THE CANADIAN FEDERAL ENVIRONMENTAL ASSESSMENT AND REVIEW PROCESS: An Analysis of the Initial Assessment Phase

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It must be remembered that there is nothing more difficult to plan, more uncertain of success, nor more dangerous to manage than the creation of a new order of things. For the initiator has the enmity of all who profit by the preservation of the old institutions, and merely the lukewarm defenders in those who would gain by the new ones.

Machiavelli, *The Prince*

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FOREWORD

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EXECUTIVE SUMMARY

Environmental Impact Assessment (EIA) is increasingly becoming a basic tool for decision-making at the federal, provincial, and local levels of government. EIA is a form of pre-project evaluation intended to provide a basis for deciding whether, and how, to proceed with a proposed project so as to prevent or minimize environmental degradation. It assumes that incorporating environmental considerations early in the planning process of a project will better protect the environment.

The federal government introduced the Canadian Federal Environmental Assessment and Review Process (EARP) as a possible solution to environmental problems. Although EARP has influenced planning decisions to some extent, it has fallen short of original expectations. This paper presents the findings of an in-depth evaluation of how effective EARP actually is. More specifically, it assesses the effectiveness of the central element of the federal government's approach to implementing EIA requirements: the initial environmental assessment process, a process rooted in the concept of self-assessment.

The assessment of what has been called an "exemplary" initial assessment process as conducted by one of the federal government's best departments reveals that there are serious problems with the initial assessment phase and implementation of EARP. Currently, all federal government departments are lacking in both approach and implementation of EARP's initial assessment phase. Notwithstanding its original intent, with its emphasis on self-assessment, EARP has not significantly altered the bases upon which federal government departments make decisions. Often, a federal government department has decided to undertake environmental studies after deciding to undertake a project. Generally, the department approved the initial environmental evaluation studies after making irrevocable decisions and financial commitments.

A substantial amount of review on the need for improvements to EARP has been undertaken. Remedies for the misuse and problems associated with EARP do not require the development of new environmental assessment techniques. EARP has fallen short of original expectations because the potential of EIA cannot be fulfilled solely by its adoption as a concept. The effectiveness of EIA as a means of changing decision-making processes to include better environmental protection is dependent upon the strategy taken by the federal government to implement it and the adoption of a system which will ensure that the procedure will be followed.

The potential of EARP rests almost entirely on the willingness of proponent agencies to adhere to its intent. However, EARP's self-assessment approach has not been effective. Since the preventative approach to environmental protection will, in all likelihood, continue to be the major means of achieving environmental objectives, the initial assessment phase of EARP should not continue to be an academic exercise applied to decisions that have already been made. To deal with the serious problems associated with the initial assessment phase and self-assessment policy of EARP the federal government will have to take much stronger measures than it has to date. The federal government must legislate EARP, focusing on the implementation of its initial phase. Furthermore, a strongly based administrative authority must manage the process to- ensure compliance. Until the federal government alters the basic policy of EARP's self-assessment implementation and legislates EARP even the "best" federal government departments will continue to give low priority to and poorly implement EARP.

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1. INTRODUCTION

To protect the environment, the Canadian federal government has traditionally concentrated on trying to abate existing pollution and reduce environmental pollution by controlling emissions into the environment. This approach to environmental protection has been considered remedial in nature, fragmented, narrow in focus and unnecessarily mechanistic. It focuses upon curing environmental problems after-the-fact through engineering or public works that emphasize treatment technology and structural solutions (Baldwin 1985; Estrin and Swaigen 1978; Pollution Probe Foundation 1986). The Advisory Panel on Industry and Sustainable Development for the World Commission on Environment and Development (WCED) has noted that react-and-cure measures are economically and socially inefficient, costly and out of the reach of all but the richer industrialized countries (WCED 1986). Generally, this environmental management approach concentrates on remedying the results of poor planning, lack of pollution control equipment and/or poor attitudes toward environmental protection (Beale 1980).

There has been a growing awareness of the need for anticipate-and-prevent approaches to mitigate future environmental problems. The WCED's Mandate *for Change - Key Issues, Strategy and Workplan* (1985) emphasizes that:

> *given future trends, however, react-and-cure measures are clearly not sufficient. Unless they are rapidly reinforced by anticipate-and-prevent measures, it is doubtful that even the richer industrial nations will be able to catch up with the environment and development effects of past activities, let alone keep up with those of future activities. And, even if some could, they would do so at an unnecessarily high cost. As far as the poorer nations are concerned, experience to date suggests that there is little prospect that they will be able to afford the cost of after-the-fact, react-and-cure strategies in many areas, They must instead look to before-the-fact, anticipate and prevent strategies that are, almost invariably, more effective, more economic and, in the medium to longer term, more affordable.*

T.L. de Fayer, Secretary of the Canadian Association for the Club of Rome (1986), indicated that to make such changes in approaches requires recognition of the interdependence of our global systems, the indivisibility of our total environment and the personal involvement and participation of all in the global ecosystem. The Advisory Panel on Industry and Sustainable Development for the WCED declared that the overriding objective of this shift in approaches towards the *anticipate-and-prevent* approach must be to *integrate resource and environmental considerations fully and effectively into decision processes within both government and industry* (WCED 1986).

Decision-makers at all levels of various governments have been criticized for giving insufficient consideration to probable or potential environmental effects of actions. Beale (1980) notes:

> *from the results seen in every country, most existing planning systems seem incapable of taking adequate account of environmental concepts. Traditional economic planning processes give little attention to the environment; conventional physical planning processes lack an environmental regard.*

In the past, the impact of human activities on the environment was not considered an important part of the planning process. Planning decisions were made primarily on the basis of engineering, economic and political factors. Planning has been based too often on the assumption that the benefits from new development would more than compensate for any resulting environmental damage. The desire for continued improvements in the economic quality of life has not been accompanied by a sufficient appreciation of the possible adverse environmental effects of economic development (Environment Canada 1986). This disregard for environmental factors in the decision-making process resulted in many serious and expensive environmental problems. There is increasing awareness that sustainable economic development depends upon sound environmental management. Governments will continue to pursue goals of growth and development. However, these same governments must also be concerned about the effects of this growth upon humanity and the environment.

New *anticipate-and-prevent* approaches to environmental protection have evolved over the last two decades. One such approach is **environmental planning.** This focuses upon the concept that prevention is better than cure. Edington and Edington (1977) define environmental planning in the broad sense as an attempt to balance and harmonize the various enterprises that humanity, for its own benefit, has superimposed on natural environments. Environmental planning can be considered planning that takes into account the potential effects of

any project, program or policy on the natural environment, social environment, and man-made environment.

Avery high profile environmental planning tool is environmental impact assessment (EIA). EIA is a form of pre-project evaluation intended to provide a basis for deciding whether, and how, to proceed with a proposed project so as to prevent or minimize environmental degradation. The Canadian federal government formally defines EIA as *an activity designed to identify, predict and interpret the environmental impact of an action on human health and well-being, including the well-being of ecosystems on which human survival depends* (FEAR0 1987).

EIA was introduced in late 1969 as a response to public concern over the threats to both the natural and artificial environments that had become increasingly evident during the previous decade. EIA, as a concept, responded to two basic problems (Armour 1982a):

1. *a lack of understanding and information regarding environmental processes and man's impact on those processes; and*

2. *a lack of a means of factoring* this *information into the decision-making equation so that environmental costs and benefits could be taken into account alongside other considerations.*

EIA's preventative approach focuses upon the effects that a proposed project may have on the natural and human environment. As a result, decision-makers can possibly discover the problems an undertaking might cause before making a firm decision to proceed. This approach is a shift away from a *basically technological emphasis on controlling emissions of pollutants to a wider concern* for the social, economic and environmen*tal implications of development* (Estrin and Swaigen 1978). Since EIA is applied early in the planning process, it can assist in identifying potential environmental problems, give early warning when more inform? on on the potential impacts of the proposed projects are needed and point towards solutions to identified environmental problems before an irreversible decision is made (Rodgers 1976). In some situations, decision-makers may actually decide that the project should not be undertaken. EIA will provide decision-makers with information that can influence the planning, design and management of proposed projects. It assumes that if environmental considerations are incorporated into the early stages of the planning process, decision-makers will be able to make rational decisions on proposed projects and the environmental will be better protected.

EIA can help overcome deficiencies in conventional planning practice. Armour (1977) observes:

in accommodating EIA, it is suggested that planners and administrators have opportunities to make a range of improvements: more and better environmental inputs to comprehensive and functional plans; but a switch of emphasis from the input side of planning to its outputs, subjecting them to environmental assessment; plus a closer linkage between planning and implementation, down to details of construction and operation as they affect environmental quality; along with new forms of environmentally-oriented controls; and throughout, follow-up monitoring and post-action evaluation to catch inevitably unforeseen effects and to provide the feedback necessary to trigger corrective action and maintain the relevance of plans and policies. Taken as a *whole, these* measures comprise a new *form of "environmental management," a promising direction for urban regions and for planners.*

By undertaking EIA, project managers can save time and resources, facilitate public relations and improve departmental credibility (FEAR0 1987). Dorney (1986) estimated that in Ontario about:

- $10 million has been spent on professional contracts for impact assessment (about 0.1 per cent of total construction costs);
- environmental assessment costs for facility development is in the range of 10 to 15 per cent of total planning and engineering design (about one per cent of total construction costs); and
- barring major time delays, benefits can outweigh costs by 10 to15 to 1.

However, the potential of EIA cannot be fulfilled solely by its adoption as a concept. As Maurice F. Strong, First Executive Director of the United Nations Environment Programme (UNEP) states (Beale 1980):

A good theory does not necessarily get anything done practically. Practice is in the hands of the skilled manager, administrator and legislative draftsman. If these people are only given slogans and abstractphilosophies to translate into purposeful action, and this is usual, only rhetoric will result. If, on the other hand, they have a clear idea of the kinds of institutions they need to build, the linkages they need to forge between new and existing institutions, the techniques and tools available to them and the means by which they should be delivering

the environmental goods to people, these same managers and administrators will be able to achieve the results their leaders call for.

Whether EIA can change the decision-making process to promote a new form of environmental management and better environmental protection depends upon how the government implements it and the system it adopts to ensure that the procedure will be followed.

In this regard, the effectiveness of various strategies to implement environmental impact assessment is open to serious question.

2. THE CANADIAN FEDERAL ENVIRONMENTAL ASSESSMENT AND REVIEW PROCESS

The Federal Environmental Assessment and Review Process (EARP) was established in 1973. Its creation grew out of the recognition that the response of the Canadian government to growing environmental problems was seriously deficient. Many federal agencies perceived the environment narrowly and did not see it as part of their mandate. As a result, these agencies were improperly organized to deal effectively with the environmental issues that resulted from their actions and the environment was not taken into account in their decision-making process. Generally, environmental concerns had little influence in determining where, when or if a project, program or policy would be undertaken.

BASIC FEATURES AND STEPS

The Canadian federal approach towards EIA was influenced by experiences in other countries and, in particular, the United States. EIA, as explicit public policy, first appeared in the U.S. *National Environmental* Policy *Act* (NEPA) of 1970. NEPA sets clear environmental goals for U.S. federal agencies and requires these agencies submit detailed EIAs for proposed activities that could significantly affect the environment and alternatives. NEPA also established the Council on Environmental Quality (CEQ) as an agency to review these submitted EIAs.

EIA was not taken up by the Canadian federal government until three years after the introduction of NEPA. The evolution of the Canadian federal government's EIA policy began gradually with the report of an Environment Canada Task Force (1972). The report examined EIA experiences in other countries with an emphasis on the development and operation of NEPA. The NEPA legislation was considered too contender-oriented (Wolf 1981). As a result, instead of taking the legislative approach that NEPA had taken, the Canadian federal government took an administrative approach when it created EARP. The Minister of the Environment discussed the government's adoption of an administrative rather than legalistic procedure in the House of Commons (1974):

> I *hope, in the process, that we can avoid the delays and other pitfalls which a strictly legalistic approach would cause in this country. We will not hold up important developments which are clean from an environmental point of view and, in contrast to the situation which has developed in the United States, we will not bring the environmental assessment process into disrepute. We will not be charged with blocking everything.*

EARP's procedures were to have enough scope to allow the adjustment of the process to fit the context so that the procedures would continually evolve.

The purpose of EARP is to implement the federal government's policy on EIA and to incorporate environmental and related social factors into federal government planning and decision making. The 1973 directive established the process to ensure that all federal government departments and agencies (Rees 1981):

- *take environmental matters into account throughout the planning and implementation of projects, programs and activities initiated by the department or agency, or for which federal funds are solicited or for which federal property is required;*
- *undertake or procure an assessment of potential environmental effects on time before commitments or irrevocable decisions are made for all projects which may have an adverse effect on the environment;*
- *submit the assessments made for all projects that will have a significant effect on the environment to the Department of the Environment for review;*
- *incorporate the results of environmental assessments and reviews in the design, construction, implementation and operation of projects, giving environmentalproblems the same degree of consideration as that given to economic, social, engineering and other concerns.*

All departments and agencies of the Government of Canada have the responsibility to apply EARP. EARP applies to any proposal (FEAR0 1986):

- *to be undertaken directly by an initiating department, for example, an extension of an existing airport runway by Transport Canada;*
- *that may have an environmental effect on an area of federal responsibility, for example, a hydroelectric power generation project with potential to flood national park lands;*

- *for which the Government of Canada makes a financial commitment, for example, in railway relocation projects in some urban centres partially funded by Transport Canada;*

- *that is located on lands, including the offshore, that are administered by the Government of Canada, such as the National Parks.*

Then-Minister of the Environment, the Honourable Jack Davis, announced that a four-stage procedure would be developed. The four stages were (Lucas and McCallum 1975):

1. A preliminary environmental assessment to determine whether a further detailed assessment is required. If not, then the action would proceed with no other formal assessment requirements.

2. A detailed assessment of all potential physical, biological, social and economic effects of the proposed action, in both the short and the long term, including careful study of alternatives.

3. *Monitoring at the project development stage to allow early identification of impacts so that modifications in design and construction can be made to reduce or avoid such impacts.*

4. A post-construction "audit" to determine whether the effects of the project were as predicted.

The interdepartmental committee of Environment Canada (1974) set forth a proposal for implementing EARP. The stated aims of the procedure are (FEAR0 1987):

- *to leave the management of environmental assessment and review in the hands of the proponent in order to avoid delay and division of decision making responsibility;*

- *to provide an arms-length system of review advice and expertise; and*

- *to inform the public, and where appropriate, to involve the public in decision making.*

EARP relies on three basic principles (FEAR0 1987):

Principle 1 - EARP as a Planning Tool: *EARP is a planning tool rather than a regulatory process, It is a useful means of identifying potential environmental impacts before they occur, determining suitable mitigation and altering or abandoning the proposal if the major effects cannot be mitigated. Both initial assessment and public review should occur early in the planning stages so changes can still be made to the design. When a project is submitted to public review, it is not necessarily a more developed proposal.*

Principle 2 - Self-Assessment: *Self-assessment means each department is responsible for making the environmental decisions about the proposal that it has decision-making authority over.*

Principle 3 - Public Involvement: *This process emphasizes public involvement. Informa tion regarding decisions made during initial assessment should be readily available to the public, as should opportunities to respond to the proposal. All information gathered during the public review is also open to public review.*

On June 22, 1984 the Government of Canada promulgated the *Environmental Assessment and Review Process Guidelines Order* which changed the authoritative basis of EARP from a Cabinet directive to an Order-in-Council. The change was taken to demonstrate a stronger commitment by the government towards EARP and to ensure that all federal departments apply EARP consistently to all proposals for which they are responsible. The Minister of the Environment has the authority under Part III of the 1979 *Government Organization Act* to develop guidelines through such an Order-in-Council. The Order-in-Council produced guidelines respecting the implementation of EARP which reaffirm its three aforementioned basic principles.

Although EARP is continually being modified, it has nine principle steps. These main steps, as highlighted by FEAR0 (1986), are:

STEP 1 - PROJECT PROPOSAL: *The Process commences when a proposal for a project, program or activity is identified in an initiating department's work program. The proposal should be sufficiently developed to identify an initial list of environmental issues and the alternatives and to identify most of the affected parties. If environmental considerations are properly integrated into the planning process, very few projects will be delayed for environmental reasons. In other words, environmental assessment is not separate from other project planning activities.*

STEP 2 - SCREENING: *The proposal undergoes screening; a systematic, documented assessment*

of the environmental implications of a proposal including the significance of adverse environmental consequences. Proper note should be made of environmental factors which may have an impact on the project. This is particularly important where these factors cause conditions requiring special operating or construction procedures related, for example, to human safety and working conditions. Screening determines the need to mitigate environmental impacts or to carry out modifications to the project plan to reduce impacts or the need for further investigation.

Experience shows that, when many initiating departments carry out screening, the project manager uses the Guide to Environmental Screening (FEAR0 1978) and obtains technical advice from departments such as Environment Canada and Fisheries and Oceans Canada.

STEP 3 - FURTHER INVESTIGATION: *Proposals which have passed the screening stage and have not been referred for public review by a Panel or approved for implementation with further study undergo further investigation. This step entails a documented assessment of the potential environmental impacts of a proposal. It also requires that further study be done to provide information on the nature, extent and significance of impacts and the efficacy of known mitigation measures. The results of further investigation are usually recorded* in *a document that, since 1976, has been called an Initial Environmental Evaluation (IEE).*

Documentation of results in the IEE also varies widely, from short reports to volumes of 100 pages or more. The size and format will continue to be left to the judgment of initiating departments. However, the main objective remains unchanged; that is, to establish the significance of potentially adverse environmen tal effects, to identify useful mitigative measures from existing technology and to report these results and the related decision on the project in a clear concise manner suitable for public scrutiny.

As a result of further investigation decision-makers will make one of three documented decisions:

1. Effects are understood and can be mitigated; the project therefore may proceed with prescribed mitigation and monitoring measures;

2. Effects or public concern or both are significant and a public review by a Panel is therefore warranted, in which case the proposal is referred to the Minister of the Environment for such a review (Section 13, Order-in-Council).

3. Effects are significant and unacceptable, in which case the proposal must either be modified, and subsequently rescreened, or abandoned.

These initial assessment decisions will be published regularly in a bulletin issued by FEARO. This bulletin will cover decisions made at the screening stage or after additional investigations have been completed. The record will consist of information on proposals forwarded by initiating departments. In this way, government and non-government agencies and other interested parties can be assured that the Process is being implemented.

STEP 4 - PANEL REVIEW: *For proposals warranting such action, the Minister of the initiating department refers the proposal to the Minister of the Environment for review by a Panel. The Panel is normally chaired by the Executive Chairman of FEAR0 or his delegate and is appointed by the Minister of the Environment who issues the Panel with terms of reference after consultation with the Minister of the initiating department.*

STEP 5 - ENVIRONMENTAL ASSESSMENT: *Environmental assessment documents are prepared. Depending upon the nature of the review, these may include guidelines for the preparation of an environmental impact statement (EIS) by the project proponent or, in some cases, by the initiating department. Panels usually seek public comment on EIS guidelines before they are finalized.*

STEP 6 - PUBLIC REVIEW: *Once the environmental assessment documents are completed, the public review of the EIS is carried out. If deficiencies are identified, then the proponent is asked to address them in writing before public hearings are held. Then the Panel holds public hearings on the EIS.*

STEP 7 - PANEL REPORT: *The Panel prepares a report on the review for the Ministers of the Environment and the initiating department. The report is usually a description of the impacts of the proposal with recommendations on how to address these impacts.*

STEP 8 - RELEASE OF REPORT: *The two Ministers make the Panel report public.*

STEP 9 - MINISTERIAL DECISION: *The Minister for the initiating department will determine the manner in which the decisions taken will be made public (Section 33(e), Order-in-Council).*

These nine main steps of the process make up the three stages of EARP: **Screening, Initial Environmental Evaluation** and **Environmental Impact Study. (See Figure 1.** The Environmental Assessment and Review Process.)

