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STRATEGIC ENVIRONMENTAL ASSESSMENT

AT ENVIRONMENT CANADA

How to Conduct Environmental Assessments of Policy, Plan and Program Proposals

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ABOUT THIS MANUAL

PURPOSE OF THIS MANUAL

This manual focuses on the second component of the federal Environmental Assessment (EA) process, strategic environmental assessments. The Stragic Environmental Assessment (SEA) process is intended to improve decision-making by identifying:

1. the positive and negative environmental effects of a policy, plan or program, and
2. the means to accentuate the positive effects, and reduce or avoid the negative ones.

THIS MANUAL EXPLAINS:

- *what* must be done,
- *why* these environmental assessments are required,
- *who* should be involved,
- *when* the assessment should be done,
- *how* it should be carried out, and
- *where* to get assistance.

The process described here can help you do your job better while it helps the department fulfill its mandate and communicate our priority messages. The benefits include:

- reducing environmental costs while protecting human health and well being,
- addressing the cumulative environmental effects of numerous individual proposals, and
- improving efficiency (and probably saving money) by reducing the need for remedial action later.

ENVIRONMENTAL ASSESSMENT IS A USEFUL PROCEDURAL TOOL THAT APPLIES TO ALL LEVELS OF DECISION-MAKING

EA is a process to ensure that the environmental consequences of our actions are known before irrevocable decisions are made. EA is better known and conducted at the project level, but it applies equally well to other levels of decision-making.

IN CANADA, THE FEDERAL EA PROCESS IS TWO-PRONGED:

1. A legislated process (the *Canadian Environmental Assessment Act*) applies to EAs at the project level (currently undergoing a required Five-Year Review).
2. A Cabinet Directive applies to EAs at strategic levels of decision-making, such as policy, plan, and program proposals.

Note: Throughout the document, Strategic Environmental Assessment will be referred to as SEA.

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PART 1

WHAT MUST BE DONE?

Meeting the requirements for Environmental Assessments of Policy, Plan and Program Proposals

SEA is a systematic, comprehensive process of evaluating the environmental effects of a policy, plan or program and its alternatives. The process is intended to improve decision-making by providing managers, Ministers and Cabinet members the following information:

1. **the positive and negative environmental effects of a policy, plan or program, and**

2. **the means to accentuate the positive effects, and reduce or avoid the negative ones.**

In 1990, Cabinet directed departments to consider environmental concerns at the strategic level of decision-making. This Cabinet Directive was revised in 1999 to strengthen the role of SEA by clarifying obligations of departments and agencies and linking environmental assessment to the implementation of sustainable development strategies. The Canadian Environmental Assessment Agency has recently published guidelines on implementing the Directive. The guidelines are based on the following principles:

The Directive's requirements are summarized on page 4

- **Early integration:** Consideration of environmental effects should begin early in the conceptual or planning stages of the proposal.
- **Examine alternatives:** Evaluate and compare different options for the policy, plan or program.
- **Flexibility:** Departments are encouraged to adapt and refine analytical methodologies and decision-making tools appropriate to their circumstances.
- **Self-assessment:** Departments determine how their SEAs should be conducted, they carry them out and report on their own results.
- **Appropriate level of analysis:** The scope of the analysis of potential environmental effects should be commensurate with the level of anticipated effects.
- **Accountability**
- **Use of existing mechanisms**

Appendix 2 provides specific guidance for Environment Canada staff on when and how to apply the SEA process within the department.

SEA COMPLEMENTS PROJECT EA

SEA is also intended to precede and complement environmental assessment of individual projects under the *Canadian Environmental Assessment Act* (CEAA). During recent years it has become increasingly obvious that many of the principles of environmental assessment that have been applied to projects can also apply to policy, plan and program proposals. Consideration of environmental factors at this higher level of decision-making can result in more environmentally sustainable policy-making as well as leading to projects with improved environmental characteristics.

SEA should not take place in isolation.
SEA must be part of the total analysis, including socio-economic, political, and technical considerations to validate the proposed policy. SEA serves to bring together, towards mutually satisfactory goals, a diverse expertise within and outside of the originating Branch, Service or Department. The overriding objective is to improve policy and program decision making.

There are also unique aspects of these assessments at the earlier stages of planning and development that should be differentiated from project environmental assessments. While project EAs commonly involve detailed analysis of site-specific effects, SEA is more concerned with broader environmental issues. This broad scope and higher level of decision-making allows SEA to address long term planning and regional environmental concerns. Thus, SEA can help resolve conflicts that cannot be addressed project by project. Similarly, SEA may be able to address the cumulative effects of numerous projects.

In practice, **EA should commence at the policy level and continue with increasing detail to influence subsequent decision points**. EA thus becomes a key tool at all stages of the decision-making chain.

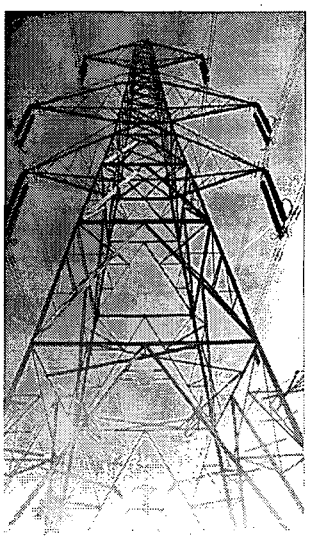
THE PROCESS IS FLEXIBLE

As early as possible in the development of a proposal, the analyst should conduct a study to identify the likely outcomes of the proposal, and to determine whether they may affect any component of the environment. When it is determined that the proposal may indeed lead to environmental effects, either adverse or beneficial, or where the effects are unknown, further analysis of the environmental effects will be required.

Any process to define and analyze the potential environmental effects of a policy, plan or program must be flexible. This is because policies are highly variable in their potential impacts, which may range from highly speculative to readily quantifiable. Depending on the type of policy, plan or program, and the potential for environmental effects, the SEA may be brief and non-technical, or extensive and use sophisticated analytical tools. The only essential requirement is that it support an informed, environmentally sound decision. Thus this manual does not dictate a specific methodology for SEA. Instead, it sets out the basic requirements of the SEA process and suggests some approaches and techniques for organizing and documenting the analysis.

In all cases however, **the SEA process has 6 key steps**:

1. Determine the study approach.
2. Identify the possible options for the policy, plan or program.
3. Identify the likely environmental effects of each viable option.
4. Determine what can be done to mitigate the negative effects and enhance the positive effects.
5. Identify the potential environmental effects which remain after mitigation.
6. Document the results of the analysis.



PART 2

WHY CONDUCT SEAs?

Good reasons to conduct Strategic Environmental Assessments

Environment Canada is unique among federal departments because **all** of its activities aim at protecting and enhancing Canada's environment. **SEA provides a good, common sense way to enhance environmental benefits, while minimizing environmental costs.**

While experience with project assessment has contributed to the transparency of the EA process, it has also created a demand for a similar process related to policies and programs. In fact, many jurisdictions and decision-makers in Canada feel that the overall benefits of environmental assessment are far more significant at the policy stage than at the more specific project stage.

WHY DO WE NEED SEAs FOR ENVIRONMENTALLY-FRIENDLY POLICIES?

Even environmentally-friendly policies and programs could have unforeseen environmental impacts. The SEA process provides a means to identify and minimize such impacts; the SEA can also help maximize environmental benefits.

