

THE ENVIRONMENTAL ASSESSMENT AND
REVIEW PROCESS: AN ANALYSIS OF
THE SCREENING PHASE

by

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ABSTRACT

This thesis examines the procedures for screening of environmentally significant projects under the federal Environmental Assessment and Review Process (EARP). The EARP screening process refers to the procedures employed by individual departments and agencies to examine proposed activities within their control to determine whether they are likely to have significant environmental effects.

I define an "optimal" screening process based on several normative criteria, test the effectiveness of the existing procedures in four federal government departments against these criteria, and suggest means of improving the process. Because the government agencies and their Ministers are theoretically accountable to Canadians, criteria for assessment are derived from both common sense and democratic principles.

Methods used in the thesis follow the traditional social science mould:

- 1) literature review and background research into impact assessment including a review of the U.S. process, EARP, and the screening mechanism in particular.
- 2) brief review of literature to provide a rationale and theoretical framework for the evaluation criteria.
- 3) interviews and correspondence with persons associated with the screening process in order to get first-hand documentation of departmental operations in screening.
- 4) content analysis of eight case studies from the files of the four selected agencies.

The results of the analysis of the screening phase of EARP indicate a number of deficiencies. The following summarizes my findings:

The Department of Energy, Mines and Resources (EMR) only instituted its screening process in mid-1979, six years after the implementation of EARP. I examined two projects selected for this purpose by EMR, and found

them to be non-systematic, with no formal decision criteria or guarantee of public consultation.

In the Department of Public Works (DPW) Marine Engineering Program (Pacific region) the so-called screening process was similarly judged inadequate in the case of two projects selected by DPW for review by this study. A third project was also examined because it had actually been referred to the formal assessment phase of EARP. However, there was no file documentation indicating any screening of projects other than routine referral to environmental protection agencies for their comments. This lack of a formally documented screening process was surprising given the detailed guidelines for screening specified by the Environmental Analysis Division at DPW headquarters in Ottawa.

The screening process in the Department of Indian and Northern Affairs (DINA) (Northern Affairs Program) was particularly difficult to analyse. Only one example of screening was available with documentation and it was found to be deficient in almost every respect. Moreover, DINA allowed this project to proceed against the recommendations of the two committees used for screening and in the absence of any stated policy rationale.

The screening process in the Ministry of Transport (MOT) Canadian Air Transportation Administration (Pacific Region) met more of the thesis assessment criteria than any of the other departments assessed. Five projects, of which two were examined in detail, were selected for study in consultation with MOT officials in Ottawa and Vancouver. There is a formal systematic screening process with criteria to identify potentially significant projects. The process suffers from several deficiencies, the principal one being the limited standards for screening decisions. The principal criterion for further environmental assessment is public controversy, yet there is no

effective means of ensuring that the public has any involvement in the screening process. Documentation of environmental effects in the Initial Environmental Evaluation was judged inadequate.

The role of the Department of the Environment (DOE) (other than FEARO) in the EARP screening process was briefly examined. At present, DOE participation is passive, depending on other government agencies to voluntarily refer projects for DOE's comments and advice. There also appears to be some confusion over the role of DOE as an initiator or proponent in referring projects to the formal assessment phase.

This analysis indicates that major changes to departmental screening procedures are necessary. Recommendations for improving the screening process include: development and implementation of systematic screening procedures with rigorous standards for application; development of practical decision criteria to determine project significance; ensuring opportunity for public participation; and making the process "open" by ensuring adequate information for making screening decisions and by providing full access to all relevant documentation to concerned parties.

.....

W. E. Rees, Thesis Supervisor

SOMMAIRE

Cette thèse étudie les procédures d'examen préalable de projets qui ont un effet significatif sur l'environnement dans le cadre du Processus fédéral d'Evaluation et d'Examen en matière d'Environnement (PEEE). Le processus d'examen préalable du PEEE se réfine aux procédures utilisées par les départements individuels et agences qui examinent les activités proposés et relevant de leur contrôle afin de déterminer l'éventualité de leur effet significatif sur l'environnement.

Je définis un processus "optimal" d'examen préalable sur base de plusieurs critères normatifs, je teste l'efficacité des procédures existantes je suggère les moyens d'améliorer ce processus. C'est parce que les agences gouvernementales et leurs Ministres sont théoriquement responsables envers le peuple Canadien que les critères d'évaluation sont dérivés à la fois du sens commun et des principes démocratiques.