The initial assessment phase of EARP comprises the first two stages, screening and initial environmental evaluation. initial evaluation requires the assessment of a project's potential impact upon the biological, physical and social environments. The evaluation requires information on the proposed project and the environmental and social components potentially affected. The evaluation enables the decision-maker of the initiating department to determine whether, and the extent to which, there may be any potentially adverse environmental effects from the proposal. Based on this assessment, environmental implications can be fully considered early in the planning process. Decisions can then be made as to how the project should proceed, if it should proceed at all or if the project should be referred to Environment Canada for formal review.

The third stage of the process is a formal review of projects considered on the basis of departmental self-assessment to have potentially significant environmental impacts. This review will involve the preparation of environmental impact statement (EIS) guidelines by the Environmental Assessment Panel specially established for the project. The proponent prepares the EIS. The panel reviews and makes available to the public (at the Minister's discretion) the environmental impact study.

THE CONCEPT OF SELF-ASSESSMENT

The introduction of environmental impact assessment demanded changes in approaches that agencies have traditionally taken to planning and decision making. The EIA process, however, does not fit easily into the structure of government for the following reasons (McCallum *1975) :*

1. It is not a regulatory device to be carried out by one department; it is a decision-making model to be utilized by all departments.

2. Because it is a model for decision making, it is unlike customary discretionary powers and duties conferred on departments. The model has been developed because of a desideratum in decision making; it is not a grant of a power but a mode of regulating existing powers.

3. It is new; it reflects new concerns, recognizing new interests and values. Its purpose is to alter traditional norms.

Thus, the hoped-for change has been slow in coming. This section of the paper will focus upon the initial assessment phase of EARP for it is this phase more than any other which addresses the need for, and difficulty of, attaining effective procedural reform.

EARP was established to ensure that all federal projects are screened for environmental impacts. While EARP procedures require explicit consideration of environmental issues, the proponent enjoys an extraordinary degree of autonomy in screening, conducting initial evaluations and carrying out EIAs. Little public or inter-departmental review of decisions occurs in the process (Armour 1982b).

The two front-end stages of EARP involve self-assessment by the federal department initiating the project. Every initiating department is responsible for ensuring that each proposal, for which it is the decision-making authority, is subjected to an environmental screening and, if necessary, an initial environmental assessment. The initiating department first determines whether the project is apt to have *significant* environmental effects. The department then decides the *significance* of the environmental and directly related social impacts of proposed undertakings. Finally, the initiating department determines the need for an environmental impact study on a case-by-case basis.

Using the *rule-of-reason,* government departments screen their projects to determine if an in-depth formal review is required. Consequently, a full environmental assessment is done only if the proponent department decides to subject the project to EARP (Lang and Armour 1980).

The process, as it stands, allows proponent agencies the power to screen out projects which they initiate from the environmental assessment process. This self-exemption decision is one that is made within the proponent agency and therefore, the agency is not directly accountable to the public. There is no legal requirement to conduct detailed environmental studies. The proponent alone decides whether the project will require further environmental assessment. Critics of EARP have frequently argued that far too many projects have been screened out at an early stage thus escaping an environmental review.

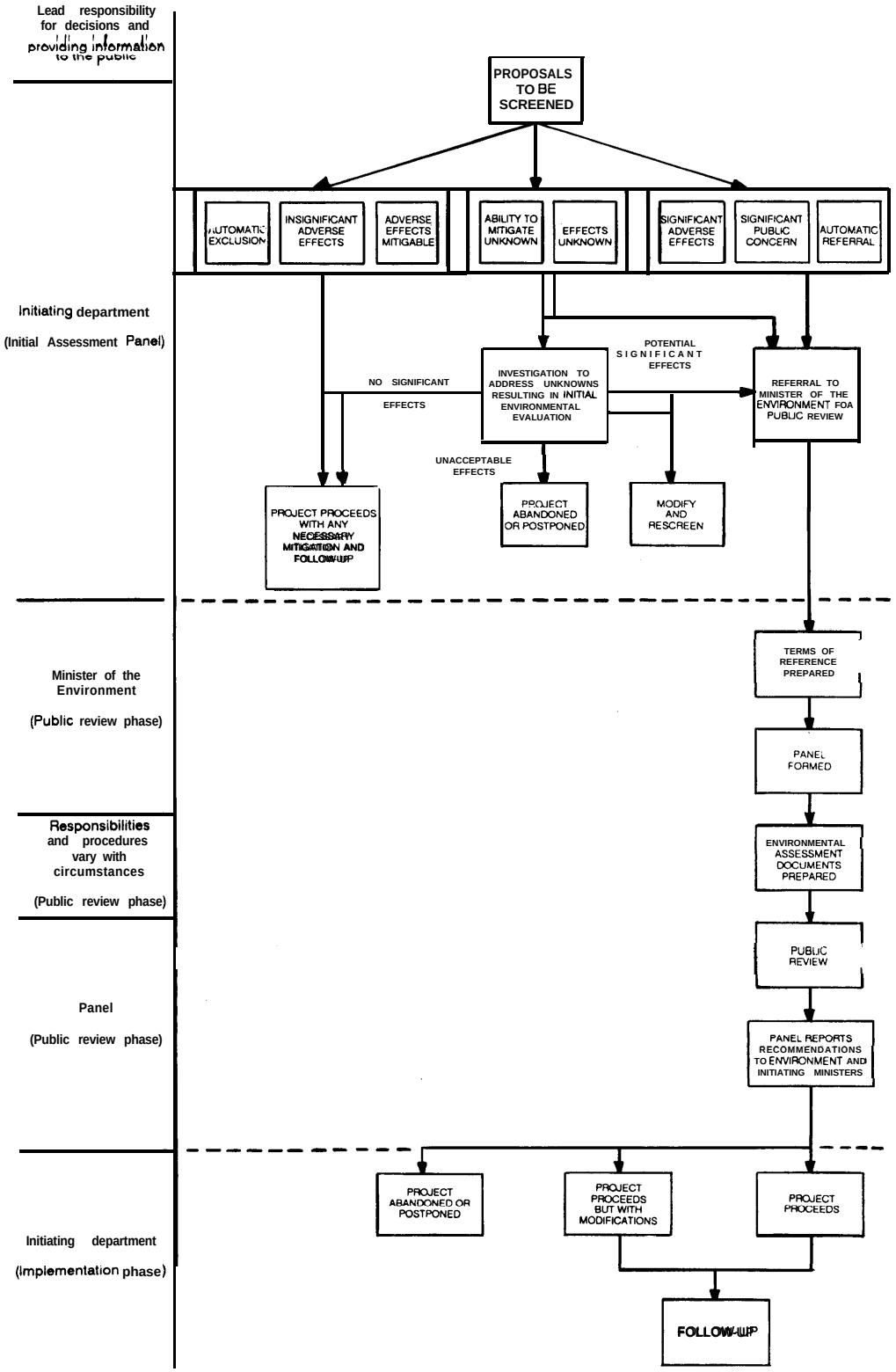

Figure 1. The Environmental Assessment and Review Process (FEAR0 1986).

There is no legal requirement or government agency with the power to require the initiating department to subject a project EARP. EARP has no independent watchdog comparable to the United States' CEQ. The Environmental Assessment Panels become involved only when the project requires full EIA formal study. With respect to FEARO, John Herity (Director General, Process Development and Evaluation Directorate, FEARO) (1981) states that:

> *FEARO's role with respect to this front-end self-assessment phase of EARP is to ensure that it is done. In effect, we audit the performance of the government agencies and keep track of the number of projects that get screened. Our auditing does not involve a technical review of the decision made. For this, we rely as do other government agencies on the expertise available within the federal Department of the Environment.*

Similarly, there is no legal requirement or government agency with the power to ensure that the mitigative measures identified in the screening, initial environmental evaluation or impact study are actually undertaken. The initiating department has considerable discretionary power to ensure that appropriate mitigation measures are implemented and that these measures are effective.

The basic principle of public involvement in EARP has undergone critical review. FEAR0 (1987) recognizes the need for public participation in environmental impact assessment so as to make it an effective decision-making tool. However, EARP is largely an internal process with little public involvement. The lack of public participation in the screening process and initial assessment of EARP has been greatly criticized (Beanlands and Duinker 1983; Lang and Armour 1977). The public can be left uninvolved and uninformed until presented with an EIA document (if a project even reaches that stage in EARP). By this point, the initiating department is in the final stages of the planning and review process.

EARP's policy/administrative approach to EIA assumes that, since all decisions in the process ultimately rest with the Minister and Cabinet, these individuals are accountable and responsible to the electorate. This tradition of ministerial responsibility and accountability is extended to the public officials in administrative agencies who have been delegated responsibilities and are held accountable to the Minister (Couch 1981; Berger 1977). Mauer (1979) points out that administrative agencies make important decisions but possess a relative lack of political accountability. The potential of EARP, as an approach to environmental protection, therefore, rests almost entirely on the willingness of proponent agencies to adhere to its intent. This factor has been the main weakness in the federal government's approach to EIA.

EARP is founded upon the basic principle of *self-assessment.* John Herity (1981) states that, in his view:

> *this self-assessment phase is one of the most important aspects of EARP because it ensures that the impacts of the thousands of smaller and generally routine projects carried out by federal government departments are also taken into consideration, that environment attention is not given just to the large-scale projects.*

The concept of self-assessment was adopted in EARP so as to create greater flexibility and capacity to respond to accumulating experience. It aims to include environmental concerns in the initial decision making of the project before commitments or irrevocable decisions are made. As a result, the cost, administrative dislocation and delay from imposing unwelcomed regulations can be avoided (Couch, Herity and Munn 1981).

The rationale for self-assessment, taken at face value, is strong and perhaps explains the fact that the concept continues to hold a prominent place in EARP. The 1984 Order-in-Council guidelines suggest a move in *the direction of formatization, although arguably the move is a small one* (Hunt, Ronthwaite and Saunders in Sadler 1985). Despite several changes that came with the 1984 directive, EARP continues to operate on the principle that the initiating department shall ensure that each proposal, for which it is the decision-making authority, is subjected to an initial assessment (FEAR0 1986). Many are beginning to question, however, the efficacy of continued adherence to this notion of self-assessment, and the flexibility that it brings, and whether it should be the cornerstone of the federal process. The concept is beginning to receive the critical scrutiny it warrants.

THE PROBLEM WITH INITIAL ASSESSMENT

Until recently there had been very few comprehensive evaluations of the screening and initial assessment phases of EARP. A significant amount of literature does, however, exist that reviews and evaluates environmental assessment documents and panel hearings of the formal review stage of the process. This is understandable: this stage is the most visible phase of EARP. It is, however, only the tip of the process iceberg. The majority of federal projects proceed after only screening and initial assessment. FEAR0 estimates that for every 1,000 projects that are screened, 100 move ahead for further impact study and only one project may go to full public review (FEAR0

1986). Only if a project will have *significant* adverse environmental effects will it proceed through the public, formal hearing stage of the process. According to Environment Canada (1987), the majority of federal projects proceed after only an initial assessment (See **Figure 2.** Initial Assessment Proposals). FEARO's September 1987 *Register of Panel Projects* indicates that only **32** Panel Reports have been completed to date.

The tremendous reliance that has been placed on the initial assessment stages of EARP and the growing criticisms regarding its effectiveness have prompted several evaluations of this part of the process. A FEARO/Regional Screening Co-ordinating Committee EARP Workshop was held on May **14, 1984.** This workshop focused solely upon the initial assessment stage of EARP. The objectives of the workshop were:

- *to outline the need for a revised screening and initial assessment guide;*
- *to review and discuss the draft table of contents for the guide;*
- *to review and discuss the experiences of federal government departments with screening and initial assessment of projects/programs/activities; and*
- *to identify workshop participants who would be interested in continuing to participate in the development of the revised guide.*

In reviewing the initial assessment stage of EARP, the workshop identified several documents that had reviewed the initial assessment stage. The summary of the workshop mentions:

- *a Cabinet submission forwarded by FEAR0 indicating that improvements were necessary at the "front-end" of the environmental assessment process;*
- *an Environment Canada evaluation study which focused upon the performance of government departments in meeting the requirements of EARP; and*
- *an Interim Discussion Paper by Tim Raistrick of the Environmental Protection Service (Ottawa) of Environment Canada.*

Cabinet Review

A discussion paper sponsored by then-Minister of the Environment, the Honourable Charles Caccia, was submitted to Cabinet on April 12, 1984. The paper reviewed the operation of EARP and identified possible approaches for improving its effectiveness and public credibility. It identified the initial assessment stage of EARP as one of the main areas requiring improvement. The paper emphasized that, because of the rather loose framework of policy direction, the initial screening phase of EARP is not a well-structured, documentable process consistently applied across the government thereby raising serious questions about the credibility of the *invisible* self-assessment process.

This discussion paper identifies a recent evaluation conducted in accordance with a Cabinet directive. This evaluation revealed that screening systems were *ad hoc* and seemingly inconsistent. Screening was often undertaken without documentation of a type suitable for public scrutiny and with little provision for public discussion and involvement, or for assessing the environmentally related social implications of major projects as a means of determining the significance of their potential effects. The paper states that, although there is no evidence that the spirit of EARP is not being applied in most departments, it is difficult to document. Therefore, it is equally difficult to ensure consistency and to publicly demonstrate the effectiveness of the EIA processes.

According to the discussion paper, the procedural deficiencies identified in the recent evaluation have eroded public confidence in the operation of the process. Furthermore, there may be grounds for substantive concern over the quality of decision making. The Cabinet submission argues that, although project design and planning have generally improved under EARP, *the looseness of the system means that individual projects with potentially significant environmental impacts could have escaped referral for public review or failed to have been redesigned to mitigate adverse effects.*

The discussion paper emphasizes that the present system is a poor example of administrative practice because its application varies from program to program and is often difficult to document thereby reducing accountability. However, the paper also argues that several government departments consider the initial assessment phase, in its present form, to be working reasonably well. It concludes that, taking these differing views into consideration, there is scope for limited improvements in the process through the co-operation of participating agencies. The paper points out that, although FEAR0 was

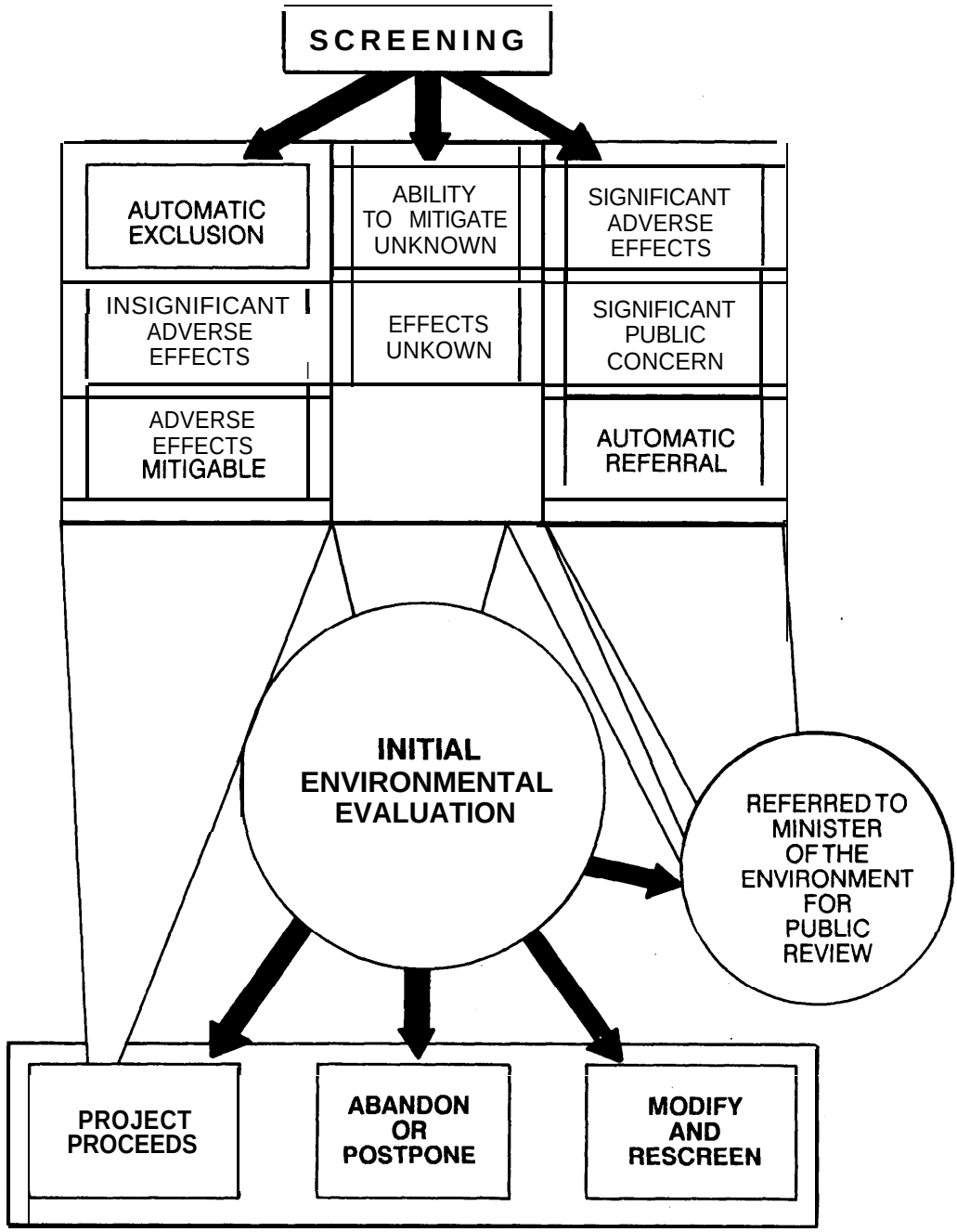

Figure 2. Initial Assessment Proposals.

was preparing new screening guidelines with more explicit criteria for determining the significance of environmental impacts and thresholds for project referral, such guidelines will not be sufficient to correct the deficiencies highlighted in the Cabinet submission and in the evaluation report.

Environment Canada's Evaluation

This evaluation report, entitled *Evaluation Study: Program Evaluation of the Federal Environmental Assessment and Review Process (EARP) as of June* 30, 7982 was co-ordinated by Environment Canada's Planning and Evaluation Directorate and undertaken by teams of independent consultants. The consultant teams had three months to complete the study. They examined the effectiveness of the implementation of EARP and identified those parts of EARP where more effective approaches should be considered. They did not focus upon the public review phase of EARP because that phase had been under continuous evaluation and review in many other studies.

Each independent consultant team prepared a report of its findings. Environment Canada prepared a public annex summarizing the reports. The annex states that it accurately reflects *the availability of information and extent of systemization of the initial assessment phase of EARP in government departments at the date it was written.* The annex acknowledges that procedural improvements may have been initiated in certain departments since that date.

The study covered a sample of six departments selected for the importance of EARP in their programs:

- **Energy, Mines and Resources Canada:** Environmental Protection Branch of COGLA and Off ice of Environmental Affairs.
- **Environment Canada:** Environmental Services and Parks Canada.
- **Indian and Northern Affairs Canada:** Indian and Inuit Affairs and Northern Affairs Program.
- **National Defence Canada:** Single System.
- **Public Works Canada:** Single System.
- **Transport Canada:** Canadian Air Transportation Administration, Canadian Marine Transportation Administration and Canadian Surface Transportation Administration.

The annex noted that departments are definitely undertaking environmental assessments. However, it also stated that, on the basis of the reports on the six sample departments, there has been *only* a *verylimitedresponse to the Cabinet decisions in 1973 and 1977 which directed that an EARP be established within the federal government.* In addition, the study found that in only a very few cases are the departments doing it well. The Canadian Air Transportation Administration (CATA) was considered one of the few departments doing environmental assessment well but the annex also noted that because of *departmental mandates,* CATA *would be carrying out reviews whether EARP existed or not.*

According to the annex, while departments are undertaking environmental assessment and pieces of EARP systems are in place, no formal, functioning, integrated system exists. In reviewing the reports of the six departments, the annex found that, of the eleven programs, only CATA's met the main requirements of EARP. Four of the eleven programs had partial systems and the remaining six were found to have no formal EARP at all.