Furthermore, the SEA can highlight a policy's positive aspects. For example, an EA of the Canadian Biodiversity Strategy concludes: "...the Strategy is anticipated to result in no unmitigable adverse environmental effects. In fact, it is expected that, overall, the potential environmental effects will be overwhelmingly positive. It is important that the decision forum be apprised of the universal environmental benefits of this proposal...".

Environment Canada, 1995

SEAs CAN HELP TO MAXIMIZE ENVIRONMENTAL BENEFITS!

It is often difficult to predict how a policy, plan or program may ultimately affect the environment, but making the link is critical. Since policy formulation occurs early in the departmental planning process, **SEA offers the earliest and often the best opportunity to alter potentially damaging practices.** And because EA considers positive as well as negative environmental effects, it can reinforce the argument for a particular policy option, by clearly demonstrating it's benefits.

MEETING OBLIGATIONS

What are our key obligations to comply with federal policy? There are five areas to consider:

- the Federal Government's commitment to sustainable development,
- the Cabinet Directive on SEA,
- regulatory impact assessment obligations,
- Environment Canada's own commitments to develop environmentally sound policy, plan and program proposals, and
- certain international commitments.

SEA SUPPORTS SUSTAINABLE DEVELOPMENT.

"...the ability to choose policy paths that are sustainable requires that the ecological dimensions of policy be considered at the same time as the economic, trade, energy, agricultural, industrial, and other dimensions on the same agendas and in the same national and international institutions. This is the chief institutional challenge in the 1990s."

...World Commission on Environment and Development, 1987

THE COMMITMENT TO SUSTAINABLE DEVELOPMENT

The Federal Government has a well established commitment to incorporate sustainable development principles in its policy, plan and program proposals. This commitment has been reinforced by amendments to the *Auditor General Act* requiring that each federal department prepare a sustainable development strategy. Under the act, the Commissioner for Environment and Sustainable Development will hold departments accountable for "greening" their policy, plans and programs and will review progress in implementing the strategies.

SEA is an important tool to help Environment Canada meet these new legal requirements. It provides a step-by-step approach to the weighing and integration of environmental and economic factors such that resources are preserved for the use of present and future generations.

THE CABINET DIRECTIVE ON SEA

The Cabinet Directive states that SEAs are required when a proposal is submitted to an individual Minister or Cabinet for approval and implementation of the proposal may result in important environmental effects, either positive or negative. The Directive also states that SEA may be called for if it will help meet sustainable development goals or there are strong public concerns about environmental consequences.

REGULATORY IMPACT ANALYSIS OBLIGATIONS

SEA also fits into the regulatory impact assessment requirements for proposed federal regulations. Under the government's regulatory policy, federal departments and agencies must include environmental implications and risks in the benefit-cost analysis conducted on a proposed regulation. When regulations address health, social, economic or environmental risks, the analysis must demonstrate that the regulatory effort is being expended where it will do the most good.

ENVIRONMENT CANADA'S COMMITMENTS

Through its business line, Environment Canada seeks to reconcile environmental and economic interests, remove barriers to environmentally-responsible action, and foster the capacity of all sectors of society to act on their environmental values and responsibilities. The department's sustainable development strategy also strongly supports SEA in its vision of sustainable development as "a process that integrates environmental, economic and social considerations into decision-making."

INTERNATIONAL COMMITMENTS

SEA is a key component of our obligations under the UN Convention on Biological Diversity. Article 14(b) of the convention calls for signatories to "introduce appropriate arrangements to ensure that the environmental consequences of policies, plans and programs likely to have adverse effects on biodiversity are duly taken into account."

Additionally, the convention on Environmental Impact Assessment in a Transboundary Context sets out protocols whereby neighbouring jurisdictions can contribute to assessments of initiatives of their neighbours where there may be transboundary effects. Canada contributed to the United Nations Economic Commissions for Europe (UN ECE) discussions and is a signatory to the convention.

ACHIEVING ADDED BENEFITS

SEA is not just another obligation; **it can help you do your job more effectively** while it helps the department fulfill its mandate. SEAs:

- reduce environmental costs while protecting human health and well being;
- address the cumulative environmental effects of numerous individual proposals;
- help streamline the process under CEAA by eliminating the need to address some issues at the project stage;
- improve efficiency (and save money) by reducing the need for remedial action at the project level;
- save time and money by drawing attention to potential liabilities for environmental cleanup and other unforeseen concerns;
- avoid delays with senior management who may demand environmental analysis prior to policy approval;
- speed up approval of the proposal by identifying positive environmental considerations;
- promote the department's credibility; and
- provide an example for other departments - EC's mandate is one of championing environmental issues and EA.

SEA CAN STREAM-LINE THE PROJECT EA PROCESS.

A SEA of the North American Waterfowl Management Plan (NAWMP) (Lavalin Environnement, 1991) illustrates how higher-level analysis for policies and programs can provide the rational and context for lower level assessments. SEA was also able to limit the scope of EAs for individual projects resulting from NAWMP. The conclusions and findings of the SEA were designed to feed into the lower level assessments, thereby avoiding the need to assess alternatives or broad goals and objectives at the project level.

In some cases, the strategic environmental analysis may have already been completed. Here, SEA requirements are not a new administrative burden, but simply a requirement to document such analysis. However, the analysis must be done systematically for three reasons:

- There may be surprises; a policy, plan or program focusing on one aspect of the environment may affect other areas, perhaps with unintended consequences.
- There is a need to demonstrate that this systematic process was adhered to.
- There may be environmental benefits that could be enhanced.

SEA can save you money

SEA of land use planning in the Monadnock Region of New Hampshire identified environmentally sound alternatives to traditional land use planning policies. The study demonstrated how a growing forest industry and urban growth could be accommodated while protecting the region's environment. Development as originally proposed would have had "severe implications for environmental quality, recreation values, and perceived visual quality, the very characteristics that make the area so attractive". The SEA developed an alternative approach, involving modified planning and design guidelines. This resulted in significant cost savings, while accommodating the same program for development and forestry activity.

D.M. Johnston, Department of Landscape Architecture, Harvard University

PART 3

ROLES AND RESPONSIBILITIES

All Ministers are responsible for assessing environmentally relevant policy, plan and program initiatives for their effect on the environment. In the context of their sustainable development goals, objectives and policies, individual Ministers are accountable for ensuring that assessments of relevant policy, plan and program proposals are conducted, and that they take into account how initiatives might contribute to environmental and sustainable development goals.

The Minister of the Environment has a lead role in establishing the environmental framework for Canada and promoting the application of environmental assessment to policy, plan and program proposals. The Minister is also responsible for advising other Ministers on the potential environmental effects of policy initiatives before Cabinet decisions are taken and for advising on environmentally appropriate courses of action. This does not constitute either a veto or an approval role.

Departmental and Agency officials initiating a policy, plan or program proposal to be submitted for consideration by Ministers must ensure that, when appropriate, an assessment of the environmental effects is completed. The objective is to ensure that senior managers or Ministers who approve policy initiatives are properly briefed.

Environment Canada will support the Minister by consulting other departments and agencies and provide expert policy, technical and scientific analysis and advice on sustainable development and the potential environmental effects of policy, plan and program initiatives.

The Canadian Environmental Assessment Agency will promote the application of environmental assessment to policy, plan and program proposals of the federal government.

