

Canadian
Environmental
Advisory
Council

An
Environmental
Impact
Assessment
Process
For Canada

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no.1

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Report No.1 February 1974

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The Canadian Environmental Advisory Council was established in 1972 by decision of the federal Cabinet, to advise the Minister of the Environment on such matters as may specifically be referred to it by the Minister; the state of the environment and threats to it; priorities for action by the Federal Government or by the Federal Government jointly with the provinces; the effectiveness of activities of the Department of the Environment in restoring, preserving or enhancing the quality of the environment.

The Council is composed of up to sixteen members. It includes the Chairmen of the resource councils advisory to the Minister, plus members at large who serve in an individual capacity and are drawn from a wide cross-section of Canadian life and from all across Canada. Officials of the Department of the Environment are not members of the Council; however the Department provides a continuing Secretariat.

The present membership of the Council is listed on page 8 of this publication.

To carry out its functions the Council undertakes studies and reviews of matters of environmental concern and policy; holds regular meetings to consider progress and developments with regard to these concerns, and prepares comments, statements and reports as appropriate. The Council publishes an Annual Review which includes a summary of the state of the environment in Canada, and from time to time reports on other matters of general interest and importance.

Enquiries concerning the work of the Canadian Environmental Advisory Council should be addressed to:

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Summary

- 1 Many of mankind's activities have harmful impacts on the natural environment.
- 2 The probable impact of proposed activities should be assessed before the proposals are approved, and again as part of the planning process that follows a positive decision to proceed.
- 3 There are ecological absolutes that may not be transgressed and that must prohibit certain projects and activities.
- 4 Projects which it is suggested should fall within federal jurisdiction and require environmental assessment include federal projects, projects on Crown Land or in the Territories, projects involving more than one provincial jurisdiction, projects receiving significant federal financial assistance, projects by organizations under federal control, and activities already under the control of federal regulations. Legislation should be enacted to require assessment of projects in these categories.
- 5 Not all projects will significantly affect the environment. The characteristics of projects requiring environmental assessment are discussed.
- 6 Environmental assessment is the process which leads to an environmental impact statement.
- 7 The public should be enabled to request assessments of proposed projects.
- 8 An Environmental Review Board, composed predominantly of members from outside the Federal Government, should be established to review environmental impact statements.

Note

During the interval between the completion of the text of this report and its publication, some of its recommendations were overtaken by events. The Government of Canada, through the Department of the Environment, has established the Environmental Assessment and Review Process. The Process as presently in operation (February 1975) differs in several substantial ways from the recommendations of the Canadian Environmental Advisory Council. However, Council does not wish to change its recommendations, and trusts that publication of this report will assist in constructive consideration of the essential elements of the best possible process for environmental impact assessment at all government levels in Canada.

An Environmental Impact Assessment Process For Canada

It is now recognized widely that many of mankind's activities have impacts on the environment. Whereas one may argue from an abstract point of view that nature cannot be improved upon, not all impacts are harmful to mankind's interests; some may actually enhance the environment for our purposes without harming the natural system. However, many activities do have harmful impacts that are deleterious to the environment, and it is increasingly important that these impacts be assessed.

In the past, if assessments were conducted at all, they were *post facto*, simply determining the impact after a project was completed. It is increasingly recognized that the consequences of certain activities and projects must be assessed, both as part of the decision-making that determines whether they will be implemented at all, and also, as part of the planning process that follows after a positive decision to proceed. The former, then, will be a determinant of the feasibility of a project and the latter will be to ensure a design that will minimize the harmful impact of an ongoing project.

Implicit in this is the recognition that there are biological or ecological absolutes that may not be transgressed and that must prohibit certain projects and activities, no matter how important they may seem, or how ardently they are advocated. If this principle is not recognized then impact assessments can be regarded only as palliative devices to minimize the environmental destruction of projects whose viability

remains non-negotiable in environmental terms. Examples of projects that might violate such ecological absolutes are those that would destroy or eliminate species, significantly reduce the biological activity of major geographical areas, interrupt important migratory bird flyways, or release unacceptable toxic materials into the biosphere.