The study teams found that, with the exception of CATA, there was a general lack of EARP documentation. Most existing systems provide no evidence that any form of screening has taken place. The annex found that six of the eleven systems examined had almost no formal criteria, guidelines, policies or procedures regarding environmental screening. Only the system employed by CATA was adequate in this regard.

The study teams also found that, in most cases, the departments carried out screening only for capital projects. Eight of the eleven programs gave little or no consideration to social and economic impacts of activities. Guidelines and criteria associated with social and economic effects were not well developed and expert advice was not readily available.

The CATA study, entitled *Department of Environment - the Environmental Assessment and Review Process in the Department of Transport - June 30, 1982,* was prepared by Currie, Coopers and Lybrand Ltd. (1983). The purpose of this study team's project was to examine and report on the effectiveness of the implementation of EARP in the Department of Transport. To undertake the study, the consultant team:

- interviewed department staff who are associated with EARP or who, because of the nature of their responsibilities, would be expected to be associated with the process;
- reviewed documentation associated with EARP

or, where there was no such documentation, examined the available project documentation that addressed environmental issues;

- examined any general departmental documents dealing with the environment and environmental issues that were referred to the study team; and

- selected a sample of projects and reviewed them to establish an awareness of the extent to which process documentation for each project had been completed.

In addition to CATA, the study team examined the Canadian Marine Transportation Administration (CMTA) and the Canadian Surface Transportation Administration (CSTA). The study team found that CATA had developed a comprehensive series of policy and guideline documents. The study team concluded that CATA's environmental assessment process was effective, primarily because it had been integrated with CATA's planning and management systems thereby enhancing compliance. Since CATA had integrated EARP into its planning and budgetary systems, rather than setting it up as a separate process, the study concluded that CATA had *a very sound process which deals with environmental concerns and impact even though CATA does not have staff devoted solely to the EARP process*. The study also concluded that environmental protection is a major concern throughout CATA planning, design, construction and operation and that CATA starts environmental assessment in the vast majority of cases in the early planning stage.

The Raistrick Report

The draft Environment Canada study referred to in the FEARO/RSCC EARP workshop (May 1984) was prepared by Tim Raistrick in 1984. The study, finalized in May 1987, was entitled *Initial Environmental Assessment at Environment Canada - A Discussion Paper with Recommendation for Environment Canada* (Report EPS 8/FA/1). The study was undertaken because of concerns which had been raised inside and outside the government about the quality and effectiveness of initial assessments. The study examined the status of initial assessments of federal projects, described and identified exemplary initial assessments and their respective departments and showed what Environment Canada can learn from these examples to improve the quality of its own initial assessments. The ultimate objective of the study was to improve Environment Canada's initial assessment procedures.

The study used two approaches to determine which federal departments were conducting exemplary initial assessments: an **objective approach** involving a literature review and a **subjective approach** involving peer review.

In order to evaluate initial assessment procedures and identify exemplary initial assessment, the study used a list of criteria. To develop that list, the author compared information from the literature review and the impact assessment practitioners with the requirements of the government documents for initial assessments.

The criteria for a thorough initial assessment, as identified by Environment Canada (1987) are:

- **Brief description of project:** *justification for the project, preferred location and alternatives, estimated cost, duration of construction and operation and frequency of project.*

- **Screening:** *definition of "significant", assessment methods used, environmental changes predicted from the project, criteria for making assessment decisions, mitigative measures to be employed, environmental changes predicted if mitigative measures are taken and monitoring or follow-up studies.*

- **Decision:** *rationale for decision and decision and signature* .

The criteria were designed to apply to all projects regardless of size. However, the Environment Canada study found that there was a lack of consistency in the type, quality and depth of initial assessment done by the federal government departments. Initial assessments were found to vary from being entirely omitted to being a detailed report.

The study indicated that three federal departments had exemplary initial assessment, including CATA. The study briefly described CATA's environmental impact assessment procedures, based on CATA's manual *Environmental Protection: Planning - Southern Canada* and discussions with CATA personnel. The study notes that CATA uses the terms *screening* and *initial environmental evaluation* in a way that differs dramatically from their use in most other federal departments. Screening at CATA is similar to prescreening in other government departments; an initial environmental evaluation in CATA is approximately equivalent to a screening report in other departments.

The study concluded that CATA's manuals have enabled CATA staff to consistently perform admirable initial assessments for all projects and that the matrix system described in the manuals is similar to the one described in the EPS-FEAR0 (1978) document. The CATA manuals indicate that the results of these assessments are taken into account in the planning, design, construction and operation of facilities and are given the same degree of consideration as economic, social, engineering and other concerns. The study concludes that the implementation of initial assessment results is guaranteed by the CATA requirement that the mitigative measures and environmental study plans outlined in the assessment report be included in the contract for developing the project.

In addition, the study indicates that the methods used for initial assessment may not be the key factor in ensuring a good impact assessment. Instead, how the method fits into the overall management and administration of the department is more important. The study states three reasons why CATA's initial assessments are successful:

1. *CATA allows sufficient lead time to assess a project.*

2. *An active and visible office within CATA exists which, among other duties, reviews all initial assessments.*

3. *There exists a CATA project approval process which requires that an initial assessment be prepared and guarantees that the results will be implemented.*

The study concludes that. on the basis of the G A T A manuals and interviews with CATA staff, there is an effectiveform of quality control built into the system. The study identified only two shortcomings in the CATA system:

1. Operation and maintenance activities are not considered for initial assessment.

2. CATA completed very little follow-up work once projects were completed.

CATA: AN EXEMPLARY APPROACH?

Overall, the three documents just discussed reveal some serious problems with agency compliance with the intent of the Cabinet Directive that established EARP. On the basis of a comparative analysis, only one federal department appeared to be serious in its approach to initial environmental assessment. Both of the Environment Canada studies, Program *Evaluation of the Federal Environmental Assessment and Review Process (EARP) as of June 30, 1982* and *Initial Assessment Stages of the Environmental Assessment and Review Process: A Discussion Paper with Recommendations for Environment Canada* (1984), identified CATA as one of the best of the federal government departments who are implementing the initial assessment stages of EARP.

For this reason, CATA's approach warrants a much closer look. Compared to what other federal government departments are doing, CATA's initial assessment process stands out, but taken on its own and evaluated in terms of its effectiveness in achieving the intent of EARP, how "exemplary' is it?

3. CATA: ONE OF THE BEST FEDERAL GOVERNMENT DEPARTMENTS?

THE CANADIAN AIR TRANSPORTATION ADMINISTRATION (CATA)

At the federal level, Transport Canada is responsible for all forms of transportation in Canada. In this capacity, Transport Canada (1982) must attend to *the development and operation of a safe and efficient national transportation system that contributes to the achievement of government objectives and to operate specific elements of this system.*

Transport Canada's structure includes a headquarters organization, three operating administrations (air, marine and surface transportation) and a number of crown corporations with varying degrees of autonomy (Transport Canada TP 2491).

CATA administers Part 1 of the *Aeronautics Act*. Its basic objective (Transport Canada 1982) is, *on a cost-recoverable basis to the maximum practicable extent, to provide safe and efficient facilities and services for the support of aeronautics consistent with the protection of the environment.*

More specifically, CATA is responsible for (Transport Canada 1984a):

- *providing and operating Canadian and domestic airway facilities and a national air terminal system;*
- *providing air traffic control service, air navigational services and telecommunications and electronic systems;*
- *licensing aviation personnel and commercial operators and certifying airworthiness of aircraft;*
- *developing policies for the economic regulation of domestic and international air services; and*
- *negotiating international air transport agreements.*

In the CATA Objectives Document, the CATA Organization Air Program Activities are categorized and described as follows (Transport Canada 1982):

AIRPORTS AND ASSOCIATED GROUND SERVICES: *Development, construction, operation and maintenance of civil airports and seaplane docking facilities owned or controlled by Transport Canada, excluding those which are designated as self-supporting. (For convenience, Treasury Board treats self-supporting airports as a separate activity even though the substance of the activity and related sub-activities is identical to Airports and Associated Ground Services).*

SELF-SUPPORTING AIRPORTS AND ASSOCIATED GROUND SERVICES: *Development, construction, operation and maintenance of self-supporting civil airports owned or controlled by Transport Canada which include Montreal (Dotval and Mirabel), Toronto and Vancouver International Airports.*

AIR NAVIGATIONAL SERVICES: *Designation of channels for the passage of aircraft, determination of their associated facilities and development of related standards; inspection of the air space involved including the purchase and operation of aircraft used primarily for calibration of navigational aids and the inspection of runways and maneuvering areas; design, construction, installation, operation and maintenance of telecommunications and electronic facilities; provision of an air traffic control system for Canada and in the international airspace for which Canada has accepted responsibility through I. C.A.O.; provision of those meteorological services required in support of aeronautics.*

REGULATORY: *Development and enforcement of aeronautics legislation, standards and procedures; the inspection, examination, licensing and certification of aviation personnel, commercial operators and aircraft; surveillance of aircraft used primarily for inspection and those used to provide transportation for visiting foreign dignitaries and senior members of government.*

ADMINISTRATION: *The office of the Administrator, Canadian Air Transportation Administration, his functional support staff and regional administration.*

In addition to airports owned and operated by Transport Canada, some airports are operated by others (mainly municipalities) and receive capital and operating subsidies. During 1982-83, the Financial Assistance Program provided $13,906,000 for the operation of municipal and other airports (Transport Canada 1984a). CATA also provides capital grants to help in the construc-

tion of smaller community airports. Under the Financial Assistance Program, capital funding of $9309,300 was made available to assist in establishing or improving municipal, local, local commercial and other airports (Transport Canada 1984a).

CATA is a decentralized operation. It has implemented an organizational and management philosophy through a central headquarters providing national direction with respect to objectives, policies, plans, priorities, standards and programs, and six regional offices with operational responsibility (Transport Canada 1984a). The six regional offices are located in Vancouver (Pacific Region), Edmonton (Western Region), Winnipeg (Central Region), Toronto (Ontario Region), Montreal (Quebec Region) and Moncton (Atlantic Region). Each of the regions has a regional administrator who is responsible for the achievement of the CATA objectives within their regions in accordance with national plans, policies, procedures, standards and priorities (Transport Canada 1982).

To make the study manageable, only the Ontario Region was selected for detailed review. CATA's administration for the Ontario Region lies completely within the political boundaries of the Province of Ontario, save for an area lying west of the 88th parallel which is under the control of the Airport Authority Group (Central Region). The region's major airports are:

- **OWNED AND OPERATED BY CATA:** Earlton, Gore Bay, Kapuskasing, London, Muskoka, North Bay, Sault Ste. Marie, Timmins, Wiarton and Windsor.
- **OWNED AND OPERATED UNDER CONTRACT BY CATA:** Sarnia.
- **OWNED AND SUBSIDIZED BY CATA:** Hamilton and Sudbury.
- **NOT OWNED BUT SUBSIDIZED BY CATA:** Pembroke, Moosonee and Toronto Island.
- **OWNED BUT NOT SUBSIDIZED BY CATA:** Bonnechere, Carp, Emsdale, Gananoque, Oshawa and St. Catherines.

On October 15, 1985, CATA was dissolved and a recent re-organization has created two separate organizations: Transport Canada's Aviation Group and Airports Authority Group. The Aviation Group is responsible for ensuring a safe and secure national civil air transportation system and attending to the development of the national civil air navigation system (Transport Canada 1987). The Airports Authority Group is responsible for providing and operating 205 Canadian airports (through either ownership or financial assistance) with a mandate to (Transport Canada 1987):

- *operate the airports system in a safe and efficient manner;*
- *develop a more commercially oriented and financial/y self-sustaining airports system; and*
- *provide increased scope for local community involvement.*

Initial changes to the management structure of the Airports Authority Group were made early in 1986 and again in 1987. This paper will focus upon CATA and the EIA process that existed before these organizational changes. It will not reflect the changes after the period of re-organization, the Airports Authority Group, or any EIA procedural improvement subsequently initiated.

ENVIRONMENTAL IMPACTS ASSOCIATED WITH AIRPORT ACTIVITIES

Efficient transport systems are an essential part of our society. However, they can also be a major source of disturbance (Edington and Edington 1977). Previous transportation planning has been described as follows (Project Committee on Urban Transportation Planning, Roads and Transportation Association of Canada 1977):

> *It has often been conventional practice to regard the planning of transportation facilities as a closed process of matching supply capacities with demand levels, as with water, power and other services. This approach has proved seriously deficient by ignoring the social and environmental impacts of transportation facilities. Such impacts represent major community costs and consequences that cannot be by-passed in the decision-making process.*

Widespread public disenchantment and distrust of transportation planning decisions have resulted *where planners have failed to account for, or mitigate the impacts of, transportation developments upon the community* and *in the failure of authorities in the past to* include public participation in *the* planning *process* (Project Committee on Urban Transportation Planning, Roads and Transportation Association of Canada 1977).

Airports threaten to disturb an area's environmental quality at all stages of development. There are basically three stages of airport development, each typically having certain associated activities:

SITE PREPARATION: Surveying; vegetation clearing, stumping and grubbing; debris disposal; herbicide application; site access roads; temporary drainage; and establishment of construction facilities.

CONSTRUCTION: Excavation; blasting; stripping and dredging; grading; filling operations; hauling; drainage alteration; pavement operations; concrete operations; construction of buildings; installation of storage tanks; sod and landscape operations; and clean-up and disposal of waste.

OPERATIONS: Aircraft movements, engine maintenance run-up, refuelling, de-icing, painting and cleaning operations; vehicle movements and parking; boilers and incinerators; firefighting; dust control; snow and ice control; sewage and waste disposal; drainage run-off; vegetation clearing and herbicide and pest control.

Areas of potential environmental impact associated with these activities include:

PHYSICAL-CHEMICAL EFFECTS:

- **GROUND WATER:** water quality changes, water quantity changes, flow and water-table alteration and interaction with surface drainage.
- **SURFACE WATER:** water quality changes, water quantity changes, drainage patterns, flow variation and flood characteristics.
- LAND: soil erosion, flood plain usage, soil suitability, compatibility of land uses, terrain sensitivity and unique physical features.
- ATMOSPHERE: air quality.
- **NOISE:** intensity, duration and repetition.

ECOLOGICAL EFFECTS:

- SPECIES AND POPULATIONS: terrestrial vegetation and wildlife (including waterfowl) and aquatic life and fish.
- HABITATS AND COMMUNITIES: terrestrial and aquatic habitats and communities.
- BIOLOGICALLY SIGNIFICANT: unique vegetation, wetlands, migratory bird habitat and unusual or rare species.

AESTHETIC EFFECTS:

- land, atmosphere, water, biota, man-made objects and composition.

SOCIAL IMPACTS:

- employment, land use and population characteristics.

Obvious impacts associated with airport development include those at the airport site. However, an airport's impact is not limited to airport property. Noise associated with airport operations is one of the most prominent and pressing problems identified by the public. Indirect effects of an airport include the stimulation of economic activity in the airport region that changes the use, value and capability of the land surrounding the airport. K. Beattie's study (1983) indicated that indirect impacts from developing an airport include stress on local and regional roads (as a consequence of increased traffic levels), stress on other surface infrastructure (hydro and sewage utilities), pressure on local housing markets and land values, and the encouragement of industrial, commercial and other urban uses of land area.

The environmental impacts associated with airport development can best be illustrated by the case of the Halifax International Airport. Situated 30 kilometres north of Halifax, the airport is owned and operated by Transport Canada. The construction of runways and other facilities at this site began in 1955. The runways were lengthened in 1960 from 800 feet and 1,500 feet to 8,800 and 7,700 feet respectively. At the same time, a portion of the Bicentennial Highway was being constructed through the airport property.

Halifax International Airport is located in the headwaters of the Shubenacadie River. More than 70 per cent of the water draining the airport enters the Shubenacadie River system (Ogden 1977). The river is used by municipalities, industry and the public as a source of water. It is also used for fishing and recreation. The river is a passageway for migrating fish (gaspareau, shad, stipped bass salmon, smelt and eels), allowing them to reach their spawning areas in headwater streams.

There is a band of slate is under the airport and highway area consisting of highly fractured fissile rock containing abundant pyrite and other minerals. There is no problem if the slate remains undisturbed. However, when excavated and exposed, the rock reacts with air and water to produce acid which, in turn, dissolves the heavy metals in the rock. The contaminated water then flows to the receiving streams in the area. These conditions persist as long as the rock remains exposed.

Problems associated with the construction of the airport and the Bicentennial Highway date back to 1960 when a fish hatchery located at the head of Grand Lake was closed and the first of several fish kills occurred due to high acidity and a high concentration of heavy metals. Investigations showed that construction at the airport was a contributing factor to the water quality problem. Environment Canada, in co-operation with the Nova Scotia Department of the Environment, examined the problem more closely in 1978. These investigations also revealed that there was some correlation between the continuing construction at the airport and the occurrence of major fish kills, particularly when the slate bedrock was excavated. In addition, water quality deteriorated and the water supply for two downstream communities was shut off for several days due to high arsenic levels.

The guidelines that were developed from Environment Canada's study (1978) to combat the acid drainage problem included the need to *minimize the removal of vegetation and overburden, minimize excavation into bedrock, use excavated rock as fill and cover and seal any rock used as fill or stockpiled against the percolation of precipitation.*

To comply with these guidelines, it was estimated that Transport Canada would need more than $3 million to properly cover all of the disturbed bedrock at the airport (Transport Canada 1985a). Transport Canada constructed a lime treatment facility designed to neutralize acid drainage associated with the taxiway developments in 1982. However, the lime treatment and settling ponds have had limited success and are only a temporary solution until a proper facility can be designed (Transport Canada 1985a). Transport Canada commissioned a study (Porter Dillon Ltd. 1985) that identified the need for the following additional remedial measures:

- *capping the waste rock pile or disposal of the waste rock pile in a designed landfill;*
- *controlling stormwater and runway underdrain discharge;*
- *sludge dewatering, solidification and final disposal; and*
- *treatment phase-out and monitoring.*

It was clear that, if environmental considerations had been addressed at the feasibility stage for construction of both the airport and the highway, the fish kills could have been avoided, the fish hatchery might still be operating and the water supply for downstream municipalities might not have been affected. This case study emphasizes the need for decision-makers and planners to incorporate environmental concerns into airport development projects. A number of serious and expensive environmental problems could have been avoided if the decision makers had examined the environmental implications of the project before starting it.

CATA'S ENVIRONMENTAL IMPACT ASSESSMENT POLICY

Transport Canada has implemented the EARP process at the operating component level by integrating the process with existing project planning, approval and development processes, rather than by setting up a separate organization. Each operating administration in Transport Canada is responsible for meeting the requirements of the Cabinet Memoranda'establishing the EARP process. As a result, Transport Canada does not have a single departmental EARP process or organization and EARP has been established with considerable variance in each organization. CATA itself does not have a separate organization to manage and direct its environmental protection process.

With regard to environmental protection, Transport Canada's directive AK-01 -00-003 (Transport Canada 1984c) states that *the policy of the Air Administration is to support and use this process (EARP) in the continuing development of the Air Program* (OP 411). Volume 1 of the manual (Transport Canada 1982) has a section dealing with CATA's policies with regard to EARP (OP 322). OP 322 outlines the purpose of EARP and states CATA's responsibilities as follows (Transport Canada 1982):

> 1. *The procedural aspects of EARP will be integrated into the CATA planning and management systems. The Approval-in-Principal Document (APD) and the Operational Plan (Ops Plan) will be the vehicles for introducing statements of environmental impact into the decision-making process. This will not change the existing delegated authority of Headquarters Directors-General and Regional Administrators to approve APD's and Ops Plans.*

2. Detailed amendments to the CATA planning system will be promulgated by DAP in the Program Planning Procedures Manual. Detailed guidelines, methodologies and instructions for the preparation of environmental assessments will be prepared jointly by DGK and DGCA and promulgated by each in the form considered most appropriate.

