requirement for annual monitoring and performance reporting</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output <ul style="list-style-type: none"> - <i>Formal process for dispute resolution</i>
6. Purpose and objectives	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated <ul style="list-style-type: none"> - <i>Develop a strategy for growth management to 2026</i> <input type="checkbox"/> centered on a commitment to sustainable development principles <ul style="list-style-type: none"> - <i>Identified as a RGS principle, but not clearly operationalized in RGS development</i>
7. Scoping	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue <ul style="list-style-type: none"> - <i>Tailor-made process, legislation is an enabling instrument only</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives <ul style="list-style-type: none"> - <i>Consideration of multiple by-laws, plans, and regulations</i> <input checked="" type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context <ul style="list-style-type: none"> - <i>No scoping process, aside from issues identification of priority areas in existing municipal plans</i>
8. Alternatives consideration	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios <ul style="list-style-type: none"> - <i>Range of alternatives considered based on established criteria</i>

9. Impact evaluation
- identification of potential impacts or outcomes resulting from each option or scenario under consideration
 - *Outcomes identified and compared for the full set of scenarios*
 - integration or review of sustainability criteria specified for the particular case and context
 - *No explicit review of sustainability criteria*
10. Cumulative effects
- consideration of potential cumulative effects and life cycle issues
 - *No direct assessment or consideration in assessment*
11. Monitoring program
- procedures to support monitoring and follow-up of process outcomes and decisions for corrective action
 - *Legislated requirement for monitoring and reporting*
12. Participation and transparency
- opportunity for meaningful participation and deliberations
 - *Primarily through stakeholder committees and public survey; lengthy process difficult to sustain participation and interest*
 - transparency and accountability in assessment process
 - *Planning documents public; formal dispute resolution process; legislated requirement for reporting of implementation results*

Results components

Evaluation criteria and comments

13. Decision making
- identification of a 'best' option or strategic action
 - *Preferred scenario identified prior to plan development*
 - authoritative decisions, position of the authority of the guidance provided
 - *Recommendations only*
14. PPP and project influence
- defined linkage with assessment and review or approval of any anticipated lower-tier initiatives
 - *No requirements to consider RGS in subsequent actions and decisions at the municipal level*
 - demonstrated influence in PPP development, modification, or downstream initiative
 - *'SEA' influential in RGS development; post-implementation influence mixed at best*
 - identification of indicators or objectives for related or subsequent strategic initiatives or activities
 - *Targets and thresholds identified for the RGS, not all of which are directly transferable to smaller scale or subsequent initiatives*
15. System-wide learning
- opportunity for learning and system improvement through regular system or framework review
 - *Annual reporting and 5-year required by legislation*

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 9: Atomic Energy of Canada Limited Conceptual Review of Nuclear Fuel Waste Disposal

Canada's nuclear fuel waste (NFW) disposal concept dates back more than 30 years, when in 1974 a committee comprised of the Atomic Energy of Canada Limited (AECL)²⁷, Ontario Hydro, and Hydro Quebec proposed the 'geological disposal concept' that would involve burying Canada's NFW deep within the Canadian Shield. The then Department of Energy, Mines and Resources and AECL determined that further research on the technical aspects of deep geological disposal was needed and that other alternatives would not be considered. In 1978, under the Canada/Ontario Nuclear Fuel Waste Management Program, the governments of Canada and Ontario directed AECL to develop the concept of deep geological disposal of NFW. A subsequent joint statement issued in 1981 established that a disposal site would not be selected until the concept itself was publicly reviewed and approved by both governments.

In 1988, the concept along with related issues concerning NFW was referred for public review under the Federal Environmental Assessment and Review Process (EARP) Guidelines Order. Provisions for concept assessment were consistent with the strategic scope of the Guidelines Order, which defined "proposal" as including "any initiative, undertaking or activity for which the Government of Canada has a decision-making responsibility." In 1989, an independent environmental assessment panel was appointed to develop guidelines for the assessment and to conduct a public review the assessment document upon completion. Atomic Energy of Canada Limited produced its impact statement in 1994, the *Environmental Impact Statement on the Concept for Disposal of Canada's Nuclear Fuel Waste*. In 1998, the Panel made its recommendation to government on the AECL deep geological disposal concept.