The Canadian Environmental Advisory Council recognizes that it is beyond the jurisdiction of the Federal Government to require environmental assessments on all projects in Canada that might have environmental significance, but we believe that the Federal Government should continue to develop policies¹ that require all projects within its jurisdiction be so assessed and provide leadership to other jurisdictions to develop similar policies. There are also opportunities for imaginative and sensitive cooperative relationships between the federal and provincial jurisdictions.

Useful background information on the assessment of environmental impacts is provided by the Proceedings: Workshop on the Philosophy of Environmental Impact Assessment in Canada, October, 1973.²

The following criteria are suggested for determining the projects that fall within the federal jurisdiction, and require environmental assessment:

- 1 *Federal Projects*—projects that are undertaken by the Federal Government for its own purposes.
- 2 *Crown Land or the Territories*—public or private projects on Federal Crown Lands or in the Federal Territories.
- 3 *Interjurisdiction*—projects or activities that might affect two or more provinces, or have international impact.

4 *Federal Spending Power*—projects that are undertaken within other jurisdictions but that include a significant federal financial contribution.

5 Organizations under federal control and legislative authority.

6 Activities coming within such federal regulations as the Migratory Birds Act, the Clean Air Act, the Canada Water Act, the Arctic Waters Pollution Control Act, etc.

Obviously, not all projects that fall within these criteria will affect the environment significantly. Therefore a screening process will be required to identify the projects that require environmental assessment. It is suggested that any project with one or more of the following characteristics must be subject to environmental assessment:

- 1 Might significantly reduce the quality of the air and /or water.
- 2 Might have a detrimental effect on wildlife and flora, or rare or particularly endangered species.
- 3 Might generate toxic wastes during construction or subsequent operation, which will be released or escape into the environment.
- 4 Might significantly affect the aesthetic value of the landscape.
- 5 Will require more than x-units of energy to construct and /or operate.
- 6 Will involve the movement, temporary or permanent, of large numbers of people to wilderness areas.

In all of these, several factors are important: the question of temporal scale; whether effects are long- or short-lived; trends and consequential results.³ Assessing the impact of oil exploration, without considering the impact of the oil field which is likely to

¹See "Green Paper on Environmental Assessment", Ontario Ministry of the Environment, September, 1973.

²Environment Protection Board, 528 St. James St. S., Winnipeg, Manitoba.

³See also Summary of a Brief of the Environmental Law Committee of the Canadian Bar Association, Ontario section, for presentation Monday, April 17, 1972 to the Canadian Preparatory Committee to the United Nations Conference on the Human Environment.

follow a discovery, will be of little value. In a proposal for an integrated hydro development, the impact of the dam, transmission lines, construction villages, and other developments, must all be taken into account. The impact of a highway may be limited within a short time span but its presence may lead to massive urban sprawl. Our perception of what is significant is one which will take many years to develop fully through a national environmental impact assessment policy and process.

Formal federal legislation should be enacted requiring the environmental assessment of proposed projects in the categories mentioned.

Definitions

Although we have referred to environmental impact assessments in a general sense, it is necessary to have a clear understanding of what is meant. Two terms are commonly used in this area: "environmental assessment" and "environmental impact statement". In this paper the *environmental assessment* is the process which results in an *impact statement*. The assessment process consists of a series of environmental studies, analyses, design modifications, and so on, with the appropriate feedback loops.

When a project is first conceived, there should be a preliminary study of possible environmental, as well as economic, engineering, and social consequences. If none is considered to be an absolute constraint and the project is approved tentatively, there should be a detailed environmental assessment. This will include an analysis of the probable effects of the project on the environment, the tradeoffs and design changes

proposed to ameliorate harmful effects, and the identification of the residual problems. Major residual problems should be presented to the final authority, the Minister or Cabinet, for arbitration and resolution.

Preliminary Phase

A review of the past major projects that have been of environmental concern in Canada leads to the conclusion that their effects on the environment were not considered when the decisions were made to undertake the projects. In each case, a decision was made to proceed and environmental studies were only then—and only sometimes—initiated in an attempt to ameliorate the expected harmful effects. We believe that elaborate, time-consuming studies are not required to determine if a proposed project is likely to have environmental consequences. Accordingly, a project should be assessed carefully with a view to preparing an impact statement. Early identification is essential because it becomes increasingly more difficult to influence the decision as time passes.