The Commissioner for the Environment and Sustainable Development is tasked with overseeing the government's efforts to protect the environment and promote sustainable development.

The public may also be involved. Stakeholder concerns are a key consideration for any environmental assessment, and the 1999 Cabinet Directive encourages public notification and consultation for an SEA.

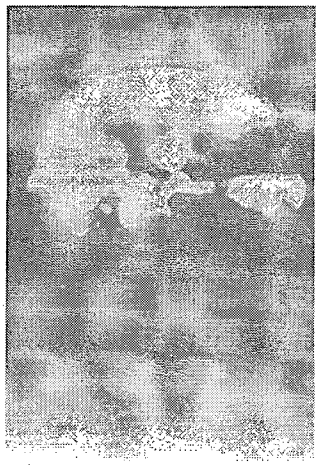
See Appendix 2 for guidance in determining whether to conduct SEA and how to determine the appropriate level of detail.

Making preliminary information available often facilitates public understanding of the ramifications of the proposed initiative and leads to more constructive input. Although confidentiality of some aspects of policy development may preclude full public consultation, any effort to understand stakeholder concerns will improve the quality and credibility of the SEA and the policy itself. It is important to do what is possible within the existing limitations. All consultations should be documented, to show that interested parties' concerns have been considered. Methods for involving the public are varied and can be tailored to the circumstances (see box below).

STAKEHOLDER CONSULTATION TECHNIQUES

Those conducting SEAs should determine at the outset, the most effective means of incorporating public concerns in the analysis. Formal public meetings or round tables may not be practical for a SEA. However, there are other methods to obtain stakeholder's views, including:

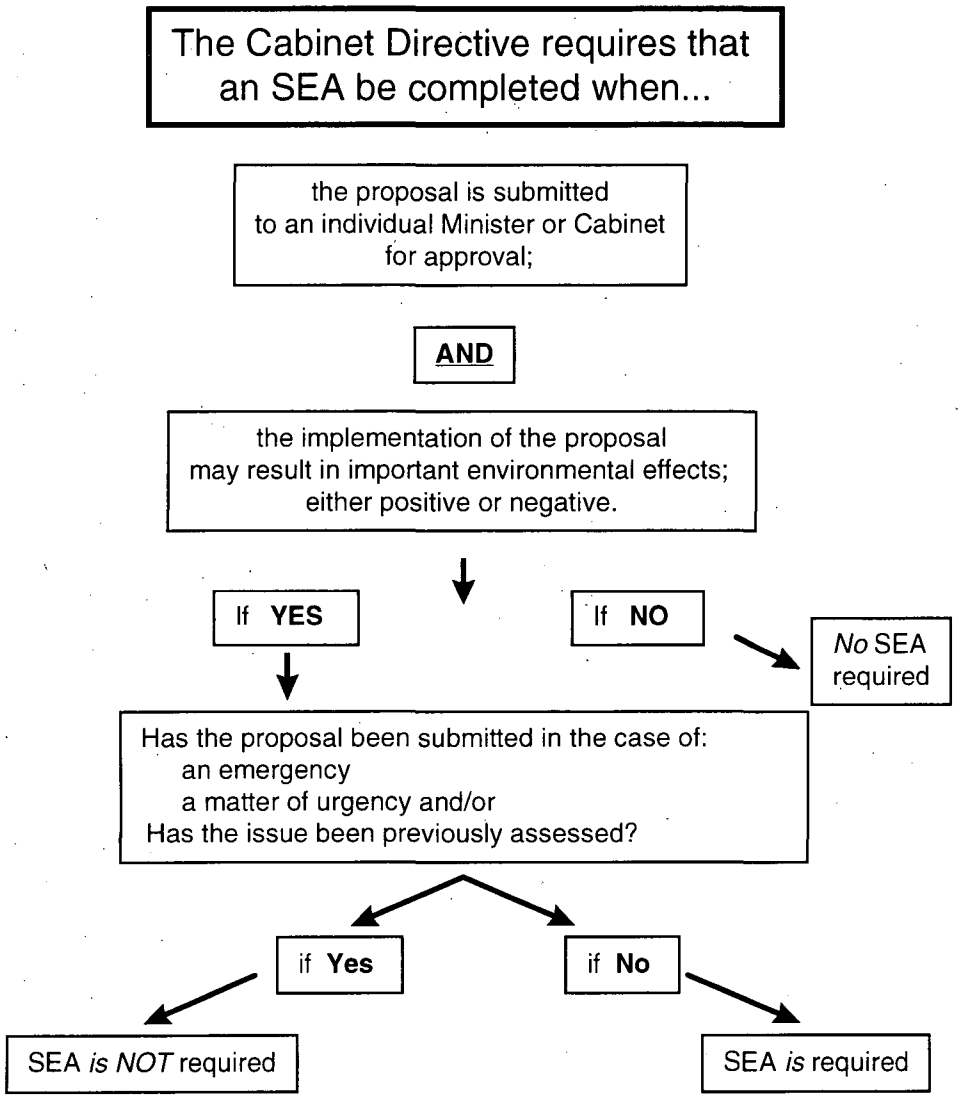
- public consultation or parliamentary committee meetings review ing the policy or program as a whole (This approach is more common than holding special consultations on the SEA itself; the key is to ensure that environmental issues are addressed in the broader consultation program.),
- existing stakeholder committees, advisory groups and consultative networks,
- interdepartmental review and consultation with expert departments,
- consultation with outside experts, academics, provincial governments or advocacy groups,
- providing a separate SEA document for public review (as is commonly done for project EAs).

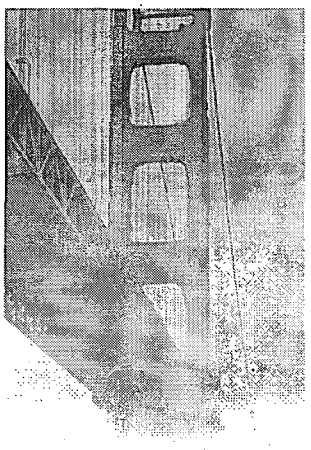


PART 4

HOW TO DETERMINE IF AN SEA SHOULD BE CARRIED OUT

SEA should begin at the outset of the policy development process and continue until final decisions are made. The objective is to "think environmentally" from the earliest stages, to ensure that environmental costs and benefits are considered at every step.





PART 5

HOW IS SEA DONE?

SEA is best done using an iterative approach based on six steps when considering policy options. In concert with the development of the proposal, each step narrows the policy options to identify the most feasible, environmentally sound course of action. This ensures thorough consideration of the pros and cons of each option. **Note:** The analysis of options is a normal part of the policy development process at Environment Canada.

6 Steps to completing an SEA

Step 1: Determine the study approach

→ If the study does *not* identify the potential for important environmental considerations, no further analysis is required.

Step 2: Identify possible options for the policy, plan or program

Step 3: Identify the likely environmental effects of each viable option

Step 4: Determine what can be done to mitigate negative effects and enhance positive effects

Step 5: Identify the potential environmental effects which remain after mitigation

Step 6: Document the results of the analysis

- **Abandon or modify proposal**
- **Proceed with policy**

SEE PAGE 13 FOR MORE DETAILED INFORMATION ON STEPS!!!

Thus SEA is not intended as a separate process, but more as a set of principles or considerations to incorporate in policy, plan or program development.