System characteristics

Determination of the AECL assessment process commenced as early as 1980 and was subject to debate. The approach was initially conceptualized as an Interdepartmental Review Committee (IRC) comprised of AECB, MOE and Environment, where AECL would evaluate the concept against regulatory guidelines and criteria and, following public hearings, recommendations would be submitted to AECB to determine the acceptability of the concept. This shifted to a joint IRC/Federal Environmental Assessment Review Office (FEARO) process, and then to the consideration of four different assessment streams: a standard EARP, federally based which considered no alternatives in assessment; supplemented EARP, which would be a federal-provincial compromise and provide for the consideration of alternatives; public inquiry, which would be federally-based with provincial input; and EA designation following the provincial process exclusively (Murphy and Kuhn 2001). The standard EARP process was eventually followed as the preferred system of assessment, with some modification to accommodate the Ontario provincial system in that alternatives to disposal and alternative methods of implementing disposal were to be explicitly considered – or at least that was the intent. A Federal Environmental Assessment Review Panel was appointed by the Minister of Environment in 1989, which would later become known as the Seaborn Panel, to provide guidelines for AECL's impact statement and to review it upon completion.

²⁷ AECL is a federal Crown corporation formed in 1952 with the responsibility for managing Canada's nuclear energy research and development program.

Assessment Process

In 1978, AECL was tasked with the responsibility of developing the disposal concept. The task of assessing the merits of the concept fell under the auspices of the Federal Environmental Assessment Review Office. An interesting feature of the review was that AECL, developer of the concept and responsible for producing the impact statement, was not necessarily identified as the implementing organization of the disposal and management of NFW (AECL 1994: 79-80). Terms of reference defining the definition of the review and its mandate were released in 1989. The review process was the responsibility of an independent panel administered initially by FEARO and later by CEEA, although the review was completed under the FEARO guidelines and process. The review Panel's mandate was unusual when compared to typical FEARO reviews in that the panel was asked to review a 'concept' rather than a specific project and location, the implementing agency of the concept was not defined, a broad range of policy issues were to be considered, and the public review was to span five provinces.

Terms of reference were developed by FEARO to define the mandate of the review process. The terms of reference directed the nature of the review and the manner in which the NFW concept was to be addressed. The terms of reference directed the review in four areas: an evaluation of the acceptability of the nuclear fuel waste disposal concept, including the burden on future generations, and a future course of action; comparison of the Canadian disposal concept to the approaches for nuclear fuel waste management adopted by other countries; a focus explicitly on nuclear fuel waste and the disposal concept; to refrain from discussing energy policy, nuclear plant operation and construction, and military applications. The terms of reference were not publicly negotiated; in essence, the scope of the assessment was predetermined.

Following research of the terms of reference, the Panel embarked on a series of scoping meetings to gather public input on the concept and to set the scope of AECL's impact statement. Public meetings were held in 1990 in 14 different communities. Draft guidelines were released for public review, and the final guidelines presented to AECL in 1992. The Panel directed AECL to consider ethical, moral, and social perspectives as equally important to the scientific and technical information. In a review of the terms of reference and guidelines for the AECL concept review and impact statement, Murphy and Kuhn (2001) note considerable debate amongst AECL and government and non-government agencies and an array of publics as to what can and should be considered in an assessment of a NFW disposal facility. Some contended that the panel was hampered by a very specific mandate and terms of reference; others suggest that the terms of reference were clear and that the entire process required further streamlining to restrict hearing submissions to conform to the official mandate of the review.

Notwithstanding the panel's guidelines, the AECL impact statement was primarily technical in nature and focused on the details on the NFW disposal concept itself. As a 'concept' assessment, specific impact predictions and mitigation measures were difficult to specify – particularly since the concept contained neither a location nor implementing organization. Emphasis was placed on a technical description of the proposed deep geological disposal concept and the potential risks, or lack thereof, associated with the concept itself. The need to consider alternatives, identified initially in the terms of reference, proved to be a highly contentious issue. Murphy and Kuhn (2001) report that originally the federal government stated that review would *not* consider alternatives, but focus only on the option of deep geologic disposal. Several arguments for and against alternatives consideration were made; however, in the end concerns raised by AECL resulted in the consideration of alternatives being replaced in the terms of reference with a statement requiring the AECL to examine the concept, along with other approaches for nuclear fuel waste. Atomic Energy of Canada Limited

argued that the consideration of alternatives would open up the review to a scope beyond that which was intended – a review of the proposed concept itself. In the final AECL impact statement, other approaches to deep geological disposal were identified, including ocean dumping and launching waste into outer space, but no competing options were assessed. Until 2002, when the *Federal Nuclear Waste Act* was passed, deep geologic disposal was the only method under consideration.