3. Projects on non-MOT owned airports towards which the Ministry is providing financial contributions are also subject to the full EARP. Although responsibility for the preparation of any environmental assessment shall rest with the applicant for financial assistance, CATA staff may provide advice and guidance in the preparation of such statements.

The documentation of CATA's environmental guidelines for airport planning, design, construction and operation are found in CATA manuals. The two CATA manuals that outline the role of EARP in the CATA organization are *Environmental Protection: Planning - Southern Canada* and *Environmental Protection: Design and Construction.* The environmental protection policy presented in the first document (Transport Canada 1983e) states that *environmental matters shall be taken into account throughout the planning and implementation of projects, programs and activities initiated by the department for which federal funds are solicited or for which federal property is required.*

Environmental Protection: Design and Construction (Transport Canada 1983d), states the following environmental protection policy:

The Air Administration will take environmental matters into account throughout the planning and implementation of projects, programs and activities initiated by the department or agency and incorporate the results of environmental assessments and reviews in the planning, design, construction and operation of facilities, giving environmental problems the same degree of consideration as that given to economic, social, engineering and other concerns.

To achieve these goals, CATA endorsed the use of the approach established by the Federal EARP Process. The AK document (Transport Canada 1983e) states that:

1. An assessment of potential environmental impacts shall be undertaken before commitments or irrevocable decisions are made for all projects that may have an adverse effect on the environment,

2. Assessments made for all major projects that will have significant impact on the environment shall be taken to a Federal Environmental Assessment Review Panel.

3. The results of environmental assessments and reviews shall be taken into account in the planning, design, construction and operation of facilities, giving environmental problems the same degree of consideration given to economic, social, engineering and other concerns.

4. In program forecasts and annual estimates the necessary funds shall be taken to apply the intent of this policy and program.

The AK document also includes the following standards associated with principles of CATA's environmental protection policy for planning (Transport Canada 1983e):

1. *Members of the public shall be involved in a consultative capacity in the development and continuing operation of CATA airports.*

2. The procedural aspects of the Environmental Assessment and Review Process (EARP) shall be integrated into the CATA planning and management systems.

3. Environmental assessment, an integral part of the airport planning process, shall apply to both Air Navigation Activity Projects and Airport Activity Projects.

4. Projects on airports not owned by Transport Canada, towards which the Department is providing financial contributions, shall also be subject to the full Environmental Assessment and Review Process.

5. CATA officers who are responsible for the budgets of planning teams and planning groups shall show, as separate items in their budgets, the cost associated with public consultation and environmental studies.

In the summary of the FEARO/RSCC EARP Workshop, Paul Scale of CATA (Ontario Region) states that reviews *which are called IEE's by CATA would be considered a screening report by DOE. FEAR0 should encourage greater consistency between departments in this regard.*

The CATA guidelines for reviewing environmental impact require that both environmental and social effects be considered. The physical environment is divided into five

components: plants, animals and ground cover; marine and aquatic life; air quality; groundwater and surface water; and noise. The social environmental is divided into six components: employment and income levels; community services; land use; recreational assets; human interest; and individual well-being.

These components are described in Transport Canada's AK document *Environmental Impact Studies* (Transport Canada 1981). This manual also contains a matrix system and identifies the types of projects that must receive an initial environmental evaluation.

It should be noted that after more than a decade of EARP at CATA, only one project (Boundary Bay Airport Reactivation - British Columbia November 1979) has undergone a complete panel hearing and panel report (FEAR0 1987c). No environmental assessment document has been produced or panel hearing completed for any CATA (Ontario Region) undertaking. Therefore, the initial assessment stage has been the sole focus of the environmental assessment process at CATA (Ontario Region).

4. AN APPROACH TO EVALUATING CATA'S INITIAL ASSESSMENT PROCESS

To study the effectiveness of EARP's initial assessment phase, it was necessary to select indicators on which to assess the implementation of EARP's intent. The effectiveness of the federal policy for environmental assessment depends upon the extent to which it is applied, the kinds of projects to which it is applied, the impacts that are examined, thedegree and form of public participation that occurs during the process, and the monitoring activities that undertaken. Consequently, four indicators were selected for this study:

- *the screening of activities to determine the need for further environmental assessment;*
- *the Initial Environmental Evaluation (IEE) of potentially significant activities;*
- *the public participation in screening and IEEs; and*
- *the monitoring of IEE decisions.*

SCREENING

The initial assessment process of EARP has two possible stages: **screening** and, if necessary, **initial environmental evaluation.**

EARP was established to ensure that all federal projects are screened for environmental impacts. The Order-in-Council specifies in Section 12 that every initiating department shall screen or assess each proposal for which it is the decision-making authority. Screening is a review of a project or activity for environmental effects that is carried out in the early stages of planning. Obviously, the earlier screening is conducted, the greater the likelihood that potential environmental problems associated with a project can be prevented.

Screening results in one of nine outcomes (FEAR0 1986):

1. *Automatic exclusion, based on lists defined on a program-by-program basis. The project proceeds.*

2. No *significant adverse effects. The project proceeds.*

3. Effects can be mitigated with known technology, environmental design and conformance to legislation and regulations. The project proceeds with mitigation and monitoring measures identified and recorded.

4. Potentially adverse effects are unknown. The proposal is given further study until a decision can be made.

5. Ability to mitigate effects is unknown. The proposal is given further study until a decision can be made.

6. Where potentially adverse effects are significant, according to criteria developed by FEAR0 and the initiating department, then the proposal shall be referred to the Minister of the Environment for public review by a Panel.

7. Where there is public concern about potential environmental effects, such that a public review is desirable, then the proposal shall be referred to the Minister of the Environment for a public review by a Panel.

8. Automatic referral based on lists defined on a program-by-program basis. The project is referred for public review by a Panel.

9. Potential adverse environmental effects are unacceptable in which case the proposal must be modified and then re-screened, or be abandoned.

Under the self-assessment approach of EARP, the initiator is responsible for the screening process and the decision of whether or not it is necessary to continue in the environmental assessment process. This means the proponent in EARP decides whether to submit the proposed program or project to further environmental review based on the screening for possible adverse environmental impacts. This self-assessment environmental screening is intended to take place before commitments or irrevocable decisions are made, thereby avoiding the cost, administrative dislocation and delay from imposing unwelcomed regulations (Couch, Herity and Munn 1981).

The review agency of EARP, FEARO, is housed in Environment Canada. The screening process is largely out of FEARO's control except when general guidelines and verbal advice are requested, an initiative that is left entirely to the discretion of the initiating department, or when these departments voluntarily provide FEAR0 with infor-

mation on their screening activities (Environment Canada 1982b). FEAR0 does not seem to have the authority to demand that information be provided. In addition, as Estrin and Swaigen (1978) note, EARP allows no appeal of the proponent's decision, *if, indeed, anyone (government or private citizen) has managed to find out that any decision has been made at all.*

The evaluation criteria developed to review CATA's screening process are:

- **The presence of screening: Is** *screening undertaken at CATA (Ontario Region)?*
- **Which projects are screened:** *Are all projects screened?*
- **When projects are screened: Is** *screening undertaken ear/y in the planning process?*
- **Screening procedures used:** *A variety of tools and techniques can be used in screening for identification of impacts. What are the screening procedures used by CATA? Are the screening procedures rigorous? Who undertakes the screening? Are site visits undertaken? Are there explicit guidelines on what constitutes a significant environmental impact or the need for further study ?*
- **Documentation of screening decisions:** Are *there records of the screening decisions and the decision criteria?*

INITIAL ENVIRONMENTAL EVALUATION

During the screening of a project, the proponent may be unable to determine whether the action is likely to have significant environmental effects. Further study may be necessary. Since 1976, the term Initial Environmental Evaluation (IEE) has been used to describe the documentation recording the results of this further investigation. Over the years, it has become an important component of EARP.

An IEE documents the nature and significance of the environmental and social consequences of a proposed project. If the IEE concludes that no significant environmental effects are likely, the proponent may proceed with the proposed project without further reference to EARP. An IEE that identifies significant expected effects is forwarded to FEAR0 for preparation of impact-study guidelines. However, according to FEAR0 (1984), no two departments seem to use the IEE concept the same way.

The 1984 Environment Canada study of IEE developed criteria to determine which federal departments have *exemplary initial assessment.* Since that study selected Transport Canada - CATA as a federal department that has exemplary initial assessment, the same criteria will be used to evaluate the aforementioned IEEs produced by CATA (Ontario Region):

1. Brief description of project

- **Justification for the project:** The nature of the justification may be economic, social and/or environmental. If a political justification is presented, the outcome of the decision of any initial assessment may be known in advance, but the decision and reasons behind it should still be documented.
- **Preferred location and alternatives:** This description must include more than a location on a map. It must note where the project is situated in relation to other developments in the area, what natural resources the project will use during its construction and/or operation, how much land is required, and a description of the type of the development in the surrounding area.
- **Estimated cost:** The estimated cost in dollars of the project is needed. It helps to give reviewers an idea as to the size of the proposed project.
- **Duration of construction and operation:** This includes a schedule of the construction and operation phases of the project. If the operation of the project affects the environment at different levels during different times of the year that fact must also be noted.
- **Frequency of project:** One-time projects are those that are terminated on completion such as the construction of a building. A repetitive project, such as road maintenance, must have a frequency timetable associated with it.

2. **Screening**

- **Definition of "significant":** The assessor must include a definition or description of what he/she means by a *significant impact.* That would allow a reviewer to examine the assessment document and understand how the assessor arrived at his/her decision.

- **Assessment** methods used: **Providing a** description of the assessment method used for a particular project allows reviewers to assess the activity using the same method. It ensures the assessment is reproducible.

- **Environmental changes predicted from the project:** The aspects of potential environmental impact that must be considered for all projects at the initial assessment stage are physical-chemical, ecological, aesthetic and social. Some of the categories and sub-categories for the above aspects are described in the Guide for Environ-*mental Screening* (EPS-FEAR0 1978). If the assessor suspects that the public may have environmental concerns about the project, he/she should determine what they are.

- **Criteria for making assessment decisions:** These criteria are based on the potential environmental impact of the project and are: magnitude, prevalence, duration, frequency, risk and importance. The criteria are not mutually exclusive, but are very much interrelated. Definitions are found in EPS-FEAR0 (1978). Using these criteria, together with a definition of significance, an experienced assessor should be able to make sound decisions on project-related environmental impacts.

- **Mitigative measures to be employed:** The assessor would, include a description of the mitigative measures to be used and the reasons for choosing them (e.g., they have been used successfully on similar problems on other projects).

- **Environmental changes predicted from the inclusion of mitigative measure to the project:** These changes would differ from those obtained in screening for predicted environmental changes in that only residual impacts would be described. These are impacts which occur despite the use of mitigative measures. The criteria outlined in the criteria for making assessment decisions would be used in making decisions on the seriousness of these impacts.

- **Monitoring or follow-up studies:** The assessor must describe the design and management of any monitoring or follow-up studies to be associated with the project. These include the objective of the monitoring study, the items to be monitored, the data to be collected, the means of collecting (sampling, site inspection, statistical analysis), and who will be responsible far that work.

3. **Decision**

- **Rationale for the decision:** The assessor must then make a decision based on the information generated from project definition and screening. The six potential conclusions resulting from the initial assessment have already been listed.

- **Inclusion of rationale:** A rationale for the decision must be included. The rationale may simply be a summary of items, project description and screening, or it may be more detailed. It is essential information for reviewers and is especially important for those projects for which assessment decisions were made but overridden by a political decision.

- **Decision and signature:** The decision and the signature of the assessors and decision-makers must be included.

Additional Criteria

In addition to these criteria established by Environment Canada (1984), two additional criteria must be taken into account in this study: timing and implementation.

Timing

An IEE should be undertaken and completed before irrevocable decisions on the project are made. The OECD (1979) concluded that, for environmental assessment to be affective, it must be so closely in form and timing to the decision-making process on projects that the best options for averting or ameliorating environmental impacts can be exercised. If the environmental assessment occurs late in the planning process, the effectiveness and impartiality of the assessment may be impaired because of the proponent may be heavily committed to the project. Consequently, the environmental assessment, and especially the initial assessment phase, must occur at an early stage in the planning process.

Implemen ta tion

During screening and initial assessment, the initiating department may decide that the potentially adverse effects of the proposed project are insignificant or mitigatable with known technology. If screening and initial assessment process produces this decision, the Order-in-Council specifies in Section 14 that where *in any*

case the initiating department determines that mitigation or compensation measures could prevent any of the potentially adverse environmental effects of a proposal from becoming significant, the initiating department shall **ensure** *that such measures are implemented.*

It is extremely important that the results of the initial evaluation and the recommended mitigative measures are implemented and included in the final design and development of the project.

PUBLIC PARTICIPATION

Public participation can be defined as (Canter 1977):

> *a continuous two-way communication process, which involves promoting full public understanding of the processes and mechanisms through which environmental problems and needs are investigated and solved by the responsible agency; keeping the public informed about the status and progress of studies and findings and implications of plan formulation and evaluation activities; and actively soliciting from all concerned citizens their opinions and perceptions of objectives and needs and their preferences regarding resource use and alternative development or management strategies and any other information and assistance relative to plan formulation and evaluation.*

Public involvement helps decision-makers to define objectives, clarify issues and examine alternatives. By employing adequate public consultation measures early in the planning process, decision-makers can obtain important and useful information, along with public reaction to proposals. Public participation in environmental planning and management can also enhance public confidence in the agency; foster support for its planning processes, decisions and actions; and enhance agency accountability (Baldwin 1985; Canter 1977).

The philosophy of EIA demands that the public be acknowledged as a contributor to decision-making and as a scrutineer to ensure that the proper procedures are followed. Public participation is considered essential to EIA because (Lucas and McCallum 1975):

- *Affected persons likely to be unrepresented in the decision process should have an opportunity to present their views.*
- *Members of the* **public may provide useful additional information to the decision-maker, especially when values are involved that cannot easily be quantified.**
- *Accountability of political and administrative decision-makers is likely to be reinforced if the process is open to public view. Openness puts pressure on administrators to follow the required procedure in all cases.*
- *Public confidence in the reviewers and decision-makers is enhanced, since citizens can clearly see in every case that all issues have been fully and carefully considered.*

Several general objectives and specific applications (Bishop 1976; Canter 1977) are relevant to public participation in the EIA process, including: *information, education and liaison; identification of problems, needs and important values; idea generation and problem solving; reaction and feedback on proposals; evaluation of alternatives,- and conflict resolution and consensus.*

The public can provide useful information to decision-makers. By incorporating public participation into the assessment process, the proponent may identify new information, previously unidentified effects and public issues and concerns. As Erickson (1979) states, *to leave the public out of the assessment process is equivalent to disregarding key data and informational sources.*

EARP requires the initiating department to assess a proposed project's potential for causing public concern. Public concern and reaction to a proposal are major factors in determining the significance of the potential impacts of a proposed project. Determining the significance of a project's environmental effects is not entirely objective. It has been argued that public consultation is necessary to determine the significance of impacts, especially those which cannot be measured in economic terms (Cornford, O'Riordan and Sadler 1985). Qualitative information from the public on values, goals, attitudes, preferences and priorities can help the decision-maker determine the significance of impacts on the individuals who will be affected by the proposed actions. Beanlands and Duinker (1983) state:

> *Although the views of the general public may not be supported by the findings of scientific investigations, their collective aspirations cannot be ignored. Therefore, it must be recognized that decisions resulting from environmental impact assessment may be based as much on subjective judgements involving values, feelings and beliefs, as on the results of scientific studies.*

A proposed project's impacts may not be scientifically or technically significant. However, the impact on the individuals and community near the site of the project may

be very significant.

In an effective public participation program, the proponent would produce a record of decision making which would allow for open public examination of the factors and considerations in the decision-making process. The public could clearly see that all issues have been fully and carefully considered in the process. As a result, no major omission or inaccuracies would occur in the planning process (Baldwin 1985). Public participation also promotes public support for agency actions. And finally, political and administrative decision-makers become more accountable since the process is open to public view (Canter *1977;* Environment Canada 1982). A 1987 Environment Canada discussion paper warns that, if an initiating department does not involve the public, the department runs the risk that an untrusting public will feel that issues are being covered up. The eventual result could be a confrontation between the initiating department and the public (Environment Canada 1987).

In essence, public participation is clearly necessary in the EIA process if environmental assessment is to be an effective decision-making tool.

While the final phase of EARP, the panel stage, has included public participation, such participation should be undertaken in the initial assessment phase as well. Public consultation in the screening and initial assessment phases aim to (FEAR0 1984):

- *inform the public and organized groups in the project area;*
- *solicit information in the form of briefs, oral presentations or comments on the proposal; and*
- *initiate a dialogue or exchange of information which may continue throughout the planning stages and into the construction and operation of the project.*

Unfortunately, public participation at the initial assessment stage of EARP is extremely rare (Holisko 1980; Environment Canada 1987).

The serious need to incorporate public involvement in all stages of project planning and impact assessment was identified in the Order-in-Council. It gives federal departments the mandate to take into account *the concerns of the public regarding the proposal and its potential environmental effects* during all stages of EARP. With regard to the panel stage of EARP, the Order-in-Council requires each EARP panel to conduct a public information program and *to ensure that the public has access to all relevant information that any member of the public may request* (Section 28). In addition, section 29 provides that all information submitted to the appointed Panelbepublicandthatthepublicbegivenpublicaccess to it, along with sufficient time to examine and comment on such information prior to the hearing.

The Order-in-Council recognizes the role of the public in the initial assessment stage of EARP. Section 15 makes the initiating department responsible for ensuring that *the public have access to information on and the opportunity to respond to the proposal in accordance with the spirit and principles of the Access to Information Act.*

Since it is very important that the views of the public on proposals are taken into consideration in the screening and initial assessment stages of EARP, the Order-in-Council requires that initiating department prepare procedures for allowing public access and response to initial assessment decisions. The initiating department must make and record initial assessment decisions for all projects.

The initiating department must forward a brief summary of these initial assessment decisions to FEAR0 for listing in the FEAR0 Bulletin for public review. This official notification to FEAR0 is considered a minimum step to allow the public the opportunity to express an opinion before irrevocable decisions are made (including implementation of any proposed mitigation or compensation measures) (FEAR0 1984). The department is encouraged to undertake a public consultation program for the initial stages of EARP, to give public notice of proposed projects and initial assessment decisions in appropriate publications, and to solicit comments and measure public concern. Just how this is achieved is left to the initiating department.

The evaluation criteria developed to review CATA's public participation in EARP are:

- **The presence of a public consultation policy: Is** *there a policy concerning public participation and what are the basic objectives of that participation in impact assessment?*
- **The practice:** *Public consultation in the initial assessment stages of EARP: Who are the "public" identified by CATA? What information is communicated and when? What public participationlcommunication techniques are used by CATA? What are the participation objectives and communication characteristics?*

MONITORING

Environmental assessment should be a continuing activity both before and after the point of decision. Monitoring is an essential complement to EIA and can be defined as data collection and evaluation for the purpose of (FEAR0 1986):

- *determining the effectiveness of environmental protection measures, including the reporting on the adequacy of project impact prediction methods and mitigation measures;*
- *developing a capability to predict environmental change for future projects; and*
- *improving project management and related programs to better protect the environment.*

Monitoring allows the decision-maker to observe actual impacts of the project and follow up on preventative and mitigative measures. It can identify any unpredicted impacts that may require mitigative measures. However, like EARP's initial environmental assessment process, monitoring is the responsibility of the initiating department.

Since monitoring affects the efficiency of EARP, monitoring will be an indicator in the evaluation. In its 1982 review of EARP, Environment Canada concluded that the monitoring stage of the federal EARP process had not been implemented to date. The report continued to state that there has been no formal process of post-audit or follow-up on the impacts or recommendations made under EARP. Beanlands and Duinker (1983), Lang (1983) and Rees (1981) have all documented the near total absence of follow-up studies and monitoring programs. Therefore, for this study, monitoring will be evaluated in terms of the monitoring of CATA (Ontario Region) projects that have undertaken initial environmental assessment.