***Appendix 3** describes the kinds of policy, plan and program proposals that may have environmental implications.*

SEAs can be time consuming, and the schedule must allow for adequate environmental analysis. The time spent, however, is a good investment. Preferred options are not always apparent at the beginning of the process, nor are the effects always clear. **The key is to tailor the environmental assessment to the particular policy, plan or program proposal:** the timing and detail required will depend on its nature and scale. This is the same as in project assessments where the level of effort is commensurate with the nature and scale of the individual project.

REMEMBER!!!

It is important to recognize that during the assessment process, completing certain steps may require one to return to previous steps for reconsideration. This further emphasizes the importance of an iterative and flexible approach.

THE SEA TEAM

SEA works best as a team effort. Three or four people with a broad range of expertise (e.g. in the areas of policy, operations, science) provide a good forum for discussion.

Team members should be informed at the outset of the extent of the work that will be required of them. They will need to do some research and analysis, and their schedules must allow sufficient time for SEA tasks.

Other participants, such as outside reviewers and advisors, will also need time to consider policy options and respond to various proposals.

THE SIX STEPS

The practice of SEA is evolving. The applicable methods and techniques will continue to be developed and refined over time. The approach developed for Environment Canada involves an impact assessment form that is used to identify and record potential effects of the policy proposal.

DETERMINE THE STUDY APPROACH

STEP 1

Because there is no fixed procedure or format for SEA, determining the study approach is a key stage in the analysis. Thus Step 1 determines the focus, level of effort, and required tasks for the ensuing analysis. To carry out this Step, you should address the following questions:

1) **What are the key environmental issues associated with the proposal?**
   - Some options may address certain issues and others may not. Thus a preliminary task is to list the potential issues and note how they relate to each option.

2) **What are the likely stakeholder concerns about the identified issues?**

3) **What are the implications of the issues and concerns for the detailed analysis of each option's environmental effects?**
   - What technical studies may be required?
   - Who should be involved? (In addition to the study team, other departments or stakeholders may be invited to participate in, or comment on, the policy, plan or program proposal and the SEA.)
   - How could the public be involved in subsequent stages of the SEA? (Consider the appropriate timing and techniques for consultation.)

4) **What are the specific SEA process requirements?**
   - CEAA may apply to certain types of projects related to a policy, plan or program proposal. It is best to have an early understanding of the legal requirements.
   - Decide on the appropriate method for documenting the assessment. An SEA report may not be required; it may be more appropriate to incorporate the environmental analysis in a more general policy proposal.

5) **What is the relation to other SEAs and project EAs?**
   - Previous studies may provide useful sources of information, and some SEA requirements may already have been met. Your proposal may also need to link to other ongoing assessment processes.

TASKS FOR STEP 1:

1. *What are the key environmental issues?*
2. *What are the likely stakeholder concerns?*
3. *What are the implications of the issues and concerns?*
4. *What are the specific SEA process requirements?*

Our example of a policy for recycling illustrates this Step (see box below).

A HYPOTHETICAL EXAMPLE...

APPLYING STEP 1:
DETERMINING THE STUDY APPROACH FOR SEA OF A POLICY TO PROMOTE RECYCLING IN THE PAPER INDUSTRY

1. **What are the key environmental issues associated with the proposal?** Wood fiber supply; 'eco-efficiency' of resource use; need for recycling; maintaining biodiversity, watershed protection.

2. **What are the likely stakeholder concerns about the identified issues?** Support for concept of recycling; industry concerns about costs and competitiveness; public concern about forest management and biodiversity, green procurement initiatives in public and private sectors.

3. **What are the implications of the issues and concerns for the detailed analysis of each options environmental effects?** Technical analysis may be required to address industrial process aspects and compare costs among options.

4. **What are the specific SEA process requirements?** SEA worksheets should be completed (see Appendix 4); a separate SEA report may not be required.

5. **What is the relation to other SEAs and project EAs?** Depending on the nature of federal involvement, CEAA may apply to projects that would result from certain policy options.
   Research: EC undertakes new research to improve recycling technology
   Marketing: assist the industry in marketing recycled products

IDENTIFY POSSIBLE OPTIONS FOR THE POLICY, PLAN OR PROGRAM

STEP 2

This Step is a normal part of the process of developing a policy, plan or program. A key objective is to introduce SEA at this early stage.

Identify and describe each option that will be presented to decision-makers. This should include the status quo or "no-go" option. **The status quo provides a benchmark for the SEA:** the team can evaluate the options by comparing environmental costs and benefits of each option to the status quo and to alternate courses of action.

To identify the "short list" of options to be subjected to SEA, it is first necessary to identify **all possible options** for a preliminary examination. The list of options will be reduced through discussion, as it becomes evident that some options are 'subsets of others, some may be collapsed together and others, simply not feasible. However, all options considered should be documented. This will show that the analysis has been thorough, and environmental concerns were addressed at each stage.

Once the options have been established, any relevant policies and regulations should be identified. This analysis will put the options in their proper context.

An example of a possible Environment Canada policy will help illustrate Step 2 in action. The example used here is a policy to promote increased recycling in the Canadian paper industry (see box below).

TASKS FOR STEP 2:

1. *Develop a short list of options for the SEA.*
2. *Identify the issues as they relate to the options.*

APPLYING STEP 2:
IDENTIFY POSSIBLE OPTIONS FOR A POLICY TO PROMOTE RECYCLING IN THE PAPER INDUSTRY

Identify all possible options. These options might include:

1. Status quo: no policy to encourage recycling; industry proceeds without EC involvement
2. Incentives: EC and/or the federal government provide grants or tax relief; or require use of eco-logo certified paper for government procurement
3. Legal measures: pass laws or regulations requiring recycling
4. Recognition: publicize efforts of good corporate citizens
5. Information: distribute information about recycling techniques for industry
6. Research: EC undertakes new research to improve recycling technology
7. Marketing: assist the industry in marketing recycled products

A HYPOTHETICAL EXAMPLE...

Note: *Certain policy options could be eliminated for various reasons. For example, direct financial support may not be economically feasible; new legislation may not be politically or socially desirable; and marketing may be the industry's responsibility.*

STEP 3

IDENTIFY THE LIKELY ENVIRONMENTAL EFFECTS OF EACH VIABLE OPTION

Potential positive and negative environmental effects need to be considered, including both direct and indirect or obvious and subtle effects.

The analysis should include a comprehensive look at the policy's implications for the bio-physical environment and related effects on the human environment. This evaluation can take on a variety of approaches, and use various analytical tools, including checklists, matrices, and impact prediction models. The more detailed the analysis required, the more elaborate and sophisticated the applicable tools.

__Appendix 4__ contains some simple impact prediction worksheets for this analysis.

TASKS FOR STEP 3:

1. *Identify those outcomes (products, activities or events) that have environmental implications.*
2. *Identify the potentially affected environmental features. The analysis should consider potential effects on the aquatic, terrestrial, atmospheric and human components of the environment.*
3. *Predict the environmental effects.*
4. *Classify each effect as positive or negative.*
5. *Estimate the likelihood and magnitude of each identified effect.*

EXAMPLES OF ENVIRONMENTAL EFFECTS FROM A POLICY, PLAN OR PROGRAM

Aquatic environment: water conservation regulations can result in changes in water resource uses which may ultimately result in the reduced release and transport of pollutants, siltation, turbidity, water flows, quality and quantity of ground water, or the extent or condition of wetlands.