AECL submitted its EIS in 1994, and a series of public hearings followed throughout 1995. The hearings were coordinated by the review Panel and addressed three major areas of concern: the management of NFW within a broad societal context; a technological review of the assessment concept itself; and local perspectives on public safety and acceptability of the concept. The Panel conducted its review in 16 communities across Saskatchewan, Manitoba, Ontario, Quebec and New Brunswick and received more than 500 written submissions.

Output and Outcomes

The public's response was for a broader consideration of alternatives, broader in scope than that which was considered in the assessment. The terms of reference for the AECL NFW assessment were focused on a technical review of the proposed concept, which occurred to the near exclusion of alternative definitions and perspectives of what constitutes NFW management and social and ethical aspects NFW management might involve (Murphy and Kuhn 2001). The review Panel, however, went beyond the scope of the terms of reference to ensure consideration of broader social issues and concerns regarding NFW management in Canada. Interestingly, the Panel's report to government found AECL's concept to be technically safe but not publicly acceptable due, in part, to the fact that only one plan option, AECL's proposed concept, was considered. Numerous recommendations were made in the Panel's report, including a recommendation for the creation of an independent organization to manage and coordinate all activities dealing with nuclear fuel waste in the long term, and that such an organization is subject to regulatory control and regular public review. In 2001 "An Act respecting the long-term management of nuclear fuel waste" was introduced, which passed in 2002 as the *Nuclear Fuel Waste Act* and resulted in the establishment of the nuclear Waste Management Organization - a private industry organization lead by the major owners and producers of NFW including provincial crown nuclear power utilities and AECL. The WMO has the mandate to review and select a preferred option for long-term NFW management. The WMO was not the independent organization recommended by the Panel, and the new Act and process have been criticized by some for lacking transparency and accountability.

Evaluation of Atomic Energy of Canada Limited Nuclear Fuel Waste Disposal Concept Public Review

System components	Evaluation criteria and comments
1. Provisions	<input type="checkbox"/> clear provisions, standards or requirements to undertake the process - <i>Considerable uncertainty and several assessment systems considered; FEARO review panel process identified</i>
2. Integration	<input checked="" type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP - <i>Terms of reference determined prior to scoping; panel restricted in scope, purpose, and alternatives</i>
3. Tiering	<input checked="" type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making - <i>FEARO review process, no tiered arrangement</i>
4. Sustainable development	<input checked="" type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept - <i>Not likely a central concept to EARP</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities - <i>FEARO responsible for oversight of assessment through review panel; AECL responsible for assessment as per FEARO terms of reference</i> <input checked="" type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review - <i>Independent review panel</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output - <i>Opportunity for public review and comment only through review process</i>
6. Purpose and objectives	<input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated - <i>Set out in terms of reference for both review panel and AECL</i> <input checked="" type="checkbox"/> centered on a commitment to sustainable development principles - <i>No reference to sustainable development</i>
7. Scoping	<input type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue - <i>Scope defined by review panel, but restricted by pre-determined FEARO mandate for review</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives - <i>Largely focused on technical considerations of proposed concept</i> <input checked="" type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context - <i>Formal scoping process</i>
8. Alternatives consideration	<input checked="" type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios - <i>Consideration of proposed option only</i>

9. Impact evaluation
- identification of potential impacts or outcomes resulting from each option or scenario under consideration
 - *Consideration of proposed option, based on a risk characterization and technical feasibility approach*
 - integration or review of sustainability criteria specified for the particular case and context
 - *No explicit review of sustainability criteria*
10. Cumulative effects
- consideration of potential cumulative effects and life cycle issues
 - *NFW life-cycle addressed; no cumulative effects assessment*
11. Monitoring program
- procedures to support monitoring and follow-up of process outcomes and decisions for corrective action
 - *No explicit follow-up program or procedures*
12. Participation and transparency
- opportunity for meaningful participation and deliberations
 - *Public meetings and involvement across several provinces; scope of public involvement extended beyond panel's mandate*
 - transparency and accountability in assessment process
 - *Formal hearing process and independent review panel*