5. SCREENING CRITERIA: REVIEW OF CATA'S SCREENING PROCEDURES

During the 19851986 fiscal year, FEAR0 helped Transport Canada - AIR to review their procedures for environmental assessment and review. Transport Canada-AIR's environmental manuals are currently undergoing redevelopment. For example, AK-7502 *(Environmental Protection: Planning Southern Canada)* is being changed to reflect the 1986 re-organization and the changes that FEAR0 developed in the screening process. Consequently, the current screening/initial assessment process used at Transport Canada is in a state of transition. Therefore, the screening procedures discussed in this paper applied when CATA existed and do not reflect the changes that have occurred since the re-organization, the creation of the' Airports Authority Group or the development of current environmental assessment procedures.

The Presence of Screening

At CATA, a screening decision is made that determines whether a proposed project requires an IEE. If the project does not require an IEE it is automatically exempted from the environmental assessment and review process.

Are All Projects Screened?

For purposes of defining which projects, processes and activities are subject to CATA's version of EARP, CATA's activities can be divided into three classifications: capital projects, operations and maintenance, and financial assistance/ministerial directive projects.

Capital Projects

Capital projects range from very minor projects, such as the purchase of micro-computers, to very major projects, such as the construction of a new runway. Regional staff are responsible for screening all capital projects for a five-year period. The screening process for capital projects at CATA focuses upon the type of the proposed project and its cost. The environmental assessment screening procedures for CATA require that an IEE be prepared for *a runway extension, a new runway and a new airport.* If the proposed capital project does not fall into any of these three specific project types, it is screened out of the environmental assessment and review process.

CATA's AK 75-02-100 document contains a guideline indicating that an IEE is also required if a capital project is likely to give rise to future public concern. This position is consistent with the EARP Order-in-Council which provides that a proposal must be subjected to EARP *if public concern about the proposal is such that a public review is desirable* (Section 13). However, as seen in other studies (Hunt, Rounthwaite, and Saunders 1984), the CATA document does not indicate how such *public concern* will be measured. CATA's guideline indicates that some projects, such as *land expropriation, new airport development and exposure of mineralized rock* may create *public concern.* However, there is no standard of what would constitute sufficient public concern about a CATA project to warrant an IEE. None of the eight IEEs reviewed in this paper were undertaken because of *public concern.* All of the related projects, except for Timmins, involved either a new runway or a runway extension.

All capital projects must be screened. However, cost is an important factor in determining the minimum level of documentation required by CATA's environmental review process. The guidelines found in CATA's early AK-7502 documents required that all projects costing more than $50,000 record the decision of an environmental review, in the form of an *Environmental Considerations sheet* (ECS) (see **Figure** 3. Environmental Considerations Sheet). This AK guideline was later changed to require this record only for projects costing more than $250,000. In the 1983 version of this AK document, this requirement was again revised to apply only to those projects costing more than $5 million. Consequently, only those capital projects valued at more than $5 million are formally screened and documented.

The screening involves filling out an Environmental Considerations Sheet (ECS). This documents the review and states whether an IEE or an EARP Panel review will be required for the project. The ECS must be attached to the Program Approval Document (PAD) before a decision will be made about whether a project should proceed. No PAD is to be approved by Headquarters without an attached ECS. However, once again, screening in the form of an ECS is limited to only those capital projects exceeding $5 million.

In theory, therefore, those projects below $5 million may not be screened despite potentially having significant environmental or social impacts.

ENVIRONMENTAL CONSIDERATIONS SHEET

Project No.: _____ **Sponsor:** _____

Amendment No.: _____ **Branch Contact:** _____

Site: _____ **Phone:** _____

Project Description: _____

Provide a response for each of the check list items below by checking the appropriate box and by providing a narrative where requested.

PART A - ENVIRONMENTAL SCREENING

1. Does the project require Initial Environmental Evaluation (IEE)?
   - ☐ Yes - Attach IEE; proceed to Part B
   - ☐ No - Continue
2. If no IEE is required:
   a. Have costs for studies to develop mitigational measures been included in the Project Cost Summary?
      - ☐ Yes
      - ☐ Not required
   b. Have costs for any public consultation process been included in the Project Cost Summary?
      - ☐ Yes
      - ☐ Not required

PART B - INITIAL ENVIRONMENTAL EVALUATION

1. Does the project require a DFE Assessment Panel?
   - ☐ Yes - See 2 below; proceed to Part C
   - ☐ No - See 3 below
2. If a Panel is required, has a PAD been prepared for funding the environmental studies and public consultation process in preparing the Environmental Impact Statement?
   - ☐ Yes
   - ☐ Not applicable

Figure 3. Environmental Considerations Sheet.

ENVIRONMENTAL CONSIDERATIONS SHEET (cont.)

3. If a Panel is not required:

   a. Have costs for studies to develop mitigational measures been included in the Project Cost Summary?
   ☐ Yes
   ☐ Not required

   b. Have costs for any public consultation process been included in the Project Cost Summary?
   ☐ Yes
   ☐ Not required

PART C - ENVIRONMENTAL IMPACT STATEMENT

1. Has the Minister of Transport accepted the Panel recommendations and authorized proceeding with design and construction program approval?
   ☐ Yes - See 3 below
   ☐ No - See 2 below

2. If no authorization, why not? _____

_____

_____

3. If the project is proceeding to design and construction program approval:

   a. Have costs for implementing the mitigational measures agreed to by the Panel been included in the Project Cost Summary?
   ☐ Yes
   ☐ Not required

   b. Have costs for any continued public consultation process been included in the Project Cost Summary?
   ☐ Yes
   ☐ Not required

Regional Supt., Planning
Planning & Programming Branch

Date: _____

Operations and Maintenance Projects

Non-capital projects do not require a formal screening or environmental review. Operations and maintenance activities are not subjected to EARP. Environmental protection associated with these activities is addressed in CATA's document AK-75-06. These guidelines state that CATA is responsible for ensuring that airport operations will comply with the appropriate federal and provincial guidelines for environmental protection. Environmental protection for operation and maintenance projects is considered a component of operational management and consequently not subject to EARP.

Financial Assistance/Ministerial Directive Projects

CATA's environmental protection process is applied to projects that are funded by the Department regardless of whether or not they are departmentally owned and operated facilities. As a result, financial assistance/ministerial directive projects are subject to EARP. Unlike capital projects, which are screened for a five-year period, grant vote projects are screened on a yearly basis. Financial assistance projects and ministerial directives do not require a formal screening or environmental review. The screening procedure for these is similar to the screening procedures for capital projects in that only those projects which involve either a runway extension, a new runway or a new airport require an IEE. All other projects are screened out of the environmental assessment process.

Is **Screening Undertaken Early in the Planning Process?**

Regional Administrators must undertake screening each spring, screening all projects in the five-year plan of PROGIS-CAP for projects that involve a runway extension, a new runway extension or a new airport. The regional list of projects requiring an IEE is updated and a copy of the list is forwarded to Headquarters. For reasons already cited above, financial assistance/ministerial directives projects are not screened as early in the planning process.

When a capital project is formally proposed, the capital programming procedures become the focal point of the environmental review process. The capital programming procedures involve the preparation and approval of Approval-in-Principle Documents (APDs), which briefly identifies the need for a project, establishes alternatives and proposes a solution, and Program Approval Documents (PADs) which detail options, develop recommendations and develop project costs. Basically the APD identifies a requirement and justifies the need for action. In many respects, the PAD is an APD with additional detail.

Environmental screening occurs when APDs and PADs are forwarded to various branches within the region for review. This is informal in nature and lacks any mechanism to document actual screening decisions. This screening procedure is contrary to EARP's stated goals because PADs are reviewed in a late stage of the planning process. The effectiveness of environmental input at this late stage in the planning process is limited. If the Regional Environmental Planner identifies any environmental problems in the review of the PAD, significant delays in project approval and implementation could occur. In addition, both APDs and PADs often contain insufficient information upon which to undertake an environmental screening.

Screening Procedures Used

A variety of tools and techniques can be used in screening for identification of impacts. What are the screening procedures used by CATA? Are site visits undertaken? Are the screening procedures rigorous? Who undertakes the screening? Are there explicit guidelines on what constitutes a significant environmental impact or the need for further study?

FEAR0 (1985) notes a 1984 survey of practitioners in initiating departments that showed most projects are screened by the project planner or group, often with a site visit, but without any direct use of techniques (ad *hoc* committee approach). FEAR0 has prepared a reference book on the screening process entitled A Guide for *Environmental Screening.* A variety of the tools and techniques that can be used in screening are presented in this reference book as well as in other FEAR0 publications. Methods include a matrix, showing construction activities along one axis and environmental components along the other. The screener putsx's into the boxes to denote a potential interaction between construction activities and environmental components. Such a method is highlighted in CATA's AK 75-02 document. However, although screening techniques like the screening matrix are suggested in CATA documents, screening is undertaken without any direct use of screening techniques. The screening procedures for CATA consist of the identification of projects which may require an IEE. There is no need to use these techniques since only projects that involve runway extensions, new runways or new airports are screened into EARP.

The screening procedures are theoretically rigorous in that all runway extensions, new runways or new airports

require an IEE. However, there have been some projects that have involved runway extensions for which an IEE was not undertaken (e.g., Cochrane, Pembroke and Waterloo-Wellington airports).

All capital projects that are valued at less than $5 million do not require a formal, documented environmental assessment review unless it has been decided during the annual review by the Regional Administrator that an IEE will be required. The project manager is responsible for undertaking an environmental screening of any project valued in excess of $5 million and require no documentation. These project managers determine whether a more detailed review by the Regional Environmental Planner is required. Consequently, project managers refer projects to the Regional Environmental Planner for environmental screening on an ad hoc basis.

FEAR0 (1984) has identified specific criteria that initiating departments should use to describe and analyze impacts associated with proposed projects:

- **Magnitude: defined as** *the probable severity of each potential impact, in the sense of degree, extent or scale.*
- **Prevalence:** *defined as the extent to which the impact may eventually extend, e.g., the cumulative effects of a number of projects.*
- **Duration and frequency: will** *the activity and its impacts be long-term or short-term? If the activity is intermittent, will it a/low for recovery during inactive periods?*
- **Risk:** *defined as the probability of serious environmental effects.*
- **Precedent: does** *the proposal create a precedent that is likely to be duplicated or extended elsewhere?*

However, CATA has no guidelines on what constitutes a *significant environmental impact* or the need for further study. FEAR0 asked Transport Canada to establish better screening procedures and defining significant criteria, such as referrals to public review, in Transport Canada's screening process (Transport Canada 1985a). A *significant impact* is not defined or described in any of the eight IEEs reviewed in this study. Consequently, a review of CATA's screening and initial assessment decisions would not exist to determine how the assessor arrived at the decision that "no significant impacts" were anticipated.

Documentation of Screening Decisions

Under the Order-in-Council, the appropriate decision-making authority must document and forward screening decisions to FEARO. At a minimum, departments must provide public access to screening decisions. Screening decisions, including supporting information, are to be documented and filed so that the public and government departments can have easy access.

SUMMARY

At CATA, screening focuses upon project type and cost rather than on potential environmental impacts. Screening consists of determining whether a capital or financial assistance project requires a mandatory IEE. All other capital projects, financial assistance and operation and maintenance projects are automatically exempted from the environmental assessment and review process. CATA's screening procedures use no environmental assessment tools or techniques. In essence, screening at CATA failed to meet the criteria of this study and the basic intent of EARP.

6. INITIAL ENVIRONMENTAL EVALUATION CRITERIA; REVIEW OF IEES PRODUCED BY CATA (ONTARIO REGION)

Within CATA, an IEE is documented in a two-page form that briefly records any potential environmental concern and the supporting environmental studies, if any, that will be required or have been completed (see **Figure 3.** Environmental Consideration Sheet). CATA's IEEs would be considered a screening report by Environment Canada (FEARO/ RSCC 1984). According to the initial environmental section in the CATA manual, *Environmental Protection: Planning - Southern Canada,* an IEE is a brief document that:

- *describes the project;*
- *indicates whether or not an Environmental Impact Statement (EIS) is needed;*
- *identifies the detailed environmental studies that are planned;*
- *includes a sketch showing the location and indicating the geometries of the proposed project; and*
- *describes the public consultation associated with the project.*

The two-page IEE is normally completed by the Regional Environmental Planner. This form is accompanied by additional documentation only if supporting environmental studies are required. A consultant would normally complete the additional environmental documents. The CATA guideline with regard timing states that an IEE should be prepared as early as possible in the planning stage of the project.

CATA (Ontario Region) has produced approximately a dozen IEEs since the introduction of EARP. For the purpose of this study, eight IEEs will be reviewed and evaluated: Carp Airport (1982), Collingwood Airport (1985), Cornwall Airport (1985), Georgian Bay Airport (1986), Huronia Airport (1986), Kapuskasing Airport (1979), Kincardine Township Airport (1986) and Timmins Airport (1978).

Other IEEs undertaken by CATA (Ontario Region) but are not included in this review are: Hamilton Airport, Windsor Airport and Moosonee Airport. Hamilton Airport's IEE will not be reviewed because the project was taken to the panel stage but withdrawn before a hearing was undertaken and the IEE was produced in 1977, three years before the project was withdrawn from EARP. Insufficient information was available to undertake a review of the IEEs for Windsor and Moosonee airports.

Finally, the following airport projects should have had an IEE under CATA's EARP policy, but did not undergo EARP prior to completion: Pembroke Airport expansion, Cochrane Airport - Airport runway extension and Waterloo-Wellington Airport runway extension.

In the 1987 Environment Canada study on initial assessment, criteria were developed to determine which federal departments have *exemplary initial assessment.* Since Transport Canada - CATA was selected in this study as a federal department that has exemplary initial assessment, the same criteria will be used to evaluate the aforementioned IEEs produced by CATA (Ontario Region) (refer to Chapter 4 for more detail):

- **BRIEF DESCRIPTION OF THE PROJECT:** justification of the project, preferred location and alternatives, estimated cost, duration of construction and operation, and frequency of the project.
- **SCREENING:** definition of 'significant", assessment methods used, environmental changes predicted from the project, criteria for making assessment decisions, mitigative measures to be employed, environmental changes predicted from the inclusion of mitigative measures to the project, and monitoring and follow-up studies.
- DECISION: rationale for decision, and decision and signature.

EVALUATION OF CATA (ONTARIO REGION) PRODUCED IEES

The findings of the evaluation of the eight IEEs are summarized in Table 1 **(Table 1.** Evaluation of Eight IEEs). A brief commentary follows.

	CARP	COLLINGWOOD	CORNWALL	GEORGIAN BAY	HURONIA	KAPUSKASING	KINCARDINE	TIMMINS	TOTAL	PERCENT
Justification	Y	N	Y	N	Y	N	N	N	5 N 3 Y	62.5% 37.5%
Preferred Location	S	N	S	N	S	N	N	N	5 N 3 s	62.5% 37.5%
cost	N	N	N	Y	N	S	N	N	6 N 1 s 1 Y	75.0% 12.5% 12.5%
Duration	N	N	Y	Y	N	N	Y	N	5 N 3 Y	62.5% 37.5%
Frequency	N	S	Y	Y	N	N	N	N	5 N 1 s 1 Y	62.5% 12.5% 12.5%
Significance	N	N	N	N	N	N	N	N	8 N	100%
Methods	N	N	N	N	N	N	N	N	8 N	100%
Environmental Changes Predicted	S	S	S	S	S	S	S	N	1 N 7 s	12.5% 87.5%
Criteria	N	N	N	N	N	N	N	N	8 N	100%
Mitigative Measures	N	S	S	S	S	N	S	N	3 N 5 s	37.5% 62.5%
Changes After Mitigation	N	N	N	N	N	N	N	N	8 N	100%
Monitoring	N	N	N	N	S	N	N	N	7 N 1 s	87.5% 12.5%
Rationale	S	S	S	S	S	S	S	N	1 N 7 s	12.5% 87.5%
Decision	Y	Y	Y	Y	Y	Y	Y	Y	8 Y	100%
Timing	?	N	N	N	Y	Y	N	N	5 N 2 Y	71.4% 28.8%
Implementation	N	S	N	N	N	N	N	N	7 N 1 S	87.5% 12.5%
TOTAL	10N 3s 2Y	10N 5s 1Y	8N 4s 4Y	9N 3s 4Y	8N 5s 3Y	11N 3s 2Y	11N 3s 2Y	15N 0S 1Y	82N 26S 19Y	
PERCENT: N	66.6	62.5	50.0	56.3	50.0	68.8	68.8	93.8	64.6	
S	20.0	31.3	25.0	18.8	31.3	18.8	18.8	0.0	20.5	
Y	13.3	6.3	25.0	25.0	18.8	12.5	12.5	6.3	15.0	

Brief description of project

Justification for the project: The nature of the justification may be economic, social and/or environmental. The decision and reasons behind it should be documented. Only three of the eight IEEs met this criterion. Five of the IEEs contained no justification for the project.

Preferred location and alternatives: This description includes a map, the location of the project in relation to other development in the area, what natural resources the project will use during its construction and/or operation, how much land is required, and a description of the other development in the surrounding area. Five of the eight IEEs did not meet this criterion. The other three IEEs met the criterion to some degree.

Estimated cost: The estimated cost of the project helps to give reviewers an idea of the size of the proposed project. However, six of the eight IEEs did not give an estimated cost for the proposed projects. Only one IEE gave a clear indication of the estimated cost.

Duration of construction and operation: This information includes a schedule for the construction and operation phases of the project. The IEE must note if the operation of the project affects the environment at different levels during different times of the year. Five of the eight IEEs did not meet this criterion. Three of the IEEs did meet this criterion adequately.

Frequency of project: One-time projects are those that are terminated on completion. A repetitive project has a frequency timetable associated with it. Five of the IEEs did not meet this basic criterion, two IEEs met the criterion and one IEE met the criterion to some degree.

Screening

Definition of "significant": The IEE should include a definition or description of what is meant by significant *impact.* This information would allow a reviewer to examine the assessment document and understand how the assessor arrived at his/her decision. No IEE had a definition or description of what was meant by a *significant impact.*

Table 1. Evaluation of Eight IEEs

Note on coding: N - No, does not meet the IEE criteria; S - Meets the IEE criteria to some degree; Y - Meets IEE criteria adequately

Assessment methods used: A description of the assessment method used for a particular project allows reviewers to assess the activity using the same method. In other words, it ensures the assessment is reproducible. None of the IEEs reviewed provided such a description.

Environmental changes predicted from the project: At the initial assessment stage, all projects must consider the physical-chemical, ecological, aesthetic and social aspects of potential environmental impact. One IEE did not meet this criterion while the remaining seven IEEs met the criterion to some degree. However, it must be emphasized that these did not address social impacts adequately.

Criteria for making assessment decisions: These criteria, based on the potential environmental impact of the project, are magnitude, prevalence, duration, frequency, risk and importance. Using these criteria, together with a definition of significance, an experienced assessor should be able to make sound decisions on project-related environmental impacts. However, none of the IEEs used any of these criteria for making assessment decisions.

Mitigative measures to be employed: This information would include a description of the mitigative measures to be used and the reasons for choosing them. Three IEEs did not provide any description of mitigative measures. Five of the IEEs met this criteria to some degree.

Environmental changes predicted from the inclusion of mitigative measure to the project: This information would differ from that obtained in assessment of environmental changes in that only residual impacts would be described. These are impacts which occur despite the use of mitigative measures. None of the IEEs identified any potential residual impacts.

Monitoring or follow-up studies: The design and management of any monitoring or follow-up studies to be associated with the project must be described. This description includes: the objective of the monitoring study, the items to be monitored, the data to be collected, the means of collecting (sampling, site inspection, statistical analysis), and the name of the person responsible for that work. Seven of the IEEs did not identify any monitoring or follow-up studies. One IEE met this criterion. to some degree.