Public Involvement

Any process that is established to review the environmental impact of projects or activities should include mechanisms that permit the public to request an environmental assessment, and to comment on impact statements that may result. Obviously, some constraints are required to limit this procedure to requests about serious issues. These constraints might be:

- 1 A lower limit on the size of the project.
- 2 The number of people likely to be affected, or the size of the geographic area involved.
- 3 A deposit of perhaps \$100 to accompany each request for assessment, refundable if it is granted.

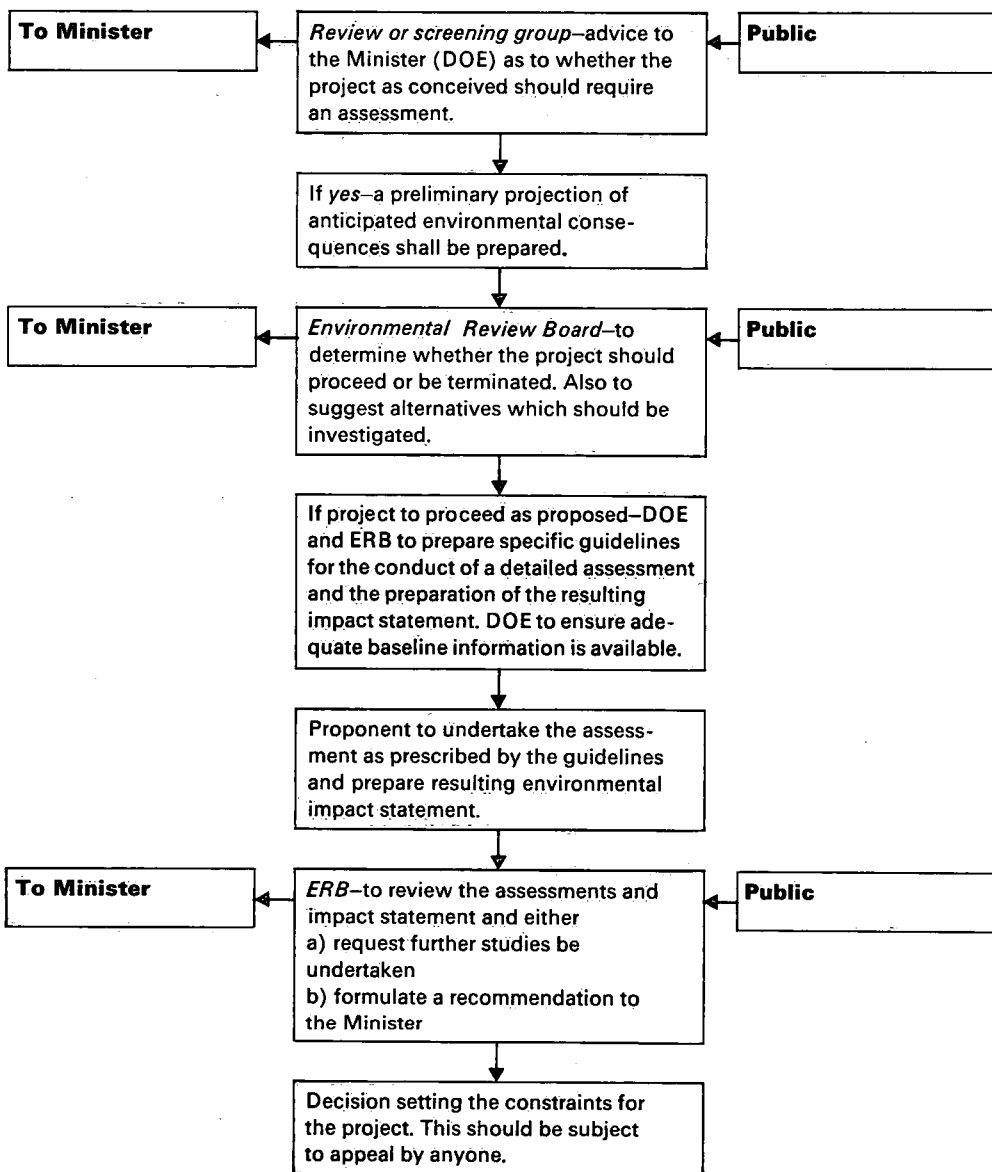
Review Board

We believe that there is a requirement for an independent review process whereby each environmental impact statement resulting from an assessment is reviewed and a document prepared as a recommendation to the Minister or Cabinet. This would require the establishment of an independent Board or Committee backed by some continuing scientific capability. For the purpose of this paper, the group is referred to as the Environmental Review Board (ERB). It is before this Board that members of the public should have the opportunity to comment on impact statements, as recommended above. The members of this Board should be drawn from sources outside the Federal Government, as well as from the federal service, and outside members should be in the majority. A Board composed exclusively or predominantly from the federal service could lack public credibility.

Proposed Process

The following is a general procedure. It is recognized that the nature of some projects and the probability of their affecting the environment may necessitate changes to the flow through the process.

A brief statement should be provided by the proponent of the objectives, scope and nature of the project in the early conceptual stage. This would be the first step in the following process:



Environmental Assessment Policy

Canada needs a national policy and a process by which the certain, probable, and possible environmental impacts of man's actions are identified and assessed so that potential environmental consequences are considered before decisions are taken and commitments are made. The conflict between economic and social desiderata and environmental imperatives will be better resolved if both are considered fully. There are social implications which are difficult and often impossible to quantify, but which must be considered.

The educational value of an effective environmental impact assessment process cannot be over-stressed. It will promote consideration of more acceptable alternatives to a proposed action and identify "ecologically sensitive" areas where certain actions or types of action ought to be prohibited or restricted.

A policy is outlined as follows :

- 1 The Federal Government shall offer leadership in implementing a national environmental impact assessment policy and procedure.

Life-supporting systems function without regard to provincial or national boundaries. Therefore, it is a matter of national concern that environmental impacts be identified and assessed so that those deemed unacceptable can be avoided. Federal leadership will set an example for the provinces, municipalities, and others concerned with local environmental problems.