Les méthodes utilisées dans cette thèse suivent le moule traditionnel des sciences sociales:

- 1) Revue de la littérature et recherche de fond sur l'évaluation des impacts, y compris une revue du processus aux Etats-Unis, du PEEE et en particulier des mécanismes d'examen préalable.
- 2) Brève revue de la littérature en vue d'établir un cadre rationnel et théorique pour les critères d'évaluation.
- 3) Entretiens et correspondance avec les personnes associées au processus d'examen préalable en vue d'obtenir une documentation de première main sur les opérations départementales d'examen préalable.
- 4) Analyse de contenu de huit cas à partir des dossiers de quatre agences sélectionnées.

Les résultats de l'analyse de la phase d'examen préalable du PEEE indiquent un certain nombre d'imperfections. Mes conclusions sont résumées ci-après:

Le Département de l'énergie, des Mines et Ressources (DEMR) a institué son processus d'examen préalable au cours de l'année 1979 seulement, soit six ans après la mise en oeuvre du PEEE. Ayant examiné deux projets sélectionnés à cette intention par le DEMR, je les ai trouvés non-systématiques, sans critère de décision formelle ni garantie de consultation publique.

Dans le Département des Travaux Publics (DTP), Programme de Génie Maritime (Région Pacifique), le processus d'examen préalable a également été jugé inadéquat dans le cas de deux projets qui avaient été sélectionnés par le DTP à l'intention de cette étude. Un troisième projet a aussi été examiné parce qu'il avait été en fait renvoyé à la phase d'évaluation du PEEE. Cependant il ne contenait, pour toute documentation indiquant un processus d'examen préalable des projets, qu'un renvoi de routine pour commentaires aux agences de protection de l'environnement. Ce manque de processus d'examen préalable formellement documenté était surprenant, étant données les directives détaillées concernant l'examen préalable spécifiées par la Division d'Analyse de l'Environnement au Siège du DTP à Ottawa.

Le processus d'examen préalable dans le Département des Affaires Indiennes et du Nord (DAIN) (Programme des Affaires du Nord) a été particulièrement difficile à analyser. Un seul exemple d'examen préalable était disponible avec la documentation et il a été jugé inadéquat dans presque tous les domaines. De plus le DAIN a permis à ce projet d'aller de l'avant, malgré les recommandations de deux comités chargés de l'examen préalable et en l'absence de toute politique rationnelle établie.

Le processus d'examen préalable dans le Ministère des Transports (MDT) Administration Canadienne des Transports Aériens (Région du Pacifique) a rencontré plus de critères de base de cette thèse qui

aucun autre département examiné. Cinq projets, dont deux examinés en détail, ont été sélectionnés pour examen en consultation avec les responsables du MDT à Ottawa et Vancouver. Il y a un processus formel d'examen systématique préalable contenant des critères pour identifier les projets potentiellement significatifs. Le processus souffre de plusieurs lacunes, la principale étant le manque de bases pour les décisions d'examen préalable. Le critère principal pour une évaluation ultérieure de l'environnement est la polémique publique, et pourtant il n'y a aucun moyen effectif de s'assurer que le public soit impliqué dans le processus d'examen préalable. La documentation sur les effets sur l'environnement dans l'Evaluation Initiale de l'Environnement a été jugée inadéquate.

Le rôle du Département de l'Environnement (DDE) (autre que BFEEE) dans le processus d'examen préalable du PEEE a été brièvement examiné. Pour l'instant, la participation du DDE est passive; elle dépend d'autres agences gouvernementales pour renvoi volontaire de projets au DDE dans le but qu'il fasse ses commentaires et donne son avis. Il y a aussi confusion au sujet du rôle du DDE comme initiateur dans le renvoi des projets à la phase d'évaluation formelle.

Cette analyse indique que des changements majeurs dans les procédures départementales d'examen préalable sont nécessaires. Les recommandations pour améliorer le processus d'examen préalable comprennent: le développement et la mise en oeuvre des procédures systématiques d'examen préalable avec des bases rigoureuses d'application; le développement de critères pratiques de décision pour déterminer la signification d'un projet; assurer la possibilité d'une participation publique; rendre le processus "ouvert" en assurant une information adéquate pour les prises de décision d'examen préalable et en permettant le plein accès de toute documentation utile aux parties concernées.