Terrestrial environment: soil conservation regulations such as the required use of erosion blankets on vulnerable soils may reduce erosion and landslide potential resulting in reductions in soil loss and ultimately the preservation of soil fertility.

Flora and fauna: regulations such as the selective harvesting of forests can result in the preservation of a healthy stand which can ultimately lead to the conservation of various plant and animal species by protecting their habitat.

Biodiversity: regulations which restrict the harvesting of species at risk can result in the reestablishment of vulnerable populations which can ultimately result in a more balanced ecosystem.

Land and resource use: regulations such as those restricting the location of mining operations can lead to the reduction of impacts on surrounding ecosystems and ultimately the conservation of other natural resources.

APPLYING STEP 3:
IDENTIFYING THE ENVIRONMENTAL EFFECTS OF A POLICY TO PROMOTE RECYCLING IN THE PAPER INDUSTRY

a) Identify outcomes (products, activities or events) that have environmental implications: The proposed policy could yield various new paper products. It might also lead to construction activity to build or modify paper industry facilities. The policy could also result in events such as changes in the market for paper products.

b) Identify potentially affected environmental features: The policy could affect the aquatic environment due to the release of effluents from manufacturing paper products. The terrestrial environment could be affected by construction of paper manufacturing plants. These ecological effects, as well as changes in the market for paper products, could affect various socio-economic aspects of the human environment.

c) Predict environmental effects: Aquatic effects might include improved quality of surface waters near paper plants due to reduced volume and toxicity of effluents. Terrestrial effects might include loss of wildlife habitat due to land clearing for construction. There may also be reduced pressure on wildlife habitat as recycled paper replaces some of the wood fibre that would have been obtained from forest harvesting. Watershed protection and improved water quality as a result of decreased logging. Reducing pressures on landfill sites through the diversion of waste paper. Greenhouse gases, such as methane, could be released from the decay of paper products in landfill sites.

d) Classify each effect as positive or negative: The predicted aquatic effects are positive, while effects on the terrestrial environment may be both positive and negative.

e) Estimate the significance of each identified effect: The negative effects are likely to be of limited geographic extent and short duration. The positive effects are likely to be more widespread and long-term. Thus the negative environmental effects could be insignificant, while the positive ones could be significant.

A HYPOTHETICAL EXAMPLE...

STEP 4

DETERMINE WHAT CAN BE DONE TO MITIGATE (REDUCE OR ELIMINATE) NEGATIVE EFFECTS AND ENHANCE POSITIVE EFFECTS

Mitigation could include changes in the proposed policy, conditions that may need to be placed on projects or activities arising from the policy option, or compensation measures. This Step also involves identifying uncertainties and determining the means to acquire more information about unknowns.

TASKS FOR STEP 4:

1. *Identify measures to reduce or eliminate negative effects.*
2. *Identify measures to enhance positive effects.*

APPLYING STEP 4:
IDENTIFYING MITIGATION MEASURES FOR A POLICY TO PROMOTE RECYCLING IN THE PAPER INDUSTRY

1. Identify measures to reduce or eliminate negative effects: Negative effects identified in step 3 relate to possible effects of construction of new facilities. Mitigation may include soil conservation and vegetation protection measures for construction sites. Another approach is to upgrade existing facilities instead of building new ones.

2. Identify measures to enhance positive effects: These measures could include maximizing the recycled content for any paper product, publicizing outcomes of the policy to stimulate recycling elsewhere, or identifying opportunities to apply related technology in other industries.

STEP 5

IDENTIFY ANY POTENTIAL ENVIRONMENTAL EFFECTS THAT REMAIN AFTER MITIGATION

Evaluate the net effect of each option in the light of mitigative measures that can or will be applied. Again, an important part of this analysis is to identify uncertainties and requirements for further analysis. Some of these future requirements may be addressed through project EAs under CEAA.

TASKS FOR STEP 5:

1. *Identify any potential environmental effects that remain after mitigation.*

DOCUMENT THE RESULTS OF THE ANALYSIS

STEP 6

Based on the analysis of options, the project team selects a preferred option. This option is provided, with the others, to senior management for the final decision. The specific documentation required will depend on the situation. However, the positive and negative environmental implications of each option should always be presented (See box on following page).

TASKS FOR STEP 6:

1. *Document the results of the analysis.*

For initiatives being considered for decision by Ministers and Cabinet:

When an SEA is conducted, a statement on environmental implications should be included in the analysis of Memoranda to Cabinet (MC), and, where appropriate, in Treasury Board submissions and other documents submitted for Ministers' consideration. This statement should clearly identify:

- environmental effects;
- mechanisms to mitigate these effects;
- any cumulative effects of the policy, plan or program under consideration;
- how the policy, plan or program impacts on the department's sustainable development strategy.

Where appropriate, the communications plan of a MC should brief Ministers on public statements that relate to the environmental effects. Public input received in earlier steps can assist development of the communications plan.

Summary information may suffice for Cabinet initiatives with minimal or insignificant environmental implications. However, where anticipated environmental effects are significant, or if there are significant public concerns about the effects, a more detailed account of the environmental assessment is required.

The rationale for the SEA conclusions and recommendations should be included in the documents supporting the proposal. This can take the form of a stand-alone environmental assessment document or report, or one that can be annexed to the MC if appropriate.

POST ASSESSMENT FOLLOW-UP

The benefits of SEA can be enhanced through post-assessment follow-up. Though not a formal Step of SEA, follow-up provides a feedback mechanism to determine the effectiveness of the SEA process and to identify further changes that may be needed in the policy, plan or program proposal.

Follow-up involves the following tasks:

1. Evaluate the validity of impact predictions and strategic assessment conclusions;
2. Determine whether the proposed measures to mitigate adverse effects and optimize benefits were carried out;
3. Evaluate the effectiveness of mitigation measures;
4. Identify any further changes needed to improve environmental benefits of the policy, plan or program;
5. Identify any additional strategic or project EAs that may be needed as a result of the policy, plan or program; and
6. Describe the lessons learned from this SEA.

Program reviews or scheduled (five-year) reviews of legislation may provide opportunities to incorporate SEA follow-up results. Experience at the project level may also identify the need for new policies or changes to existing ones. Thus project EAs and project follow-up studies can provide feedback to policies, plans and programs.

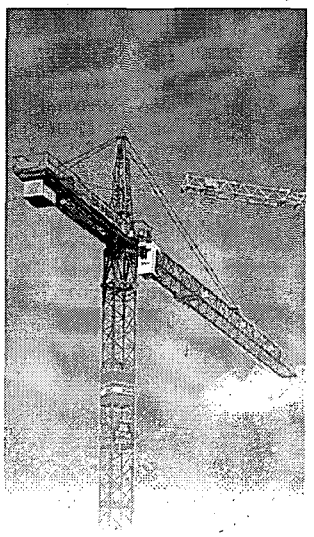
Appendix 5 *provides a questionnaire to record results of the follow-up analysis.*

SUGGESTED FORMAT FOR DOCUMENTING THE SEA

The EA report or other documentation for the analysis should include:

1. a description of the initiative including options evaluated;
2. an evaluation of the nature of each of the environmental effects at the appropriate level of detail (should cover all federal interests, any other environmental effects, including direct and indirect and directly related socio-economic effects);
3. a summary and analysis of any public consultation or concern regarding the proposal;
4. an overall evaluation/conclusion of the likelihood/magnitude of these potential effects, taking into account the availability or feasibility of mitigation approaches; and
5. follow-up requirements.