Results components

Evaluation criteria and comments

13. Decision making
- identification of a 'best' option or strategic action
 - *Focused on a single, proposed concept*
 - authoritative decisions, position of the authority of the guidance provided
 - *Review panel recommendations only; no defined 'proponent'*
14. PPP and project influence
- defined linkage with assessment and review or approval of any anticipated lower-tier initiatives
 - *Single concept review, no proponent or downstream project action or location identified*
 - demonstrated influence in PPP development, modification, or downstream initiative
 - *Panel review resulted in rejection of proposed concept based on public concern; new waste management organization established*
 - identification of indicators or objectives for related or subsequent strategic initiatives or activities
 - *Inward focused technical evaluation of concept, albeit lessons learnt for public involvement process and understandings of risk*
15. System-wide learning
- opportunity for learning and system improvement through regular system or framework review
 - *Not applicable FEARO replaced by CEAA before completion of assessment*

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable

Case Study # 10: British Columbia Salmon Aquaculture Review

Salmon aquaculture was first introduced to British Columbia in the early 1970s, and by the late 1980s there were more than 100 farm operations (Salmon Aquaculture Review 1997).²⁸ In response to increasing concern over the potential impacts of salmon aquaculture on the marine environment, and in lack of a regulatory system to manage the industry, a moratorium was placed on new farm development in 1986 and a public inquiry undertaken. The inquiry led to the establishment of an industry advisory committee and a number of recommendations for industry regulation. Notwithstanding improvements in the management and regulation of the industry, public concern over industry impacts continued, in particular concerns over the potential effects of interaction between wild and escaped farm salmon.

In April 1995, the B.C. government placed a moratorium on the issuance of new farm tenures and announced an Action Plan for Provincial Salmon Aquaculture, which identifies the need for a definitive review of environmental issues and of provincial salmon aquaculture policies (Salmon Aquaculture Review 1997). The Ministry of Environment, Lands and Parks and the Ministry of Agriculture, Fisheries and Food asked the Environmental Assessment Office (EAO) to review of the adequacy of the current methods and processes used in regulating and managing salmon aquaculture operations – a salmon aquaculture review. The review represents the first use of the *Environmental Assessment Act at the 'strategic level'*, above the individual project, for policy and regulatory assessment (Davidson 1999). The terms of reference for the review were prepared in 1995 and the final report of the EAO, along with supporting technical reviews and First Nations perspective documents, was submitted to Environment, Lands and Parks and Agriculture, Fisheries and Food in 1997.

System characteristics

The British Columbia EAO was established under the *Environmental Assessment Act* in 1994 to undertake environmental impact assessments of major development projects. There is no system of SEA under British Columbia's environmental assessment system. However, then section 40²⁹, of the *Environmental Assessment Act* authorized the EAO to assess strategic-level initiatives, specifically provincial acts and regulations, in preventing or reducing adverse environmental effects.

Assessment characteristics

Federal, provincial and municipal governments play a role in regulating the salmon aquaculture industry. The provincial government, specifically the Ministry of Agriculture, Fisheries and Food and the Ministry of Environment, Lands and Parks has authority for overall development and management of the industry, including: location, size and development of farm sites, reporting requirements, and standards for design, construction and layout (Salmon Aquaculture Review 1997). The ministries assigned responsibility for the salmon aquaculture review to the EAO. Although the EAO is not independent of government, it is not a member of any ministry. The scope of the review was determined by terms of reference prepared by the ministries in consultation with

²⁸ See http://www.eao.gov.bc.ca/epic/output/documents/p20/1129244641556_bb3f8795e20e4c33af0491dc57de1090.pdf for the summary EA report

²⁹ The *Act* has since been revised, assented to 30 May 2002. Provisions for the review of "any policy, enactment, plan, practice or procedure of the government" now appear under section 49(a) of the *Act*. For details of the *Environmental Assessment Act* see http://www.qp.gov.bc.ca/statreg/stat/E/02043_01.htm.

First Nations, environmental organizations and the industry (see Davidson 1999). A technical advisory team of independent scientists was formed to lead the science component of the review, and a review committee of fisher and industry representatives, First Nations representatives, environmental organizations and local communities established to communicate stakeholder concerns to the technical team.

The overall purpose of the salmon aquaculture review was to examine the adequacy of methods and processes used by Environment, Lands and Parks and Agriculture, Fisheries and Food in regulating and managing salmon aquaculture operations. The goal was to make recommendations on improvements to the regulatory framework surrounding salmon aquaculture. The review terms of reference required examination of the ecological concerns related to each of five key issues at current levels of aquaculture production: impacts of escaped farm salmon on wild stocks; disease in wild and farmed fish; environmental impacts of waste discharged from farms; impacts of farms on coastal mammals and other species, and siting of salmon farms (Salmon Aquaculture Review 1997).