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ACRONYMS AND ABBREVIATIONS USED IN TEXT

AWAC	Arctic Waters Advisory Committee
CEQ	Council on Environmental Quality (U.S.)
DFO	Department of Fisheries and Oceans
DINA (or DIAND)	Department of Indian and Northern Affairs
DOE	Department of the Environment (or Environment Canada)
DPW	Department of Public Works (or Public Works Canada)
EARP (or EAR process)	Environmental Assessment Review Process
EIS	Environmental Impact Statement
EMR	(Department of) Energy, Mines and Resources
EMS	Environmental Management Service
EPS	Environmental Protection Service
FEARO	Federal Environmental Assessment Review Office
FMS	Fisheries and Marine Services
IEE	Initial Environmental Evaluation
MOT	Ministry of Transport (or Transport Canada)
NEPA	National Environmental Policy Act (U.S.)
RODAC	Regional Ocean Dumping Advisory Committee
RSCC	Regional Screening and Coordinating Committee

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I INTRODUCTION

A. The Problem

This thesis examines procedures for the identification and screening of environmentally significant projects under the federal Environmental Assessment and Review Process (EARP or EAR process). I describe an "optimal" screening process based on several normative criteria, test the effectiveness of the screening process in four federal government departments,¹ and suggest means of improving the existing process. My research goal then, is to assess existing institutional arrangements to implement the EARP-related screening. Are screening procedures operating optimally or even effectively? I develop evaluation criteria based on democratic norms inherent to Canadian society, a review of the American process, and "common-sense" expectations;² compare and evaluate existing approaches against my normative framework, and recommend improvements to EARP-related screening procedures.

B. The Canadian Environmental Impact Assessment Process

The Environmental Assessment and Review Process (EARP) was established in 1973 by a federal government cabinet policy directive, and later amended in 1977. The process "embodies Canada's policy on environmental assessment as it relates to the activities of the federal government." (FEARO, May 1979, p. 1).

¹The four departments are:

- Department of Indian and Northern Affairs (DINA)-Northern Affairs Program
- Department of Energy, Mines and Resources (EMR)
- Department of Public Works (DPW)
- Ministry of Transport (MOT) - Canadian Air Transportation Administration (CATA)

The departments were selected because they perform the most active roles as developers and facilitators of development within the federal government. (From discussions with FEARO officials and W.E. Rees).

²Common-sense refers to sound practical judgment based on the natural intelligence or understanding of mankind in general (Webster's, 1971).

The process is designed to ensure that:

- (a) environmental effects are taken into account early in the planning of new federal projects, programs and activities;
- (b) an environmental assessment is carried out for all projects which may have an adverse effect on the environment before commitments or irrevocable decisions are made; projects with potentially significant environmental effects are submitted to the (Minister of the) Department of Environment for review;
- (c) the results of these assessments are used in planning, decision-making and implementation.

(FEARO, Feb. 1977, pp. 1-2)

The process applies to all federal departments, all non-regulatory agencies, and all non-proprietary crown corporations. Regulatory agencies and proprietary crown corporations are "invited" to participate in the process. The process is applied to all projects "initiated by federal departments and agencies, those for which federal funds are solicited, and those involving federal property" (FEARO, May 1979, p. 1).

The EAR process can be divided into two distinct phases: environmental screening and formal environmental assessment and review. The screening process refers to the procedures employed by individual departments and agencies to examine proposed activities within their control to determine whether they are likely to have significant environmental effects. FEARO defines two levels of screening. The first level of screening applies to all projects, programs and activities initiated by government agencies or using federal funds or lands. (See Appendix III for examples of the screening matrix recommended by FEARO in the Guide for Screening.)