- 2 An independent Environmental Review Board (ERB) shall be established to administer an environmental impact assessment procedure ; to evaluate the adequacy of impact statements ; to pronounce on environmental implications ;

and to require monitoring as occasion warrants. However, the Board will not actually render final decisions on the merits of proposed activities. This is the prerogative of the Minister.

If the ERB is to fill a national role, its independence must be assured—and obvious. Accordingly, its members must be appointed for their expertise and impartiality. They should be predominantly from the private sector.

- 3 Certain classes of actions shall be phased into the assessment process from time to time.

Initially, it will be necessary to phase all classes of actions into the assessment process according to potential environmental significance and the resources available to the ERB. Once classes of actions have been phased into the assessment process, it will be possible for the ERB to screen out certain proposed actions at an early stage if their potential environmental impacts are shown to be of a minor nature. There may be exclusions to the process such as military activities, measures for national security, and emergencies.

- 4 Responsibility for conducting the assessment and for the preparation of environmental impact statements shall rest with the proponent of the action. The onus of meeting procedural requirements will carry with it the necessity to bear the cost of the assessment.

Both government and private industry habitually conduct assessments of engineering and economic feasibility. The requirement for environmental impact assessment is a simple extension of this normal planning process.

- 5 The environmental impact statement shall include adequately detailed statements of environmentally desirable alternatives to the proposed action (including those for no action) and a summary of the environmental consequences of those alternatives.

In order that environmental alternatives will be considered adequately it is essential that proposals cover alternative means of achieving the project objectives. For example, the objective of the Third Crossing in Vancouver is to improve transportation across Burrard Inlet and not simply to build a tunnel. Alternatives include a bridge, ferry boats, hovercraft, aerial gondolas, improved public transportation on existing structures, the encouragement of population growth in other areas, etc.

It is recognized that there are limits to the extent to which the project proponent can reasonably be expected to go in assessing alternatives. If an environmental impact assessment statement is technically adequate and gives a "fair" summary of alternatives, the responsibility for further assessment will rest with the ERB.

- 6 The environmental impact statement shall be prepared in accordance with ERB and DOE guidelines outlining the considerations the proponent must take into account. In addition to the procedures and directions for preparing the statement, the guidelines will allow for public participation and classification of actions for processing. In complex major actions, they will allow for cooperation between lead agencies and those agencies with involvement in partial aspects of the action.