Note: *Completed SEA worksheets may be included in the documentation if appropriate (see Appendix 4).*



PART 6

WHERE TO GET ASSISTANCE

The Environmental Assessment Branch in the National Programs Directorate can provide advice on any of EC's strategic environmental assessment requirements. MC authors and policy analysts should also seek appropriate advice from other environmental experts in the Department, such as the Environmental Assessment Coordinators in each region, and policy experts in Corporate Policy & Communications.

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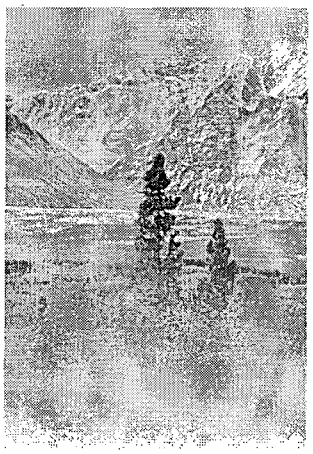
For further information:

For more information on SEA and related documents, visit the following web sites:
The Canadian Environmental Assessment Agency: http://www.ceaa.gc.ca
The 1999 Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals: http://www.ceaa.gc.ca/act/dir_e.htm
Environment Canada's Green lane: http://www.ec.gc.ca
The Environmental Assessment Branch: http://infolane.ec.gc.ca:8000/~EA



PART 7
APPENDICES

APPENDIX 1

DEFINITIONS

Terms used in this manual, have the following definitions, some of which have been adapted from the *Canadian Environmental Assessment Act.*

"**Environment**" means the components of the Earth, and includes:
- (*a*) land, water and air, including all layers of the atmosphere,
- (*b*) all organic and inorganic matter and living organisms, and
- (*c*) the interacting natural systems that include components referred to in paragraphs (*a*) and (*b*) of the CEAA.

"**Environmental effect**" means:
- (*a*) any change that the project may cause in the environment, includ ing any effect of any such change on health and socioeconomic conditions, on physical and cultural heritage, on the current use of lands and resources for traditional purposes by aboriginal persons, or on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, and
- (*b*) any change to the project that may be caused by the environment, whether any such change occurs within or outside Canada.

"**Follow-up program**" means a program for:
- (*a*) verifying the accuracy of the environmental assessment of a project, and
- (*b*) determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project.

"**Interested party**" means, in respect of an environmental assessment, any person or body having an interest in the outcome of the environmental assessment for a purpose that is neither frivolous nor vexatious.

"**Mitigation**" means the elimination, reduction or control of the adverse environmental effects of a policy, plan or program, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means.

"**Sustainable development**" means development that meets the needs of the present, without compromising the ability of future generations to meet their own needs.

APPENDIX 2 HOW TO APPLY THE SEA PROCESS TO POLICY, PLAN OR PROGRAM PROPOSALS

SEA is a relatively new concept to many policy analysts. Thus it is useful to describe some specific situations where SEA is required and how the analysis may differ for different types of policy, plan or program proposals. This appendix addresses these information needs by:

I. defining what is meant by a "strategic" initiative that requires assessment, and
II. providing some examples of the types of environmental implications associated with different kinds of policy, plan and program proposals.

HOW TO DETERMINE THAT A PARTICULAR INITIATIVE REQUIRES AN SEA

As a leader in environmentally responsible government at the federal level, Environment Canada is committed to ensuring that environmental considerations guide all it's activities. Applying this guiding principle means that the environmental implications are always considered before decisions are made. This concept applies at all levels of decision-making, from day-to-day operations to multi-year plans. Environmental assessment, at both the project and strategic levels, is one of the tools for incorporating environmental considerations into decision-making.

The 1999 *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* states that:

> "Ministers expect an environmental assessment of a policy, plan or program proposal to be conducted when the following two conditions are met:
>
> 1) the proposal is submitted to an individual Minister or Cabinet for approval; and
> 2) implementation of the proposal may result in important environmental effects, either positive or negative.
>
> Departments and agencies are also encouraged to conduct environmental assessments for other policy, plan or program proposals where circumstances warrant. An initiative may be selected for assessment to help implement departmental or agency goals in sustainable development, or if there are strong public concerns about possible environmental consequences.
>
> Ministers expect the environmental assessment to consider the scope and nature of the likely environmental effects, the need for mitigation to reduce or eliminate adverse effects, and the likely importance of any adverse environmental effects, taking mitigation into account. The environmental assessment should contribute to the development of policy, plan and program proposals on an equal basis with economic or social analysis; the level of effort in conducting the analysis of potential environmental

> effects should be commensurate with the level of anticipated environmental effects. The environmental considerations should be fully integrated into the analysis of each of the options developed for consideration, and the decision should incorporate the results of the environmental assessment. Departments and agencies should use, to the fullest extent possible, existing mechanisms to involve the public, as appropriate, and document and report on the findings of the environmental assessment."

Page four lists some specific types of strategic initiatives that fall within the general description provided in the Cabinet Directive. However, the key consideration is not to determine whether your particular initiative is on or off the list. Rather you must decide what are the best means to ensure that the environment is considered in your activities, and that decision makers are well informed on the environmental implications before they take action.

Furthermore, it is not so important what form or format is used for preparing an SEA. The key consideration is to be able to demonstrate that environmental factors guided the analysis of policy, plan or program proposal options. This requires that the analysis be documented in some manner.

DETERMINING THE TYPE OF SEA ANALYSIS

The level and depth of analysis for an SEA may vary widely among the different types of strategic initiatives. For example, an SEA for a new environmental law or regulation could raise issues at the national to international levels. The resulting SEA analysis would be broad in scope and might be general in detail. Mitigation measures would be similarly broad in scope. By contrast, a regional pollution prevention program or species management plan could contain much more specific information and might focus on a limited geographic area. Mitigation measures would thus be more focussed and specific.

The boxes on the following pages present some examples to illustrate variations in SEA analysis among the different types of strategic initiatives that Environment Canada may be involved in.

SEA REPORT FORMATS

The box on page 20 of this manual presents a suggested format for documenting the SEA. Also, the Environmental Assessment Branch can provide samples of SEA reports of various types (see page 21, Part 6).

The particular format that you chose will depend on your needs. The key objectives are to:

1. provide useful information for decision makers;
2. demonstrate that environmental implications were considered in developing policy options;
3. recommend a preferred option; and

4. identify the appropriate measures to minimize adverse effects and maximize benefits.

Note: *Your normal policy development procedures may indicate an appropriate format for documenting the SEA.*

Reporting formats may also be determined by the Minister's or other decision makers' information requirements. Alternatively, the format may be dictated by the nature of the strategic initiative being assessed.

EXAMPLES ILLUSTRATING VARIATIONS IN SEA ANALYSIS

Here are some hypothetical examples to show how SEA could be applied to various kinds of strategic initiatives.

EXAMPLE 1

Strategic Initiative: Regulations for non-toxic shot: under the Migratory Bird Regulations of the *Migratory Bird Convention Act*, a new regulation to prohibit the use of lead shot for hunting migratory game birds.