In addition to the issues identified in the terms of reference, the review addressed the regulatory framework for salmon aquaculture in BC within the context of regulatory frameworks of other jurisdictions, and the socioeconomic impacts of existing salmon farms. Cumulative effects were considered in the assessment, particularly in terms of the additive effects of multiple farms in a single region, and the potential for cumulative impacts from nutrients in the water columns. However, consistent with the terms of reference the assessment was limited to current levels of aquaculture production. During the review, government confirmed that an assessment of alternative technologies should be considered; this was not part of the original terms of reference (Salmon Aquaculture Review 1997). Alternative salmon aquaculture technologies, including land-based and closed containment systems, were addressed in the EAO's final report; however there was no systematic evaluation of alternative technologies, rather a recommendation was included in the final report to implement pilot projects for the purpose of testing alternative farming technologies. The EAO was not asked to consider whether salmon aquaculture should continue in BC, but rather how it could be managed more effectively (Davidson 1999). Alternatives were restrictive, limited to the current industry context with no comparative evaluation of competing options. The focus of the review, and resulting recommendations, was on the adverse impacts of aquaculture operations and identifying preventative and potentially mitigating measures. Davidson (1999) characterizes the review as compromising the goal of sustainability in favour of promoting the economy.

Stakeholder involvement commenced with development and review of the terms of reference. During the review, the review committee held eight coastal community workshops providing the public with an opportunity to comment and present written submissions for consideration by the technical advisory team. First Nations representatives were part of the review team, and met also independently with the technical review team and submitted papers on aboriginal perspectives on salmon aquaculture. A number of field trips and public open houses also generated information to support the technical team. There were concerns, however, that the review committee played only a nominal role in the assessment in that, unlike the review committee commissioned for the federal review of the British Columbia offshore oil and gas moratorium (reported above), the salmon aquaculture review committee did not prepare a separate report but played an advisory role only to the technical review team.

Outputs and outcomes

The technical advisory team concluded that salmon aquaculture, as presently practiced and at current production levels, presents a low overall risk to the environment. The conclusion was accompanied by 49 recommendations which were submitted to the EAO and, in turn, revised prior to submission to Agriculture, Fisheries and Food and Environment, Lands and Parks. Davidson (1999) reports on the review, noting that although the recommendations were not changed they were significantly watered down. The review recommendations were advisory in nature, with no authority on behalf of the EAO to ensure their implementation and monitoring. A report of the Ministry of Agriculture, Fisheries and Food indicated that 39 of the 49 recommendations had been implemented in full as of April 2003³⁰. However, an independent follow-up report on the salmon aquaculture review (Connell 2004) argues that only 10 of the 49 recommendations have been implemented in full.³¹

Overall, while the salmon aquaculture review represented a significant step forward for strategic assessment under provincial environmental assessment regulations in British Columbia, Davidson (1999) reports on three main concerns regarding the nature and scope of the review. First the EAO was asked only to determine how the aquaculture policy framework could be improved and not whether salmon aquaculture should continue. Second, the technical advisory team was required only to consider the impacts of aquaculture at current levels of production and not asked to project and evaluate the potential cumulative effects of an expanded industry. Both of the above served to restrict the consideration of a reasonable range of strategic alternatives. Third, the focus was on impact avoidance and mitigation as opposed to assessing the sustainability of salmon aquaculture.

³⁰ Recommendations status report available at http://www.agf.gov.bc.ca/fisheries/cabinet/salmonreview_apr03.pdf

³¹ Report available at http://www.farmedanddangerous.org/?action=d7_article_viewer_get_first_file&Join_ID=83599