Decision

Rationale for decision: The assessor must then make a decision based on the information generated from the project description and the results of the screening. A

rationale must be included. This may simply be a summary of items or it may be more detailed. It is essential information for reviewers and is especially important for those projects for which assessment decisions were made but overridden by a political decision. Seven of the IEEs reviewed met this criterion to some degree. One IEE did not meet the criterion.

Decision and signature: The decision and the signature of the assessors and decision-makers must be included. All the IEEs reviewed met this criterion.

Other Criteria

Timing

Five of the IEEs were produced very late in the planning process (during or after the construction of the project). Therefore, they could not have affected the decision to go ahead with, or stop, the project or the design of the project. Two IEEs were produced early enough in the planning process to provide information that could contribute to the decision-making process. For one IEE, the criterion of timing could not be determined. Overall, the IEEs did not seem to play a role in CATA's decision-making process. Irrevocable decisions were made before the associated IEE was completed and/or approved. Thus, if any significant environmental problems had been identified in the IEE, only remedial measures would have been possible. This situation is contrary to EARP's stated goals and CATA's environmental protection policy.

Implementa tion

Seven of the IEEs failed to meet this criterion. One IEE met this criterion to some degree. Most of the IEEs indicate that mitigative measures will be included in the construction specifications. However, an IEE should do more than refer the reader to construction specifications in an appendix. The IEE should outline how contract specifications can be adapted to a particular site. Environmental protection procedures, such as an erosion control plan, should include, for example, such details as the location of sedimentation basins and rip rap, the timing of uncovering an area and the area to be excavated. These measures should then be written into the contract specifications.

All of the IEEs failed to provide clear and practical directions on mitigative measures. According to FEAR0 (1984), if the mitigation or compensatory measures are not completely worked out or detailed in the screening and initial assessment stages, the initiating department should establish a plan for the preparation and approval of the measures, which then becomes part of the screening or initial assessment documentation. Unfortunately, there appears to be no system in CATA (Ontario Region) which will help to ensure that recommendations made in the IEE stage will be carried out on mitigation measures, project monitoring, surveillance and required follow-up or corrective measures.

SUMMARY

All of the IEEs reviewed in this study did not meet 50 per cent or more of the IEE criteria adequately or to some degree. One of the IEEs did not meet 93.8 per cent of the IEE criteria. Overall, 64.6 per cent of the criteria were clearly not met. On average, only 15 per cent of the IEE criteria were met adequately, If the criteria *decision* is dropped, only 8.6 per cent of all of the criteria for all the eight IEEs reviewed were met adequately.

Environment Canada's 1987 study on initial assessment identified CATA as a federal department that had exemplary *initial assessment.* However, using the same criteria developed by the Environment Canada study, the findings of this detailed study of IEEs produced by CATA (Ontario Region) leads to a very different conclusion. The IEEs that were reviewed could not be considered exemplary or even adequate using Environment Canada's initial assessment criteria.

7. REVIEW OF PUBLIC PARTICIPATION AT CATA (ONTARIO REGION)

PUBLIC PARTICIPATION POLICY

The presence of public consultation policy: Is there a policy and what are the basic objectives of public participation in impact assessment?

One of the basic principles of CATA's environmental protection policy is that *members of the public shall be involved in a consultative capacity in the development and continuing operation of CATA airports* (Transport Canada 1983e). The section in CATA's policy document dealing with the Program Approval Process - APDs contains the following standard:

(v) *the Regional Administrator shall forward to DGK (Headquarters) for approval the following portions of the public consultation program:*

1) details of the project expenditure that can be attributed solely to public consultation;

2) *details of the composition of the consultative committee that is planning for the project.*

There are two CATA publications which deal exclusively with public participation and which will be highlighted in this study: *CATA Policy for Public Consultation (TP1567)* and *Public Consultation/Communications Plan for Ontario Region* **(1986).**

CATA's **1979** policy paper entitled *CATA Policy for Public Consultation* (TP1567) indicates that the preparation of a schedule for the study or planning project, including the public consultation component, is a vital step in the planning process. CATA's policy for public consultation is *to engage in public consultation during the planning and operations of the National Civil Air Transportation System.*

The policy paper acknowledges that FEAR0 guidelines for EARP call for continuous public involvement from the time when an EARP panel is formed until an EIS is prepared and made available for review by the public. If an EARP panel is required, CATA will arrange for all public consultation on the project, except for *public comment on the Draft EIS guidelines issued by the EARP panel;* and *public comment on the Environmental Impact Statement (EIS) during the time between the first availability of the EIS to the public and of the EIS submission of the panel report by the panel chairman to the Minister of the Environment.* This public comment will be arranged by the Chairman of the EARP panel. The policy paper adds that CATA's position is *to maintain its current practice of starting public consultation at the very beginning of CATA project planning regardless of whether the nature of the project does or does not call for an EARP panel.*

The following principles of constructive public consultation are highlighted in the policy paper:

1. To create a flow of information between the interested and affected publics, departmental planners and politicians with a view to establish the facts, discuss concerns, evaluate alternatives and propose solutions.

2. *To establish credibility and trust and effective working relationships among planning partners (public, professional planners and politicians).*

3. To maximize the public acceptance of decisions.

4. To minimize waste and inconveniences.

5. To correct misunderstanding and allay fears on the part of those affected by the proposed action.

6. To obtain feedback which will help in evaluating the proposed action.

7. *To obtain constructive suggestions which can improve a proposed action.*

To apply these principles, the policy paper states that a CATA planning project may have any or all of the following objectives:

- *to inform the public of Transport Canada's intentions and plans;*
- *to increase public understanding of specific air transportation issues affecting them within the project scope;*
- *to ensure that the planners and decision-makers are systematical/y aware of the values, goals, attitudes and priorities of those affected by the project;*
- *to listen and respond to project proponents, opponents, interested and affected individuals and organiza tions;*

- *to encourage representation from all of those affected by the project (e.g., citizens, organizations, government agencies);*

- *to foster suggestions from informed citizens and organiza tions to solve air transportation issues and to ascertain their preferences on technically sound alternatives,-*

- *to encourage any divergent community interests to minimize their differences before contributing to an air transportation planning project; and*

- *to solicit understanding, acceptance and active support for the CATA project in question.*

The policy paper indicates that to achieve these objectives, public participation is needed early in the CATA planning process. The paper also acknowledges that there is a tendency for government departments to defend previously determined courses of action rather than to explore any new information or alternatives or views received through the public consultation program.

However, there are great benefits to be gained by Transport Canada in undertaking a public participation program during the formative stages of the planning process. Early and informed public input can contribute substantially to CATA's development of a broad set of alternative solutions, its formulation of selection criteria and a balanced evaluation of technically sound alternatives. The policy paper states that *the identification of public preferences and concerns and their consideration in the planning and decision-making process is the key element in a program of constructive public consultation.* CATA planners can better proceed with an understanding of the citizen's needs and desires.

While acknowledging the benefits associated with public participation, the policy paper adds that the public should have only an advisory role. In addition, the policy paper states that there is *no ready formula which will guarantee good public reception of a Transport Canada program, or which will guarantee good public consultation in the formulation or carrying out of any program.* On the basis of this point, the policy paper states that it is obvious that a *constructive public consultation must be tailored to suit the needs of any specific program or Region.*

A public consultation program proposed for the Airports Authority Group (Ontario Region) was prepared in 1986 entitled *Public Consultation/Communications Plan for Ontario Region* (Transport Canada 1986). This document contains the proposed "constructive public consultation" plan referred to in the policy paper. Although worded somewhat differently, the objectives of the Consultation/Communication Plan are the same objectives as those stated in the CATA policy paper. The Public Consultation/Communications Plan focuses upon three methods to enhance the Airports Authority Group's external communication: media relations, public consultation and project/construction-related communications.

MEDIA RELATIONS

The proposed public consultation plan stated that the most critical element within the external communication process at CATA (Ontario Region) was the cultivation of media relations. It argues that, since the media informs the public of the Airports Authority Group mandate and its success in carrying out this direction, *an emphasis must be placed on dealing with, and enhancing, media relations* .

Examples of the media relations communication techniques cited are: emergency kits, monitoring of media, news conferences, news releases, requests for information, site tours, and special events.

PUBLIC CONSULTATION

The plan suggests that the Airports Authority Group should make every effort to consult and communicate with the public at large. However, *the input of the public must be taken in an advisory capacity.* Public communication techniques cited in the plan are:

Advertising: Advertising to promote a specific project or event such as a renovation or open house.

Airport tours: Airport tours would be a key part of community relations. The focus would be geared to the needs and interests of various groups, schools and other interested associations. These tours would be promotional in nature.

Airport displays and exhibits: Static displays and exhibits designed to promote the Airports Authority Group and site operations are to be used as part of the educational aspect of the on-going public consultation program. Topics which the communication plan identified for promotion were aviation safety and security and air traffic control.

Audio-visual material: According to the plan, the production of audio-visual aids is *an integral part of Airports Authority Group's on going public information program.* Audio-visual projects would consist

of slide shows and an accompanying taped narrative, or video programs. These audio-visual materials would be used to *provide a descriptive account of airport operations to the general public, the media, service clubs, the local Chamber of Commerce or Board of Trade.*

Internal reference centre: The plan suggests that an internal reference centre be set up in the Ontario Region to deal with all public, media and institutional requests for information.

Publications: Airport brochures and pamphlets were identified as a way to highlight various airport activities and projects to the media and the general public. The publications would contain information on specific airport history, operations and renovation projects. These publications would be made available to the public through airport displays, in local Chamber of Commerce or Board of Trade offices and in service clubs in the area.

Requests for information: The program states that *responding to the general public's requests for information should be viewed as an opportunity for the Airports Authority Group to present management views of the issues at hand and to offer positive aspects of the situation that may not otherwise be voiced.*

Preparation of social profiles: The plan suggests that airport social profiles should be undertaken by the Airports Authority Group for all required airports in the Ontario Region. The social profile would identify the principal publics of the airport and lists the main interest groups who can represent the public on certain issues. The social profile would recommend principal lines of communication with the media and summarize public attitude towards the airport.

Other techniques discussed in the public consultation plan included: career days program, compliment/complaint cards, preparation of background papers and the creation of a speakers bureau.

PROJECT/CONSTRUCTION RELATED COMMUNICATIONS

The plan states that the Airports Authority Group should initiate a program to provide comprehensive communication packages to inform the public, local government bodies and the media of airport construction or expansion or other activities which may be disruptive in nature. The purpose of the project/construction-related communications program is to, *when required, have documentation available pertaining to the capital works and to provide specific information to mitigate any potential problems.* However, the plan does not suggest what activities would be considered disruptive in nature.

According to the plan, the major elements of the program should include:

- *an organized news media campaign (including a news conference at the project site and a series of news releases prior to the start of the project);*
- *a brochure that describes the project and an easy-to-read map showing the construction area and any required detours. In addition, frequently prepared construction newsletters should be given out;*
- *meetings with tenants, affected business and neighbourhood groups;*
- *an on-site resource/information centre and/or telephone "hotline;"*
- *newspaper display advertisements; and*
- *timely news releases and/or meetings with the local media during construction.*

It should be emphasized that this program is aimed at communications prior to, and during, construction of the project rather than during the planning of the project when any information or input from the public could have its greatest impact.

PUBLIC PARTICIPATION PRACTICE

Policy papers and public consultation/communications plans about the importance and value of public involvement in EARP do not necessarily reflect or influence what actually happens in practice. With respect to the thousands of assessments which have been completed under NEPA in the first nine years, Erickson (1979) suggests that assessment teams typically view the public more as an adversary than as a partner in the assessment process. As a result, public involvement has remained largely an unfulfilled ideal.

FEAR0 is developing guidelines on public consultation for use during the initial assessment stage of EARP (FEAR0 1986). Praxis was hired by FEAR0 to produce a guidebook on public involvement for federal departments undertaking EIA. In February 1987, a Praxis-

prepared a survey under the auspices of FEARO called a *Study on Public* ***Involvement in Environmental Impact*** *Assessment.* Transport Canada's Airport Authbrity Group received this survey. Responses were solicited from various Airport Authority Group staff members in the Ontario Region that were associated with airport planning. They were asked about their past experience with public participation within the FEAR0 Process. The survey responses submitted to Praxis to aid in the production of the EARP guidebook on public participation will be presented in this section.

As noted earlier, the philosophy of environmental impact demands that the public be recognized as a contributor to decision making and also as a watchdog to ensure that the proper procedures are followed in the assessment process. The first section of the survey dealt with ex**periences with public involvement.** The first survey question was concerned about what kinds of public involvement CATA had experienced since there are a number of approaches to this field:

> *For example, if a new highway was to be built, one project manager might carry out an information program to simply tell people what was to be done and why. Another might outline three possible routes and invite interested people to rank the alternatives — an information/feedback program. Yet another approach would be to engage interested people in a consultation program. By outlining the need, indicating several alternatives and inviting the participants to suggest others, he would then involve them in an evaluation exercise but the results would be strictly advisory. Finally, a project manager might work with other agencies having jurisdiction over some of the area affected, eg., a municipality, in a joint decision-making exercise.*

In response to this survey question, CATA (Ontario Region) stated that of the four approaches cited above, they had had experience with two over the previous three years specifically concerning:

- Information programs (for 6 IEEs); and
- Land use zoning for height restrictions (primarily informational in nature with some feedback).

The land use zoning referred to in the responses involved airport zoning regulations under the Aeronautics Act and not under EARP. Therefore, CATA (Ontario Region) has limited public participation to simply telling the public what was to be done and why.

None of the IEEs reviewed in this study contained a public participation program. In the summary of the 1984 FEARO/ RSCC EARP Workshop, Paul Scale, Environmental Planner, CATA (Ontario Region), stated that public consultation does not occur at the IEE stage of a project unless provoked. This lack of public participation in the initial assessment stage is important for the following two reasons:

> 1. *Without any public participation program, it is difficult for the IEE to determine community concerns and goals and the impact of the proposed development on individual well-being and the* com*munity.*
>
> *2. Since public reaction to a proposed development is a major factor in determining the significance of impacts, the determination of all the IEEs (that there were no "significant impact'? was based on insufficient information (since there was no opportunity for public reaction).*

Dr. C. Miller (EPS, Environment Canada) stated, at a 1985 Transport Canada conference , that to be *truly effective at environmental management we must review all social aspects of our decisions and recognize the importance of listening to the "real", or non-governmentall bureaucratic, persons that the decisions may affect.* Most of the IEEs state that social components, such as recreational assets, human interest, and individual well-being, were reviewed in the IEE. Generally, however, these components were not covered in the IEE or IEE background document.

Public participation programs can help to determine if there are any local groups or individuals who will be negatively affected by a project. The public participation program is also a means by which their concerns can be addressed.

The IEE background document for Georgian Bay airport stated that *conversations with local authorities and community* representatives revealed some criticism *regarding the lack of information in the area with respect to plans for airport development.* Community representatives were concerned about the noise problems associated with an expanded airport. The IEE discounts these concerns as unfounded, but fails to indicate whether further meetings with community representatives were held to inform them of the conclusions of the IEE.

Generally, this study found that CATA focused its public consultation program on local authorities. These local officials, it was argued, represented the community and

the views of the public in the area. However, as Reg Lang (1981) indicated, this view does not accurately reflect the public's reaction to a proposed development:

> *For example, a couple of local mayors confused the role of the municipal council, specifically responsible for representing their electors on certain matters, with the community at large and all the things that go on in it. One mayor said that his council had met the previous night, voted on the issue and was unanimously in favour of the plant being built there; therefore, he claimed to speak for the entire community in this regard. He saw nothing illogical about that stand (the fact that he and his council were not elected on a platform that had anything to do with the plant, the fact that the council met in camera, the fact tha t they did not consult widely in the community before reaching a decision, etc.).*

In addition, in cases like financial assistance projects, this approach to public consultation can create a conflict of interest since the same local authorities who requested the development through their local M.P. were the group that CATA consulted concerning the project and any potential community opposition or concerns.

The key to a successful public participation program is effective communication of the goals and activities of the government department (and assessment team), and feedback from the public (individuals and organizations) to agency decision-makers (Baldwin (1985) and Erickson (1979)). Communication between the government department and the public should be an active and constructive exchange of information, goals and opinions. A program of public participation in environmental assessment must provide information in an appropriate form and a timely manner.

Any public participation program should be planned with clearly defined objectives. These objectives are clearly defined in CATA's *Policy for Public Consultation* (TP 1567) and the *Public Consultation/Communications Plan for Ontario Region.* In addition, the proponent must also implement public participation techniques that can fulfil these objectives. FEAR0 (1986) states that, under EARP, managers should incorporate techniques in departmental procedures that guarantee compliance with the basic requirements of public participation in EARP. A variety of consultation techniques are available. Each one applies to particular situations and focuses achieving different objectives.

The second section in the FEARO/Praxis survey (1986) dealt with **specific public involvement techniques.** The survey listed these techniques and requested that thedepartment indicate how often it used each (choosing from this list of possible answers: frequent; very often; often; sometimes; occasional; and never). These results are presented below in **Table 2.**

Data Input Techniques	**Response**
Surveys of knowledge and opinion	Never
Analysis of newspaper coverage	Occasionally
Community profiles	Occasionally
Briefs	Occasionally
Written submissions	Never
Information Techniques	
News releases	Sometimes
News conferences	Occasionally
Newsletters	Occasionally
Audio-visuals	Never
Consultation Techniques	
Advisory committees	Never
Workshops	Never
Public meetings	Never
Open houses	Occasionally
Public hearings	Never
Other techniques	
Publications in local papers concerning zoning regulations	Very often
Project Descriptions to do with zoning regulations under Aeronautics Act	Very often

Table 2. Results of the Praxis survey on Public Participation in CATA IEEs (Praxis 1986).

These responses indicate that CATA (Ontario Region) never used the majority of the consultation techniques identified in the survey. Some data input techniques were used occasionally. CATA (Ontario Region) emphasized techniques that supply material to the mass media. This technique achieves a high level of public contact but allows for very little two-way communication and does not handle specific interests (FEAR0 1986). It serves only to inform/educate the public.

The only consultation technique that CATA (Ontario Region) used was open houses. These were usually located at the airport site with public displays about the construction of a proposed project. While open houses achieve a high level of public contact, they demonstrate little ability to handle specific interest and only a medium degree of two-way communication. The public open houses serve to inform/educate, get ideas/solve problems and receive feedback. However, considering the timing of these open houses (i.e., late in the planning process), they achieve very low results in these three areas.

The third survey section dealt with the identification of manuals, guidebooks, and policy directives dealing with public participation. The survey response identified the following publications: *CATA* Policy for Public *Consulta tion* (TP1567), *Public Consultation-Communications Plan for Ontario Region,* and *Ontario Region Registered Zoning Plan,* ANS *Standards and Procedures Division, Air Navigation Ontario Systems Requirement Branch .*

The final survey section dealt with **hindrances to public participation** within federal government departments and with issues which each department is facing with respect to public involvement. The question dealing with hindrances listed potential hindrances and asked the department to list its relevance to its operation:

- Lack of clear policy direction about public involvement: VERY RELEVANT
- Public involvement is not required in project/program planning: SOMEWHAT RELEVANT
- No resource people available to assist line managers: SOMEWHAT RELEVANT
- No training in public involvement available to staff: SOMEWHAT RELEVANT
- Lack of a practical manual about public involvement: SOMEWHAT RELEVANT

The final question in the survey asked the department to identify *the current issues your unitlsectionldivision is facing with respect to public involvement.* The response to this question were summarized by Praxis as follows:

> *The major issue is the lack of clear policy regarding public participation in the federal environmental assessment process. Other issues:*
>
> 1. *Municipality reluctance with projects that are funded by Transport Canada; and*
>
> 2. *Difficulty in completing ministerial directed projects with tight deadlines if public participation was involved.*

These responses reveal that despite the public participation policies presented in the 1979 *CATA Policy for Public Consultation* (TP1567), CATA (Ontario Region) does not demonstrate a clear policy direction about public participation.