Likely environmental issues: National and provincial scale: proof of toxicity of lead on migratory game birds; ongoing research on the effects of upland species such as woodcock; environmental impacts of other types of alternative shot; wastage/injury of birds due to unfamiliarity of hunters with new shot; what happens to old stocks of lead shot (ammunition dealers).

Possible environmental effects: increases or decreases in migratory game bird populations; loss or gain in habitat quality;

Potential mitigation measures: phase-in of the new regulations over several years to allow hunters to adapt to the change in ammunition and to allow dealers to sell off lead shot stocks; non-toxic shot, educational clinics in cooperation with the provinces.

EXAMPLE 2

Strategic initiative: development of a management plan for a National Wildlife Area

Likely environmental issues: maintenance and development of infrastructure; types and level of use in the area, including the cumulative effects of activities such as cattle grazing, cutting hay, vegetation management, and recreational activities

Possible environmental effects: loss of natural vegetation, habitat disturbance, disturbance to nests of certain species of ground-nesting birds, erosion

Potential mitigation measures: develop guidelines for timing of haying activities; define areas and conditions for grazing, develop use limits for recreational purposes

EXAMPLE 3

Strategic initiative: A new policy to promote recycling and waste exchanges in chemical industries

Likely environmental issues: National to local scale: pollution prevention, transportation of toxic materials

Possible environmental effects: more efficient use of resources; waste reduction; potential for increased risk of toxic spills during plant-to-plant transportation of waste materials for recycling

Potential mitigation measures: Specifying in-plant measures and transportation measures to prevent release of toxic materials; providing for inspection programs to ensure adherence to environmental and safety requirements

EXAMPLE 4

Strategic initiative: Identifying and evaluating funding options for the first phase of a clean-up effort

Likely environmental issues: Human health risks; continued level of unemployment with associated health risks; further contamination of fish-bearing waters, increasing risk to terrestrial animals

Possible environmental effects: Local scale; contamination of soils by sewage and landfill leachates, continued leakage of hazardous wastes into watershed, into residential properties

Potential mitigation measures: Continued federal funding of community based management team (JAG), accelerate clean-up by fully funding the activities proposed

EXAMPLE 5

Strategic initiative: Memorandum to Cabinet on the use of market incentives for air pollution control (sulfur dioxide emission trading)

Likely environmental issues: public concern over the concept of "permits to pollute"; defining overall acceptable limits; potential synergistic effects of sulfur dioxide in combination with other forms of chemical pollution; effects on human health

Possible environmental effects: reduction in overall levels of sulfur dioxide emissions; possible increases in other types of emissions

Potential mitigation measures: require affected utilities to install systems to monitor sulfur dioxides, nitrogen oxides and other related pollutants; public information program.

APPENDIX 3 ENVIRONMENTAL IMPLICATIONS OF DIFFERENT TYPES OF POLICIES, PLANS AND PROGRAMS

Policies and programs related to energy, transportation, agriculture, non-renewable resource extraction, waste management, forestry, fisheries, water management, and development of environmental targets or remediation all have a clear potential to affect the environment. In other cases, such as taxation, education, or social programs, the potential exists for secondary or indirect effects. The SEA should consider the potential for such indirect effects.

In all cases, decision making for policies involves identifying, describing and integrating environmental, economic and social implications in a balanced and logical fashion to assist decision-makers.

EXAMPLES OF POLICIES AND PROGRAMS WITH POTENTIALLY SIGNIFICANT ENVIRONMENTAL EFFECTS

- Waste management programs governing the handling, recycling or disposal of wastes generated by federal facilities
- Policies affecting consumer and industrial practices regarding resource consumption and environmental conservation
- Federal land management policies
- Resource development policies and programs (e.g. mining, energy, wildlife harvesting, forestry) affecting the nature and rate of development and land use conversion
- Research and development policies that affect environmental technologies and their application
- Legislative, regulatory or other measures affecting pollution control

SEA WORKSHEETS

APPENDIX 4

This appendix contains a set of SEA worksheets (reduced in size for this presentation), with accompanying instructions. The worksheets provide a tool to analyze and document the environmental effects of a policy, plan or program. By filling out the worksheets, you will have met the information requirements for steps 1 to 5 of the SEA. Depending on your situation, the completed worksheets may be all that is required for step 6, documenting the SEA.

A full-size set of worksheets have been included at the end of this manual and can be duplicated as required.

DETERMINE THE STUDY APPROACH

STEP 1 Worksheet

This Step determines the focus, level of effort, and required tasks for the ensuing analysis.

1. **What are the key environmental issues associated with the proposal?**

2. **What are the likely stakeholder concerns about the identified issues?**

3. **What are the implications of the issues and concerns for the detailed analysis of each option's environmental effects?**

   - What technical studies may be required?
   - Who should be involved?
   - How could the public be involved in subsequent stages of the SEA?

4. **What are the specific SEA process requirements?**

   - Will CEAA apply to projects arising from the policy, plan or program proposal?
   - Is a separate SEA report required?

5. **What is the relation to other SEAs and project EAs?**

   - Have previous similar studies been conducted?
   - If so, have some EA requirements been met? If so, what?
   - Are there any links to other ongoing assessment processes?

STEP 2
Worksheet

IDENTIFY THE POSSIBLE OPTIONS FOR THE POLICY, PLAN OR PROGRAM PROPOSAL

Identify all possible options for the policy, plan or program proposal. Options could include:

- alternatives to the proposal, that is other basic approaches to the problem (this should include the "status quo" option), and
- alternative means to carry out the proposal (variations on the basic proposal being considered; these might vary in terms of scale, timing and location).

Identify other information needs and SEA process requirements: *Identify relevant policies and regulations (analyze relevant federal policies and regulations to put the options in their proper context).*

Feasibility analysis: Certain options might be eliminated from further consideration due to ineffectiveness in meeting the objectives, because of major environmental concerns, or because they are not feasible for other reasons. The Step 2 worksheet can be used to document this analysis (see sample worksheet below).

Step 2 Worksheet: Identifying the short list of options for further consideration in the SEA		
Possible Options	**Feaibility Analysis Is the option worth pursuing?**	**Carry forward for detailed analysis? (yes/no)**
1.		
2.		
3.		
4.		
5.		

IDENTIFYING THE ISSUES AS THEY RELATE TO THE OPTIONS

STEP 2
Worksheet b

A second worksheet is provided to help analyze the extent to which the options retained address the issues identified in Step 1. This simple matrix will help highlight which of the options contribute to solving some of the environmental challenges, which are compounding existing problems, and whether some issues are not adequately addressed by any of the options. This type of analysis will allow you to develop additional options or modify existing ones early in the process, and will also provide useful information to guide the identification of the likely environmental effects of each viable option in Step 3.

Step 2 Worksheet b: Identifying the issues as they relate to the options				
Options	**Issue 1**	**Issue 2**	**Issue 3**	**Issue 4**
1.				
2.				
3.				
4.				
5.				

STEP 3
Worksheet

IDENTIFY THE LIKELY ENVIRONMENTAL EFFECTS OF EACH VIABLE OPTION

a) Identify potential positive and negative environmental effects of the policy, plan or program.

Consider effects, both direct and indirect, or obvious and subtle. The Step 3 worksheet can be used to record this analysis (see sample worksheet below). One worksheet should be completed for each policy option being considered.

First identify those outcomes of the policy (products, activities or events) that have environmental implications. This information goes in the first column of the worksheet.