Evaluation of the Salmon Aquaculture Review, British Columbia

System components	Evaluation criteria and comments
1. Provisions	<ul style="list-style-type: none"> <input type="checkbox"/> clear provisions, standards or requirements to undertake the process <ul style="list-style-type: none"> - <i>Provisions exist under the EA Act to assess other Acts and regulations, but no established requirements or standards for such</i>
2. Integration	<ul style="list-style-type: none"> <input type="checkbox"/> application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP <ul style="list-style-type: none"> - <i>Purpose and scope pre-determined, but opportunity for EAO to tailor review process</i>
3. Tiering	<ul style="list-style-type: none"> <input type="checkbox"/> assessment is undertaken within a tiered system of environmental assessment, planning and decision making <ul style="list-style-type: none"> - <i>No formal tiering arrangement, but purpose was to inform regulation and policy which in turn direct project permitting</i>
4. Sustainable development	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> sustainability or sustainable development is a guiding principle and integral concept <ul style="list-style-type: none"> - <i>Focused on mitigating adverse impacts</i>
Process components	Evaluation criteria and comments
5. Responsibility and accountability	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> clear delineation of assessment roles and responsibilities <ul style="list-style-type: none"> - <i>EA Office responsible for assessment through a technical advisory committee and review committee; Ministry of Environment, Lands and Parks and Ministry of Agriculture, Fisheries and Food responsible for terms of reference and decision making</i> <input checked="" type="checkbox"/> mechanisms to ensure impartiality/ independence of assessment review <ul style="list-style-type: none"> - <i>Assessment commissioned, scoped, implemented, reviewed, and approved 'in-house'; recommendations of the technical advisory committee screened prior to final report submission</i> <input checked="" type="checkbox"/> opportunity for appeal of process or decision output <ul style="list-style-type: none"> - <i>Opportunity for public review and comment only</i>
6. Purpose and objectives	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> assessment purpose and objectives are clearly stated <ul style="list-style-type: none"> - <i>Set out in terms of reference; assessment of the existing policy framework for the aquaculture industry</i> <input checked="" type="checkbox"/> centered on a commitment to sustainable development principles <ul style="list-style-type: none"> - <i>Focused on mitigation and adverse impact minimization</i>
7. Scoping	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue <ul style="list-style-type: none"> - <i>Context specific, defined in terms of reference</i> <input checked="" type="checkbox"/> consideration of related strategic initiatives <ul style="list-style-type: none"> - <i>Comparative review of aquaculture regulatory systems elsewhere</i> <input type="checkbox"/> identification and narrowing of possible VECs, to focus on those of most importance based on the assessment context <ul style="list-style-type: none"> - <i>Key issues identified in terms of reference; opportunity to scope key impact receptors, but no formal scoping process</i>

8. Alternatives consideration	<input checked="" type="checkbox"/> comparative evaluation of potentially reasonable alternatives or scenarios - <i>Alternative salmon farm technologies identified, but no comparative evaluation</i>
9. Impact evaluation	<input type="checkbox"/> identification of potential impacts or outcomes resulting from each option or scenario under consideration - <i>Impacts identified for current baseline only</i> <input checked="" type="checkbox"/> integration or review of sustainability criteria specified for the particular case and context - <i>No explicit review of sustainability criteria</i>
10. Cumulative effects	<input type="checkbox"/> consideration of potential cumulative effects and life cycle issues - <i>Narrowly defined within the context of the current industry conditions</i>
11. Monitoring program	<input type="checkbox"/> procedures to support monitoring and follow-up of process outcomes and decisions for corrective action - <i>Monitoring recommendations and programs identified, but occur through informal mechanisms established by EAO</i>
12. Participation and transparency	<input checked="" type="checkbox"/> opportunity for meaningful participation and deliberations - <i>Review committee established for the purposes of community consultation; separate First Nations reporting process</i> <input checked="" type="checkbox"/> transparency and accountability in assessment process - <i>Planning documents public, including reports of the technical and review committees and the EAO final report</i>

Results components

Evaluation criteria and comments

13. Decision making	<input checked="" type="checkbox"/> identification of a 'best' option or strategic action - <i>Not within the scope of the review</i> <input checked="" type="checkbox"/> authoritative decisions, position of the authority of the guidance provided - <i>Recommendations only</i>
14. PPP and project influence	<input type="checkbox"/> defined linkage with assessment and review or approval of any anticipated lower-tier initiatives - <i>'One-off' policy review; linkage by way of downstream influence of implemented review recommendations</i> <input type="checkbox"/> demonstrated influence in PPP development, modification, or downstream initiative - <i>Limited influence on existing policy; a number of recommended downstream initiatives implemented, but mixed reports on success</i> <input type="checkbox"/> identification of indicators or objectives for related or subsequent strategic initiatives or activities - <i>Scientific analysis was restrictive and within context of industry capacity at the time, not the anticipated future growth</i>
15. System-wide learning	<input type="checkbox"/> opportunity for learning and system improvement through regular system or framework review - <i>Informal mechanisms in place, no regulatory or legislated requirement</i>

* = criterion met; = criterion partially met; = criterion not met; = not able to determine or not applicable