6. REVIEW OF MONITORING AT CATA (ONTARIO REGION)

The need to monitor project effects is one of the basic *requirements to screening and initial assessment* (FEAR0 1984). Monitoring at the initial environmental assessment stage allows for the evaluation of need for, and effectiveness of, mitigative measures. It can identify any unpredicted impacts that may require mitigative measures. However, like the initial environmental assessment process of EARP, monitoring is the responsibility of the initiating department.

There are three main types of monitoring (FEAR0 1987):

- Inspection and surveillance monitoring: This is aimed at determining the adherence to environmental operating conditions.
- Compliance monitoring: This focuses upon compliance to formal environmental standards (e.g., effluent discharges, emissions, air and water quality).
- Effects monitoring: This is undertaken to determine the actual effects of an activity, to evaluate the effectiveness of mitigative measures and to evaluate uncertainties in predicting impacts.

According to the Environment Canada (1987) criteria for exemplary initial assessment, an IEE must contain a description of the design and management of any monitoring that is planned for the proposed project. The IEE must indicate what the objectives of the monitoring study are (i.e., effects monitoring), the items to be monitored (i.e., water quality and quantity), the data to be collected and the means of collecting the data, and the name of the person who will be responsible for the monitoring. Monitoring requires the initiation of the baseline studies, monitoring during the project and review of the project and its impacts after the work is completed.

The eight IEEs reviewed used the following monitoring methods:

Carp Airport: The IEE does not mention any monitoring or follow-up studies.

Collingwood Airport: The IEE does not mention any monitoring or follow-up studies.

Cornwall Airport: The IEE notes the monitoring of haul trucks and other contractor equipment to ensure compliance with load regulations and to prevent damage to the existing roads. It also discusses monitoring of dust created by construction activities during the site excavation and grading. It does not mention any other monitoring programs or follow-up studies. In addition, it does not mention whether the monitoring activities identified in the IEE were undertaken since the construction was completed prior to approval of the IEE.

Georgian Bay Airport: The IEE background document states that any dust arising from construction of the proposed runway extension and the lot grading will be monitored and controlled by the application of water. In addition, haul trucks and other contractor equipment will be monitored to ensure compliance with load and speed regulations and to prevent damage to the road.

Huronia Airport: The IEE background document states that erosion and sedimentation should be monitored occasionally after construction is completed in order to determine whether further mitigative action is required. However, the IEE does not state how and when the monitoring will be undertaken and who will be responsible for that work.

Kapuskasing Airport: There are no monitoring or follow-up studies mentioned in the IEE.

Kincardine Airport: The IEE background document only mentions monitoring during construction. According to the document, haul trucks and other contractor equipment will be monitored to ensure compliance with load regulations on existing roads and control of dust by the application of water on any roads used.

Timmins Airport: The IEE does not mention any monitoring or follow-up studies.

Four of the IEEs did not mention any monitoring or follow-up studies. Of the four IEEs which referred to monitoring, three dealt solely with inspection and surveillance monitoring (Cornwall, Georgian Bay and Kincardine). The IEE for the Huronia airport project notes effects monitoring for erosion and sedimentation. However, the IEE does not indicate how, when and who would be responsible for the monitoring. This information would be very important for a project like Huronia airport which is not owned or operated by Transport Canada.

When CATA makes only a financial contribution towards a project and the project is completed, it becomes the responsibility of the owners and operators of the airport to finance and undertake any effects monitoring referred to in the IEE. For a project like the Timmins airport, it would be difficult (if not impossible) to undertake effects monitoring since the IEE fails to provide any baseline information on the environment prior to the development of the project.

Monitoring must also consider whether the proponent has incorporated the IEE recommendations. The Georgian Bay and Kincardine airport projects were completed before the IEEs were approved. Therefore, it is unclear whether the inspection and surveillance monitoring recommendations were undertaken since this type of monitoring occurs during the construction phases of the project. The one IEE which refers to effects monitoring applies to a project (Huronia airport) that has not been undertaken to date. Therefore, it is impossible to know if the recommendations will be used in the future.

In all of these projects, environmental predictions made in the IEE are not translated into clear instructions for project management or for the monitoring programs needed to measure impacts. As Cornford, O'Riordan and Sadler (1984) argue, without this linkage, EIA cannot be an integral part of environmental management. CATA (Ontario Region) has no systems that will help to ensure that recommendations made in the initial environmental assessment stage will be carried out on mitigation measures, project monitoring, surveillance and required follow-up on corrective measures (especially for financial assistance projects).

9. CONCLUSION

Initial assessment is the basic foundation of the Canadian Federal Environmental Assessment and Review Process. However, the initial assessment stage of EARP has received limited evaluation (Rees 1981; Raistrick 1984). Since EARP has been, and continues to be, an integral part of environmental planning for federal departments, there is a definite need for the review and evaluation of the initial assessment stage of EARP. The purpose of this study was to examine and report on how effectively the initial assessment stage of EARP has been implemented and to identify those aspects where more effective approaches should be considered.

In two Environment Canada reports, The *Initial Assessment Stage of the Environmental Assessment and Review Process* (1987) and *Program Evaluation - Federal Environmental Assessment and Review Process (EARP) as of June 30, 7982* (1982), Transport Canada - CATA was cited as a federal department that performed exemplary initial assessment. However, an examination of what has been called an exemplary process has revealed that it fails to meet the basic criteria of initial EIA.

MAJOR FINDINGS OF THIS STUDY

Screening

Screening is not sufficient in scope. Only capital expenditure projects are considered for initial assessment. Operation and maintenance projects are not assessed.

Screening focuses upon project type and cost rather than looking at environmental impacts associated with a proposed project and the significance of these impacts. Only new airports, new runways and runway extensions are assessed for environmental impacts. All other projects are automatically excluded from the environmental assessment process.

Initial Environmental Evaluations

None of the eight IEEs that were reviewed provided a definition, description or explicit guidelines on what constitutes a *significant impact.* Therefore, a reviewer examining these initial assessment documents would be unable to understand how the assessor arrived at the initial assessment decision.

The same is true concerning the inclusion of a description of the assessment methods used. Thus, a reviewer would be unable to assess the project using the same method. As a result, the IEE is not reproducible.

The eight IEEs provided either vague criteria or no criteria at all for impact evaluation.

Public Participation

CATA (Ontario Region) lacked a clear policy direction about public participation. The screening and initial assessment stages show a complete lack of public participation. None of the eight IEEs involved public participation. The process of reaching planning decisions and the rationale behind them remain secret from the public. The public consultation techniques that were used focused on informing the press and public of projects very late in the planning process (e.g., during construction).

Monitoring

Very few projects that have undergone IEE in the Ontario Region have undertaken monitoring. Seven of the IEEs that were reviewed did not describe the design and management of any monitoring or follow-up studies.

Social Impacts

Seven of the IEEs did not address social impacts.

Other Criteria

Timing

Five of the IEEs were undertaken and completed very late in the planning process and even during, or after, construction. Generally, planning has been completed and ministerial approval has been obtained before the completion of the environmental assessment.

None of the IEEs assessed reasonable alternatives. Since the initial environmental assessment was undertaken late in the planning process, it was too late to consider alternatives to the project. Thus, the environmental assessment can only ensure that the project proceeds with minimum environmental impact.

Implementation of Initial Assessment Findings

Most of the IEEs determined that the potentially adverse effects associated with the project in question were insignificant or mitigatable with known technology. The Order-in-Council requires that the initiating department *ensure that such measures are implemented* (Section 14). However, mitigation measures were not detailed in the IEE. Seven of the IEEs did not translate environmental predictions into clear instructions for project management.

FINDINGS OF SIMILAR STUDIES

The findings of this study are consistent with the findings of other studies of initial assessment by the Canadian Federal Government:

- the 1981 Rees study, which focused on eight case studies of screening in four government departments;
- the 1982 Environment Canada study, which focused on six federal government departments (eleven systems); and
- the 1987 Environment Canada study, which focused upon improving the initial assessment process in Environment Canada.

Screening

Rees (1981) found that none of the screening procedures of the four government departments that were examined could be described as rigorous screening. The 1982 Environment Canada study found that EARP suffered from a lack of agreement on what types of proposals require screening. No organization or department had an adequate working definition of what was to be screened. No federal department had a system of dealing effectively with either programs or operation and maintenance activities. The 1987 Environment Canada study also found that operation and maintenance activities were not subject to EARP.

Rees found that screening documentation was poor and confined largely to descriptive data or checklists. Environment Canada's 1982 study found few examples of adequately documented assessments. In fact, the study revealed that most existing systems in the six federal government departments that were reviewed provided no evidence that any form of screening had taken place.

Initial Environmental Evaluation

Both the Rees (1981) and Environment Canada (1982) studies found that there were no explicit guidelines or adequate definitions as to what constitutes a *significant environmental impact* in the federal government departments that were reviewed. Environment Canada's 1982 study found that six of the eleven systems that were examined had almost no formal criteria, guidelines, policies or procedures as a basis for making screening decisions. CATA was the only system that was considered adequate in this regard. Rees could find no records of decision criteria, factor weightings or the rationale for discounting expressed environmental concerns. Rees concluded that final recommendations represented the unsubstantiated judgment of the responsible officials.

Public Participation

The 1982 Environment Canada study revealed that most programs that were examined made little provision for public discussion and involvement. Several studies indicate a lack of public participation in the initial assessment stage of EARP, the point where the exemption decision is made (Beanlands and Duinker 1983; Lang and Armour 1977; Holisko 1980; Environment Canada 1987).

Monitoring

Monitoring is an essential complement to EIA. However, the Cabinet Submission (Environment Canada 1984) stated that, *at present, construction and past construction monitoring is not an integrated part of EARP, and the relationships and responsibilities of agencies involved in the conduct and review of such an activity are not clearly laid out.*

The 1982 Environment Canada study revealed that ten of the eleven programs that were evaluated had no effective, formal monitoring or post-audit systems in place. Similarly, Beanlands (1983), Lang (1983) and Rees (1981) have documented the near total absence of follow-up studies and monitoring programs in EARP.

Social Impacts

The 1982 Environment Canada study found that eight of the eleven programs:

- demonstrated little or no consideration of socio-economic effects;
- developed very few effective socio-economic guidelines and criteria; and

- did not have readily available expert advice.

Most programs examined in the study made little provision for assessing the environmentally related social implications of major projects.

Implementation of Initial Assessment Findings

The Cabinet Submission (Environment Canada 1984) noted that the link between environmental assessment and project implementation is not well developed. Recommendations are not always translated into clear guidelines for project management or for the monitoring programs needed for effective mitigation of impacts. Similarly, Cornford, O'Riordan and Sadler (1984) noted that environmental predictions made at the EIA stage are not always translated into clear instructions for project management or for the monitoring programs needed to measure impacts.

SUMMARY OF FINDINGS

In only a very few cases did any of the aforementioned studies find that various federal departments were performing effective initial environmental assessment. In some of these studies, particular federal departments are said to be undertaking exemplary initial assessment. In particular, CATA of Transport Canada has been identified as a federal government performing exemplary initial assessment. An Environment Canada study (1982c) stated that, of the 11 programs reviewed, only CATA met EARP's main requirements. Compared to the processes that other federal government departments are using to implement the initial assessment phase of EARP, CATA's initial assessment process may be exemplary. However, this study evaluated CATA's process in terms of its effectiveness in achieving the intent of EARP and found that there are serious problems with CATA's implementation of the initial assessment phase of EARP.

This study of the implementation of EARP by one of the "best" federal departments gives some indication of how poorly the federal government implements EARP's initial assessment phase overall. This report, along with Environment Canada's 1982 and 1987 studies, has found that, with the exception of some selected capital projects, most projects do not implement EARP. The Environment Canada (1982) study revealed considerable differences in the application of the process among departments and agencies. The study found screening systems to be slow, *ad hoc,* seemingly inconsistent and often lacking documentation of a type suitable for public scrutiny. The 1987 Environment Canada study also found that the federal government performed initial assessments that were inconsistent in type, quality and depth. Rees (1981) summarized that *through most of the seven-year history of EARP, screening procedures have been entirely ad hoc, undocumented and impossible to evaluate. Current approaches remain differentially developed, generally inadequate and unenthusiastic in implementation by key departments.*

The Cabinet Submission (Environment Canada 1984) noted that the implementation of EARP is a poor example of administrative practice: it varies from program to program and is often difficult to document thereby reducing its accountability. This report identifies procedural deficiencies in the initial assessment practices of a federal government department that was rated as one of the "best" in this regard. Similar studies raise serious questions about the quality of initial assessment and decision making in the federal government. Significant improvements to the initial assessment phase of EARP are obviously required.

RECOMMENDED IMPROVEMENTS TO THE INITIAL ASSESSMENT PHASE OF EARP

Based on the procedural deficiencies identified in this study of CATA, other cited studies and a literature review, several improvements to the initial assessment phase of EARP can be recommended as follows.

Screening

The Order-in-Council aims to make the screening process more visible and systematic to help resolve the apparent conflict of interest. It attempts to achieve this goal by having each federal department, in co-operation with FEARO:

- establish written environmental assessment procedures to be followed;
- develop a list of projects which will be automatically excluded from EARP; and
- provide FEAR0 with information on the implementation of EARP.

EARP was originally intended to take environmental matters into account when projects, programs or activities were being planned and implemented. However, screening at CATA (Ontario Region) was restricted to capital projects. Similarly, in the study undertaken by Raistrick (1984), it was found that only federal projects or capital

expenditures are being assessed, and not programs and activities or operating and maintenance expenditures.

It is recommended that all federal government departments fulfil this Order-in-Council requirement. It is further recommended that FEAR0 publish these written procedures and automatic exclusion lists for public review. Each federal government department should be required to publish a screening report on the implementation of EARP and register it with FEAR0 as part of the "public record."

Thirdly, it is recommended that federal government departments be required to screen operation and maintenance projects as well as capital projects for potential adverse environmental impacts.

IEE Content

It is recommended that all initial assessment documents be required to meet the basic and essential criteria developed in the Raistrick (1984) study.

Definition of "Significant Impact"

Screening and initial assessment documents must include a definition of significant environmental impact.

It is recommended that environmental screening and initial assessment documents should either define what is meant by a "significant impact" or provide some other written justification for decisions made.

Assessment Criteria

FEAR0 **(1984)** has developed assessment criteria. They include: magnitude, prevalence, duration and frequency, risk and precedent.

It is recommended that these specific criteria be employed in the environmental screening and initial assessment documents when they describe and analyze impacts.

It is further recommended that screening and initial assessment documents contain a brief description of how the final decision concerning the project was reached.

Public Participation

At present, the public is not involved in the early stages of the EIA process. Since provisions for public input are not made explicit in EARP, such input does not tend to materialize. Public participation should be initiated before irrevocable decisions are made on projects. As a result, the public will be able to gain information about a proposed project, and planning and administrative decisions will be more open and responsive.

It is recommended that federal government departments be required to inform the public of a proposal in the early planning stages of a project.

Monitoring

After the initial assessment review has been completed, generally no follow-up studies occur. Departments must conduct comprehensive monitoring programs on selected projects.

It is recommended that an adequate administrative framework be developed in federal government departments to identify who is responsible for monitoring and follow-up duties in various monitoring programs.

Social Impacts

The concept of EARP has been interpreted to refer primarily to physical changes to the environment. However, social and economic impacts must also be taken into account in the initial assessment process. These socio-economic impacts include, but are not limited to:

a the potential social change associated with the biophysical impacts of a proposal;

- social impacts resulting from changes in community, traditional life-styles and social interrelationships, population numbers and make-up, housing, health and civil protection services (FEAR0 **1986);** and

- economic impacts resulting from changes in the land base, changes in land values, employment levels and local government tax bases and revenues.

It is recommended that all initial assessment documents clearly demonstrate that social and economic impacts have been fully assessed in the screening and initial assessment stages of EARP.

Timing of Initial Assessment

Environmental screening should occur at a early stage in the planning process. The Order-in-Council (Section 3) requires that environmental implications of projects are

considered as early as possible and before irrevocable decisions are taken. However, the requirements do not specify any time limits. As a result, environmental screening continues to occur late in the planning process.

It is recommended that initial assessment documents demonstrate that irrevocable decisions have not been made at the time of the environmental assessment.

Mitigation Measures

Often the completion of an initial assessment review marks the end of EARP's involvement in a project. The mitigative measures recommended in the initial assessment may not be used when the project is developed.

It is recommended that a mitigation plan become part of all screening and initial assessment documents. This plan must clearly outline mitigation measures. It must also provide the project team with clear and detailed information on the mitigative measures that are necessary during the planning, design, construction and operation phases. Information on construction scheduling and techniques must also be included.

Implementation of Initial Assessment Findings

The initiating department is responsible under the Order-in-Council (Section 14) for ensuring that mitigative measures are implemented.

It is recommended that individual departments set up an implementation procedure to ensure that mitigative measures and recommendations made in the screening and initial assessment documents are incorporated into the project's planning, construction and operation, and that documentation of the implementation procedure is produced for each project.

Previous reviews of environmental impact assessment and EARP have made similar recommendations. Therefore, simply pointing out deficiencies and recommending changes does not guarantee change. What must be examined is why these recommendations have not been acted upon to date and why these recommendations for procedural changes in the initial assessment phase of EARP will not be sufficient to correct the deficiencies highlighted in this and other studies.

THE NEED TO ALTER THE CURRENT APPROACH TO IMPLEMENTING EARP

This report on the implementation of the initial assessment phase of EARP by CATA (Ontario Region), along with the Environment Canada 1982 and 1987 studies, has found that EARP is generally not implemented. Under EARP's self-assessment approach, every federal government department is responsible for integrating environmental impact assessment into its own planning system. The 1982 Environment Canada study noted that a lack of human resources was frequently given as an excuse for not implementing EARP. However, as the study rightly argues, these government departments obviously do not think that the EARP directive has priority over other work in their department in terms of allocation of resources. They give the EARP directive low priority and, as a result, it is poorly implemented. Therefore, the federal government's environmental assessment policy and implementation strategy must be addressed, since they led to the failure of the implementation of EARP as originally conceived.

Theeffectiveness of EIA depends upon the strategy taken by the government to implement it and the adoption of a system which ensures that the procedure is followed. As previously discussed, when the Honourable Jack Davis (then-Minister of Fisheries and the Environment) introduced EARP in 1973, it was believed that EIA was too new and too experimental to be legislated.

The Canadian federal government's approach towards EIA was aimed at the flexible evolution of EARP, allowing the new and untried process to evolve on the basis of experience, as well as avoiding the litigation problems associated with the U.S. National Environmental Policy Act. As a result, EARP and its procedures were designed to be broad, flexible and adaptable to the needs of each federal government department. The flexibility of EARP has proved to be both a strength and a weakness. It has allowed the process to evolve and new techniques to develop on the basis of experience gained. However, as the Cabinet Submission (Environment Canada 1984) noted, *the looseness of the system means that individual projects with potentially significant environmental impacts could have escaped referral for public review or failed to have been redesigned to mitigate adverse effects.* Nonetheless, the federal government is dedicated to ensuring that any future federal environmental assessment process continue to have sufficient flexibility (FEAR0 1987b).

Associated with this rather loose framework of policy direction is the fact that EARP was conceived as a self-assessment process. Every government department is responsible for assessing its own projects for environmental during the planning process. This approach intended to make the federal government departments responsible for environmental planning and management, rather than a centralized government agency. The federal government selected this process to deal with environmental implications of its own proposals for the following reasons (FEAR0 1987b):

> *The government wanted to imbue an environmental awareness throughout its many departments; it wanted to have the environmental implications of any government activity or proposal assessed and dealt with as early as possible in its planning, because altering, for environmental reasons, a proposal that was well advanced might be very costly; it wanted to integrate the cost of sound environmental planning into the cost of proposals; it wanted the department making a proposal to address any public concern that might arise from it, and to consult directly with people who might be affected by the environmental effects of a proposal.*

The Cabinet Submission (Environment Canada 1984) noted that this approach also reflects the principle of ministerial responsibility.