For each of these identified outcomes, you should then identify those environmental features that may be affected, either positively or negatively. This is done by inserting a "+" (positive effect) or "-" (negative effect) in the appropriate columns under the heading "potentially affected environmental features". Thus each "+" or "-" recorded on the worksheet represents an environmental effect resulting from the policy, plan or program option.

Step 3 Worksheet: Identify potential positive and negative environmental effects

Policy Outcomes (list the products, activities and/or events that the policy, plan or program proposal will bring about. This requires listing those specific, tangible results of the proposal that may have environmental implications.)	Potentially affected environmental features ('+' =positive effect / '-'=negative effect)														
	Aquatic				Terrestrial				Atmospheric		Socio-Economic				
	HYDROLOGY	FLORA	FAUNA	BIODIVERSITY	PHYSIOGRAPHY	FLORA	FAUNA	BIODIVERSITY	AIR QUALITY	CLIMATE TRENDS	ARCHEOLOGICAL REMAINS	HISTORICAL / CULTURAL	LAND/ RESOURCE USE	ECONOMY	AESTHETICS

STEP 3
Worksheet b

b) Describe each identified effect.

You may use the Step 3 worksheet b to record this information for each policy, plan or program option. Again, one worksheet should be completed for each policy option under consideration. Briefly describe the effect in the first column of the worksheet, and describe its magnitude or likelihood and magnitude in the second column.

The following criteria may be used to determine the likelihood and magnitude of the effects:

- geographic extent of the effect (limited, moderate, or extensive)
- duration (short-term, moderate, or long-term)
- frequency of the effect's recurrence (no recurrence, infrequent, or frequent recurrence)
- reversibility (Can the environment be restored to the pre-effect conditions, or is the effect irreversible?)
- ecological sensitivity (Are the potentially affected aquatic, terrestrial or atmospheric features particularly sensitive, or are they resilient?)
- socioeconomic sensitivity (Is the potentially affected human population particularly vulnerable to the predicted effects?

Step 3 Worksheet b: Magnitude of Effects

	Effect	Magnitude	Comments
Negative Effects			
Positive Effects			

STEP 4
Worksheet

DETERMINE WHAT CAN BE DONE TO MITIGATE (REDUCE OR ELIMINATE) NEGATIVE EFFECTS AND ENHANCE POSITIVE EFFECTS

Mitigation could include changes in the proposed policy, conditions that may need to be placed on projects or activities arising from the policy option, or compensation measures. Mitigation may involve reducing negative environmental effects or enhancing positive effects.

Mitigation measures appropriate to each identified effect should be listed in the second column of the Step 4 worksheet.

This Step also involves identifying uncertainties and determining the means to acquire more information about unknowns. This information can be presented in the "comments" column.

Step 4 Worksheet: Mitigation of Effects

	Effect	Mitigation	Comments
Negative Effects			
Positive Effects			

IDENTIFY ANY POTENTIAL ENVIRONMENTAL EFFECTS THAT REMAIN AFTER MITIGATION

STEP 5
Worksheet

Summarize the advantages, disadvantages and describe the net effect of each option based on mitigative measures that can or will be applied. Again, an important part of this analysis is to identify uncertainties and requirements for further analysis. Some of these future requirements may be addressed through project EAs under CEAA.

Step 5 Worksheet: Summary of Advantages and Disadvantages

Options	Advantages	Disadvantages	Uncertainties
1.			
2.			
3.			
4.			
5.			

APPENDIX 5 QUESTIONNAIRE FOR SEA FOLLOW-UP

The benefits of SEA can be enhanced by completing a post-assessment follow-up after the policy, plan or program has been implemented. This appendix provides a questionnaire to record results of the follow-up analysis. The completed questionnaire can provide useful documentation for carrying out the selected policy, plan or program option. It can also help improve future SEAs.

QUESTIONNAIRE

1) Validity of assessment conclusions: Was the nature, likelihood and magnitude of environmental effects consistent with the SEA predictions?

2) Were the proposed measures to mitigate adverse effects and optimize benefits carried out?

3) Were the mitigation measures effective?

4) Are there further changes needed to improve environmental benefits of the policy, plan or program?

5) Are further SEAs or project EAs required?

6) What lessons can be learned from this SEA?

FULL-LENGTH WORKSHEETS

STEP 1 Worksheet
DETERMINE THE STUDY APPROACH

DETERMINE THE STUDY APPROACH

This Step determines the focus, level of effort, and required tasks for the ensuing analysis.

1. **What are the key environmental issues associated with the proposal?**

2. **What are the likely stakeholder concerns about the identified issues?**

3. **What are the implications of the issues and concerns for the detailed analysis of each option's environmental effects?**

   - What technical studies may be required?
   - Who should be involved?
   - How could the public be involved in subsequent stages of the SEA?

4. **What are the specific SEA process requirements?**

   - Will CEAA apply to projects arising from the policy, plan or program proposal?
   - Is a separate SEA report required?

5. **What is the relation to other SEAs and project EAs?**

   - Have previous similar studies been conducted?
   - If so, have some EA requirements been met? If so, what?
   - Are there any links to other ongoing assessment processes?

STEP 2 Worksheet
IDENTIFY OPTIONS

Step 2 Worksheet: Identifying the short list of options for further consideration in the SEA		
Possible Options	**Feaibility Analysis Is the option worth pursuing?**	**Carry forward for detailed analysis? (yes/no)**
1.		
2.		
3.		
4.		
5.		

STEP 2 Worksheet b
IDENTIFYING ISSUES AS THEY RELATE TO THE OPTIONS

Step 2 Worksheet b: Identifying the issues as they relate to the options				
Options	**Issue 1**	**Issue 2**	**Issue 3**	**Issue 4**
1.				
2.				
3.				
4.				
5.				

STEP 3 Worksheet
POSITIVE AND NEGATIVE ENVIRONMENTAL EFFECTS

Step 3 Worksheet: Identify potential positive and negative environmental effects

Policy Outcomes (list the products, activities and/or events that the policy, plan or program proposal will bring about. This requires listing those specific, tangible results of the proposal that may have environmental implciations.)	Potentially affected environmental features ('+' =positive effect / '-'=negative effect)														
	Aquatic				Terrestrial				Atmospheric		Socio-Economic				
	HYDROLOGY	FLORA	FAUNA	BIODIVERSITY	PHYSIOGRAPHY	FLORA	FAUNA	BIODIVERSITY	AIR QUALITY	CLIMATE TRENDS	ARCHEOLOGICAL REMAINS	HISTORICAL / CULTURAL	LAND/ RESOURCE USE	ECONOMY	AESTHETICS

STEP 3 Worksheet b
ANALYSIS OF EFFECTS: MAGNITUDE

Step 3 Worksheet b: Magnitude of Effects			
	Effect	**Magnitude**	**Comments**
NEGATIVE EFFECTS			
POSITIVE EFFECTS			

STEP 4 Worksheet
ANALYSIS OF EFFECTS: MITIGATION

Step 4 Worksheet: Mitigation of Effects			
	Effect	**Mitigation**	**Comments**
NEGATIVE EFFECTS			
POSITIVE EFFECTS			

STEP 5 Worksheet
SUMMARY OF ADVANTAGES AND DISADVANTAGES

Step 5 Worksheet: Summary of Advantages and Disadvantages			
Options	**Advantages**	**Disadvantages**	**Uncertainties**
1.			
2.			
3.			
4.			
5.			