- 7 Provision shall be made for public participation in the environmental assessment and impact process. The ERB shall make public and invite comment on all final environmental impact statements and shall involve the public further as required.

This provision for public involvement is to insure that: a) all parties likely to be affected by the environmental impacts of proposed actions, but unlikely to be represented in the assessment and decision processes, are afforded an opportunity to express their views; b) the ERB and the decision-maker have access to adequate information. Information from the public may be especially useful when value judgments and social issues are involved; c) greater accountability is fostered in the decision making process, and; d) the public has assurance that all relevant issues have been considered.

- 8 The information requirements of the proposed environmental impact assessment procedure will necessitate the development of an environmental data and information facility and certain new research activities.

An Environmental Impact Evaluation Procedure

1 The procedure is designed to assess all action proposals having certain, probable and possible impacts on the environment. The procedure is designed to be effective after the passing of an "Environmental Assessment Act" and the establishment of the ERB. Much the same procedure can be used in the interval during which an interim board will develop the functions of the ERB.

2 The environmental impact statement is a key document in the procedure, and should contain: a) a description of the proposed action adequate to permit a careful evaluation of the environmental impacts; b) a description of the environmental impact of the proposal, including a discussion of any special construction or operational precautions intended to reduce potential impacts; c) a statement of any adverse, unavoidable environmental effects which might develop, with a discussion of their significance; d) an account of any irreversible or irretrievable commitments of resources, including a discussion of the extent to which the action curtails the range of other beneficial uses of the environment; e) an explanation and objective evaluation of alternative actions to the proposal, including an analysis of their expected environmental impacts, and; f) a statement on the relationship between local, short-term uses of the environment and the maintenance and enhancement of long-term productivity and utility of the environment.

3 The procedure provides for three stages: a) a preliminary assessment stage; b) a detailed assessment stage; and c) an environmental design and project development stage.

The preliminary stage covers the preparation of a preliminary assessment statement in which the proponent outlines his proposal and provides information on its probable impacts. The assessment is conducted without recourse to major research or field investigation and serves as the basis by which the ERB decides whether or not further, detailed, assessment is required. If detailed assessment is not required the proposal would not be assessed further once the ERB is satisfied with the adequacy of the preliminary statement. The proposal by-passes the remainder of the procedure and the ERB reports publicly on proposals cleared.

The detailed assessment stage involves those proposals for which impacts may be major or unknown. The ERB and DOE give guidance to proponents on the manner in which detailed assessments are to be conducted and accept detailed assessment statements only when satisfied as to their adequacy. The ERB refers the proposal to departments and agencies of government for their advice and recommendations and may advise the Minister of potential major impacts or policy implications.

The Minister can stop a proposal either before any assessment statement is made public or after public views have been received. In the former case, the proposal might be stopped on the basis of environmental impacts *per se* and in the latter case on the basis of public reaction. The ERB decides on the nature of public involvement and makes final statements available to the other agencies and the public. A period of at

least thirty days should be allowed for the receipt of briefs and comments. The ERB may conduct public hearings, or involve the public in other ways deemed appropriate, up to a maximum period of six months after the completion of the detailed impact assessment statement. The ERB will also arrange for public participation at the direction of the Minister of the Environment.

In the project development stage a proposal is implemented and monitoring is carried out when necessary to ascertain impacts. The need for monitoring is at the discretion of the ERB. Monitoring is conducted to provide information on the impacts of a proposal, and to provide an opportunity to modify the operation of a proposal if impacts can be avoided or reduced.

The environmental impact evaluation procedure is seen as a process in which development plans are modified to better meet environmental requirements. The procedure also influences and involves the proponent, affected agencies, the public, and the Cabinet, in an orderly and positive activity which could have a substantial effect in developing the environmental awareness of the nation.

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This report is published by the Information Services Directorate, Department of the Environment, Ottawa

Information Canada
Cat. No. En 93-1/1975
Ottawa, 1975

Design: Gottschalk + Ash Ltd.
Printing: Simon Ltd.
Cont. No. OKT4-2098