However, as former Minister of the Environment, the Honourable Tom McMillan, notes, one basic weakness of EARP is the way in which the concept of self-assessment is applied. He observed *primary responsibility for determining a proposed development's environmental significance rests not with the Minister of the Environment,* but *with the* Minister *of the department that initiates the project* (FEAR0 1987b). Having the same federal departments who are responsible for initiating proposals undertake environmental assessment for these proposals creates an obvious conflict of interest. The 1982 Environment Canada study acknowledges such a conflict of interest is possible, since the manager who has an interest in completing a particular project quickly may be less inclined to look closely at environmental consequences that, if recognized, could delay project implementation.

The internal self-assessment review process of EARP's initial assessment phase weakens the potential of the EIA procedure as a means of changing decision-making processes by giving the proponent wide discretionary powers. The wide discretion conferred on the initiating department allows only those projects which the proponent wishes to be screened to be subjected to the procedure. The proponent has the option to submit his proposal to EARP based on the assumption that he/she has conducted a complete and unbiased screening of the proposal upon which he/she would feel *obligated* to submit to EARP if an EIA was found to be necessary. The proponent agency, instead of *objectively* deciding whether an assessment is needed based on whether there will be any significant environmental or social impacts, may make a decision on the basis of political or economic pressures. As Estrin and Swaigen (1978) point out:

> *Obviously, considering who has the responsibility for initiating the EARP process, it would be naive to think that proponents are entirely unbiased as to the damage their projects might cause. It is a serious flaw in the process that they don't even have to do a preliminary screening on a project unless they feel that it might have significant effects. The decision is solely theirs.*

Under EARP, there is no legal appeal to decisions made by the proponent department. Decisions made by the proponent during the screening process are beyond the legal right of the government and public to appeal. There is no legal right to demand compliance, nor a legal duty to enforce. EARP does not allow for lawsuits that would require to undertake a proponent department an EIA. As a result, government departments are under no legal pressure or public pressure to implement EARP.

It must be emphasized that EARP emerged as a result of the federal government's failure to assess the environmental impacts associated with their projects in the past. However, EARP uses an approach that is based on flexibility, self-assessment and lack of legal accountability and, therefore, does not ensure compliance. Paul Emond (1978) notes:

> *The notion that a procedure designed to "force" certain parties to do certain things should ultimately depend on the initiative and co-operation of those parties is illogical. [EARP as an in-house process] is subject to all the forces of bureaucratic self-interest and inertia characteristic of contemporary governing processes.*

Therefore, it is not surprising that Raistrick found, when preparing the 1987 Environment Canada study, that most program managers did not feel any pressure to use EARP because accountability is not built into EARP. Rees (1981) has noted that self-assessment, combined with this total lack of any legal pressure, *underscores what may well be the most remarkable functional reality of EARP, and certainly the one that has drawn the most*

critical fire: its success in meeting the basic environmental objectives is wholly dependent on the spirit of cooperative volunteerism within and between individual operating agencies and departments. EARP has failed at the initial assessment phase because the federal government continues to rely on the concept of absolute self-assessment and because EARP lacks legal accountability.

Recent Improvements to EARP

Pressure mounts to give EARP a stronger mandate. In response to the 1982 Environment Canada study and the Cabinet Submission (Environment Canada 1984), the Government of Canada promulgated the *Environmental Assessment and Review Process Guidelines Order* which changed the authoritative basis of EARP from a Cabinet directive to an Order-in-Council. According to the 1984 Cabinet Submission, the federal government chose to pass an Order-in-Council for EARP because it would (Environment Canada 1984):

- *be easier to pass and would not take space on the legislative calendar;*
- *link EARP direct/y to a specific statute, but would be easier to amend should amendments prove desirable;*
- *be accepted by proponents of a stronger EARP as a step forward;*
- *be able to address satisfactorily most of the problems current/y confronting the process; and*
- *be amendable, if desired, for presentation as an interim step leading to legislation.*

To ensure that the initial assessment phase of EARP is being applied consistently across the federal government, the Order-in-Council addressed the need for written procedures as part of an initial environmental assessment for a project. It specifies that the initiating department will develop these procedures in co-operation with FEAR0 (Section 11). However, three years after the Order-in-Council, not all departments have developed and implemented written procedures.

FEAR0 has published revised guidelines which reflect the Order-in-Council to assist federal government departments in the screening process. These guidelines include more explicit criteria for determining the significance of environmental impacts. But neither the Order-in-Council nor the screening guidelines are legally binding requirements. They are *guidelines* rather than regulations. Consequently, there is a continued strong reliance on the environmental screening procedures developed by the proponent departments themselves, which are not subject to public review. The proponent continues to determine if any significant environmental effects associated with proposed projects are likely to occur. *Significant* continues to be defined by the department's rule-of-reason. Under the Order-in-Council screening procedures and criteria will continue to differ radically among departments.

Recently, FEAR0 (1987b) produced a Green Paper outlining possible improvements and additions to the present environmental assessment process. The paper discusses possible policy and process changes that could improve public accessibility to federal environmental decision-making, strengthen the openness of the self-assessment approach and improve the public review phase of the process. The paper addresses the scope of the EIA process, improvements to the initial assessment phase, improvements to the public review phase, the fostering of public participation and resource implications.

With regard to improvement to EARP's initial assessment phase, the paper acknowledges that many positive developments have occurred in EARP and in its implementation since the 1984 Order-in-Council. However, it recognizes that a variety of procedural changes could substantially improve public access to environmental assessment studies prepared by departments and help ensure predictability and consistency in the implementation of EARP. The paper presents the following four changes to initial assessment procedures for consideration:

1. *There could be a requirement under the Environmental Assessment and Review Process that departments address general social, health, economic and cultural implications of environmental change.*

2. *Screening of projects ear/y in their planning as currently practised might reasonably remain unchanged, as would the requirement to report screening decisions to the Federal Environmental Assessment Review Office and to develop assessment procedures. The present mechanism permitting environmentally benign projects or c/asses of projects requiring no further consideration under the process should similarly remain, However, a new criterion could be introduced. A list of types of proposals which would require a mandatory initial environmental evaluation might be considered.*

The list could be developed through consultation between federal departments and the Federal Environmental Assessment Review Office and issued as a guideline under the authority of an Order-in-Council. Alternatively, the list could be subsequently prescribed in regulations pursuant to some form of environmental assessment legislation. Whichever approach is taken, public comment on this list could be invited in accordance with the federal government's Regulatory Policy and the Citizens' Code of Regulatory Fairness.

3. The scope of the initial environmental evaluation could be specified, again through a guideline or regulation, as appropriate, including, but not limited to: rationale; possible alternatives; biophysical effects; related social, health, economic and cultural impacts (including impacts external to Canadian territory arising from activities with Canada); mitigating measures; project implementation; and post-implemen ta tion monitoring plans.

4. The initial environmental evaluation could be published and made available in a public location in the area affected by the project. Residents of the area could be notified of its availability through notices released to local media posted in public places, distributed by general mailing or by other information distribution methods. A reasonable period, possibly 30 to 60 days, could be allowed for public response to the initiating department.

Although these recommendations are good, they do not go far enough:

On recommendation 1: This study indicates that social impacts, although emphasized in CATA's EIA policy and in the Order-in-Council, are not adequately addressed in practice. Therefore, making a requirement that departments address social, health, economic and cultural implications in the current Order-in-Council does not go far enough. The issue of *how* to ensure that social impacts are addressed adequately by the federal government departments in practice would remain unresolved.

On recommendation *2:* The Green Paper states that screening currently occurs early in the planning process. However, this study found that initial assessment occurs very late in the planning process. The recommendation suggests that a list of types of proposals requiring a mandatory IEE should be created. CATA had such a list, but it was limited to new airports, new runways and runway extensions, and even this was not always adhered to. Eventually, all projects that did not require a mandatory IEE were automatically screened out of EARP. This recommendation refers to the possibility that the public could be invited to make comments on the list. However, currently the public have no right to review and make comments on the written environmental assessment procedures that have been developed as a result of the Order-in-Council.

On recommendation 3: This study concurs with this recommendation that the contents of IEEs should be specified. However, if this requirement remains as a guideline, no process exists to ensure that this content requirement is adhered to by the federal government departments.

On recommendation *4:* IEEs should be made available to the public. This study concurs with the recommended time period for public notification and feedback. Unfortunately, EARP, as it stands today, does not require the screening process to include the public. As a result, the screening process, which is the initial planning stage of EIA and the point where the decision of exemption is made, does not necessarily incorporate public participation and accountability. As this study and other studies have found, the public remains uninvolved and uninformed until a project decision is announced. Moreover, the public cannot appeal the initial assessment decision.

In addition, the Green Paper recommends another improvement to the public review phase: if the public requested an independent public review of a project, the initiating Minister could be required to respond publicly, within a specified period of time, stating the reasons for his decision if the request is denied. A mechanism could be developed to ensure that decisions about the need for a public review reflect the concerns of both the initiating Minister and the Minister of the Environment.

However, this study contends that the timing of the initial assessment continues to be a problem which must be addressed. Currently, an IEE is prepared late in the planning process. As a result, any public involvement, regardless of the time period allowed for comments, would be ineffective since the initiating departments would already be heavily committed to the project. Therefore, some legal requirement must be developed which will ensure that the initial assessment be done early in the planning process before irrevocable decisions are made.

The Order-in-Council and the recommendations of the Green Paper aim to increase the openness of the self-as-

sessment approach. However, both fail to deal with the crucial issues of accountability and compliance.

Legislating EARP

The effectiveness of any environmental assessment procedure depends upon how the institutional arrangements that are chosen to implement it force decision-makers to change their current decision-making practices (McCallum 1975):

> *The framework chosen to implement the process is the key element which will govern its effectiveness for without coercive institutional arrangements there is no incentive for the decision-maker to alter his existing norms for decision. It is not, therefore, adequate to adopt the concept without also adopting a system which will ensure that the procedure will be followed.*

Environmental assessment should not be an operation that every federal government department can choose to undertake only when convenient. If it is to become part of a proponent's decision-making process, a mechanism which will require decision-makers to alter their existing decision-making practices must be formulated.

The Order-in-Council and the Green Paper build upon the earlier Cabinet directive. Despite their recommendations, the fulfilment of EARP's potential continues to rely entirely on the willingness of each federal government department to adhere to EARP's intent. Only if a procedure is put into place to make sure that all federal government departments adequately implement EARP's initial assessment phase will these recommendations be successful in achieving their objectives.

This will require enforceable compliance. Currently, federal government departments are not legally bound to undertake EARP. They must come under some legal pressure to do so. EARP should be legislated. This position is supported by the Cabinet Submission (Environment Canada 1984) which noted that the Order-in-Council should be seriously considered as a prelude to legislation thereby providing the necessary basis for an immediate re-organization of EARP with the prospect of statutory enactment following process consolidation.

Legislation would transform EARP into a quasi-regulatory process (Environment Canada 1984). Statutory enactment of EARP would also reinforce the federal government's commitment to environmental impact assessment. Legislating EARP (Environment Canada 1984) would also:

- *demonstrate a strong commitment of the government to this important aspect of planning by giving EARP the sanction of Parliament;*
- *enshrine in law opportunities for public involvement in government decision making;*
- *provide clear lines of authority and responsibility, i.e., by circumscribing in law the scope of EARP and of public review panels, the process would be made more predictable and therefore easier to understand and implement;*
- *provide an enhanced degree of federal authority for federal-provincial co-operation in public review, (most provinces have specific legislation in this field); and*
- *be compatible with the continuing high public interest in both environmental issues and the openness of government decision making.*

Disadvantages with EARP legislation include difficulties in changing EARP should the need arise. The Green Paper notes that there are some weaknesses in the present federal environmental assessment process which require correction, *but it is even more important to ensure that a future federal environmental assessment process has sufficient flexibility to accommodate new methods and new scientific information as it emerges* (FEAR0 1987b). Although some degree of flexibility should be maintained in EARP, unless the basic policy of EARP's self-assessment implementation is altered, EARP's initial assessment phase will continue to be poorly implemented.

Compliance cannot be achieved by keeping the initial assessment phase of EARP completely within the proponent federal government department. Therefore, any EARP legislation must address the need for EARP to be taken *out-of-house, so* as to place outside pressure on the federal government departments and ensure compliance. Taylor (1984) notes:

> *Although insiders often cite the "reasonableness" of the policy-makers when faced with choices involving the environment, they lay the most stress on outside pressure. The agencies' political environments have become much more turbulent. People pay more attention to what all federal agencies do and feel entitled to have some say in the decision-making process. In environmental issues, the EIS process facilitates and channels this public pressure. Inside analysts feel directly dependent on*

outside pressures for their effectiveness. They express this dependence in various ways: "Outsiders keep us honest." "You write a report more carefully when you know its going to be made public." "The environmentalists balance the economic interests and allow us to make the right decision."

Since the aim of EIA is to become part of the decision-making process, a procedure must exist within EARP legislation that will ensure that the proponent government departments have submitted all their projects to EARP and that a complete and unbiased environmental assessment has been undertaken early in the planning process. As a result, regulations for ensuring compliance in any EARP legislation should include the clearly defined written procedures and initial assessment practices as well as a clearer role for FEARO.

Written Procedures

1. FEAR0 must be able to reject inadequate initial assessment procedures proposed by federal government departments.

2. The initial assessment written procedures for each federal government department must be subject to public review.

3. Written procedures for each federal government department must identify in their administrative framework where the responsibility and accountability centres for EARP are located.

Initial Assessment Practice

1. Federal government departments must be legally required to participate in appropriate phases of initial assessment.

2. A legal provision for public participation in the initial assessment phase of EARP must be established.

3. The government and the public must have the legal right to appeal initial assessment decisions.

Role of FEAR0

Currently, in overseeing EARP, FEAR0 (1987b):

provides advice and procedural guidelines for the application of the process, is secretariat for public reviews carried out by panels appointed by the Minister of the Environment and normally provides the chairman for each panel. When necessary, it negotiates provincial or territorial participation in a review, federal participation in a provincial review or any other co-operative arrangement. The office advises the Minister of the' Environment on environmental impact assessment and is the federal voice on environmental impact assessment in international organizations and meetings.

Based on the obvious need for ensuring compliance and legally binding requirements in EARP's initial assessment phase, FEAR0 should be given a larger role to play in the initial assessment phase. FEARO's main involvement in EARP is focused upon the final stage of EARP (the environmental assessment document and public hearing). FEARO's responsibilities in the initial assessment phase of EARP are limited currently to advising federal government departments if and when they seek advice.

FEAR0 should be given greater authority in the initial assessment phase of EARP. As ENGO points out, (Canadian Environmental Advisory Council 1981) since:

ninety-nine per cent of the projects going through EARP never arrive at a public panel, the (proposed) legislated mandate, at a minimum, should specify provisions for a formal procedure for the screening process including a public register with criteria for screening.. .[U]nder this (proposed mandate) FEAR0 should have the right to deal with issues that are not referred by screening, that is, the right to initiate proceedings.

To allow FEAR0 to become more involved in all stages of EARP and act as a watchdog over its implementation, the EARP legislation must clarify FEARO's responsibilities. Additional resources will also be required to undertake this increased responsibility.

In addition to these requirements, the EARP legislation should also include the requirements outlined in the Green Paper. All these recommendations aim to create a more open, rigorous, systematic and accountable initial assessment process. A legally based form of compliance will help address the concerns around potential conflict of interest and ensure compliance.

It is time for the federal government to legislate EARP. Environment Canada (1984) has noted that Canada no longer has the kind of formal well developed procedures that once made it an international leader in this regard:

Among the developed countries, the United States, various Australian states, New Zealand, the Netherlands, Norway and most recently the European Economic Community have developed or are now

finalizing comprehensive EIA requirements, most of which are based in law. In the developing world, Malaysia, the Philippines, Thailand and Indonesia now have explicit EIA procedures. Thus, while Canada is still regarded as one of the most practised exponents of EIA, we have fallen behind a number of others in providing the institutional underpinning and authority regarded as necessary by the global community (and by most of our own provincial jurisdictions).

EARP must be given a stronger mandate in the form of legislation which is aimed at ensuring compliance, accountability and public participation in all its phases.

SUMMARY

Generally, the response of government to growing environmental problems has been poorly planned and implemented. The government is responsible for protecting the environment. However, it often causes environmental damage as a side effect of pursuing growth. Governments will continue to pursue growth, but they must become more concerned about the alarming negative effects of this growth upon man and the environment (MacNeil 1971). The quality of our environment must not be sacrificed for the short-time benefits of economic development.

The increasing demand for solutions to the problems besetting our environment over the last two decades has led to new approaches to environmental protection. Some progress has been made over the past years, but clearly we still need to improve our current environmental protection practices. Regardless of the problems and inefficiencies associated with EIA, this preventative approach to environmental protection will, in all likelihood, continue to be the major mechanism for achieving environmental objectives in Canada. EIA is becoming a basic tool for decision making throughout project development at the federal, provincial and local levels of government. Therefore, we should assess its associated problems and inefficiencies, and improve our current EIA practices.

Although EARP has influenced planning decisions to some extent, it has fallen short of original expectations. An in-depth look at what has been called "exemplary" initial assessment by one of the federal government's "best" departments reveals that EARP's initial assessment and implementation phases have serious problems. Current approaches to EARP's initial assessment phase are generally inadequate and poorly implemented by all federal government departments.

Implicit in EARP is the requirement that environmental assessment be used as a planning tool. EARP stresses the importance of relating environmental, social, economic and technical feasibility studies to each other, and conduct them at about the same level of detail. The assessment of environmental effects associated with a proposed project should influence the initiating department's decision-making processes. In reality, environmental considerations are seldom, if ever, the sole criteria governing decisions on a project and are not always the dominant ones (OECD 1979). This study found that undertaking environmental impact assessment studies is not the same as using the recommendations from these studies in the decision-making process. As a result, the basic decision-making premises of federal government departments are not being significantly altered as originally intended.

In many situations, the decision to undertake environmental studies occurs after the decision to undertake the project has been made. Generally, the IEEs that were reviewed were approved after the federal government department had made irrevocable decisions and financial commitments. Consequently, the decision-maker can only implement mitigative measures to combat adverse environmental impacts. For EIA to be effective, it must be undertaken early in the planning process. Only then can the decision-maker choose the best alternatives for avoiding or minimizing environmental impacts. The decision-maker must be able to determine the siting and form of the development, or determine if there will be a development, with full knowledge of all potential environmental implications.

Remedies for the misuse of, and problems associated with, EARP do not require the development of new EIA techniques. EARP has fallen short of original expectations because the potential of environmental impact assessment cannot be fulfilled solely through the adoption of its concept. As Richard Andrews notes (Armour 1981), EIA is limited in that:

administrative agencies are quite capable of implementing new procedural requirements without necessarily making the changes in their substantive actions that the procedures were intended to bring about.

Whether EIA can change the decision-making processes to promote better environmental protection, depends upon how the government implements it and the system which will ensure that the resulting procedure will be followed.

The need for improvements to EARP has received significant review. To deal with the serious problems associated with EARP's initial assessment phase will require much stronger measures addressing the administration and self-assessment policy of EARP than the federal government has taken to date. Because EARP is not legislated and managed by a strongly based administrative authority, the initial screening phase of EARP is not a well-structured, documentable process that is consistently applied in all federal government departments. EARP should be legislated and the federal government should focus on implementation of the initial phase of EARP.

EARP, as an approach to environmental protection, relies almost entirely on the willingness of proponent agencies to adhere to its intent. However, to date, this approach has not been effective. The emphasis on self-assessment is the main flaw in the federal government's approach to the initial assessment phase of EARP. Until the basic policy of EARP's self-assessment implementation is altered and EARP is legislated, it will continue to be given low priority and be poorly implemented by even the "best" federal government departments. The initial assessment phase of EARP should not be allowed to continue to be an academic exercise for decisions already made.

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