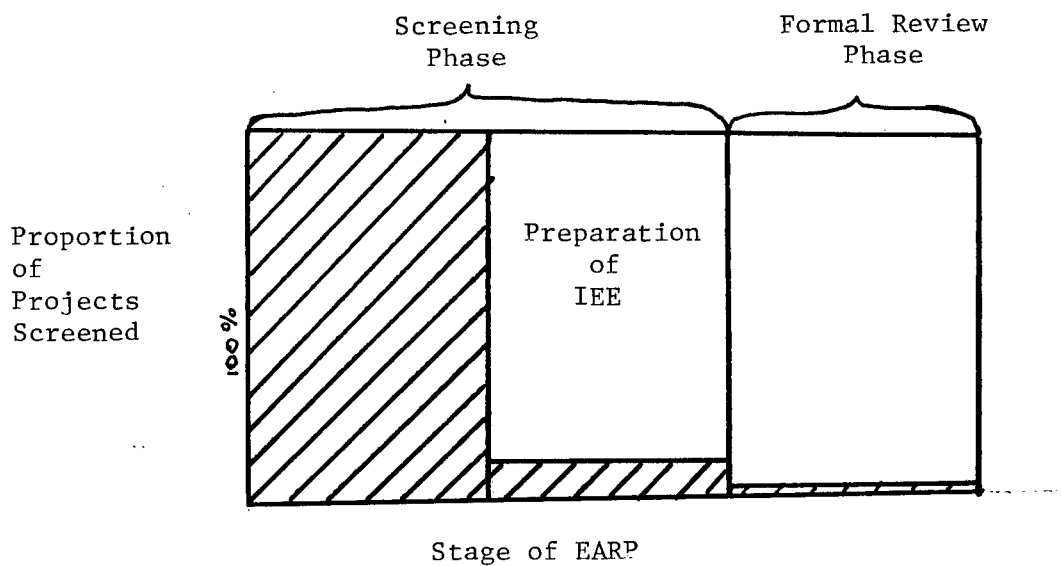
The second level of screening is for projects that may have potential adverse environmental effects, the extent of which are unclear. Under these circumstances the initiator must prepare or procure an Initial Environmental Evaluation (IEE). The IEE is a "documented assessment of the

environmental consequences of any intended activity having potential environmental effects Guidelines covering various project categories (e.g. pipelines) issued by FEARO are available to assist organizations in this task." (FEARO, May 1979, p. 11). If it is found there are potentially significant environmental effects on the basis of the screening or the IEE, the project advances to the second phase.

The formal environmental assessment and review phase is reserved for projects that are likely to have significant environmental impacts as identified at the screening level within the "initiating" department. The formal reviews are co-ordinated by the Federal Environmental Assessment and Review Office (FEARO), established within the Department of Environment (DOE) specifically for this purpose. The number of projects in the EAR process declines significantly as they are screened for environmental concerns. Only a few projects are referred to the formal assessment phase (see Figure 1).

In the formal assessment phase a separate panel of experts is appointed to review each project. The panel first develops guidelines for a detailed environmental impact statement (EIS) to be prepared by the initiating or proponent agency. Once the EIS has been completed and reviewed for deficiencies a public review and evaluation of the proposed action is conducted. Finally, the panel report, with recommendations, goes to the Minister of Environment, who consults with the other minister(s) concerned prior to announcing a final decision. The final decision is announced by the Minister of the initiating department. If aware of EARP at all, most Canadians know only of the second phase, because formal assessment includes public hearings and attracts media attention.

Figure 1



Relationship between federal activities and phases of EARP. Proportions are estimates only.

C. Defence and Criticism of EARP

A notable feature of this whole process is its informal, almost voluntary, format. FEARO officials put forth three principle arguments against a process that by legislation requires each department to establish specific procedures and criteria for environmental assessment. The first is that the tradition of parliamentary democracy does not permit government departments and agencies to be answerable to anyone except their minister, who is answerable to Parliament. According to FEARO, this accountability would be threatened if other agencies (i.e. DOE or FEARO) intervened in decisions affecting a department's operations outside the control of the minister responsible (DOE, Dec. 17, 1979).

Secondly, there is a concern that a process legislating procedures and criteria would duplicate the U.S. experience of filling the courts with thousands of cases disputing screening and panel review decisions.

Finally, FEARO perceives greater flexibility in EARP. A legislated formal process would be "etched in granite" and more rigid than EARP. This "would be resisted within departments as competing for limited funds, would greatly impede the learning process, and once established would take years to change" (FEARO officials as cited by Rees, Nov. 1979, p. 10). (Chapter II provides a detailed comparison of the U.S. and Canadian processes.)

Emond (1978) identifies five common criticisms of the process. These relate to the limited application of EARP, the principle of self (as opposed to independent) environmental assessment, the composition of EARP panels, the non-legislated status of EARP, and the role of the public in the process.

Emond is particularly concerned with the amount of discretion allowed the initiator. He points out the contradiction in this part of the process

when he states:

If the various federal departments were as rational and environmentally conscientious as is implied by such discretion, then EARP is unnecessary. However, by creating EARP in the first place, the government is acknowledging a need to ensure that the various departments act in an environmentally responsible way.

(Emond, 1978, p. 219)

Rees (Nov. 1979) is equally critical of the advisory nature of EARP, stating the process "functions as little more than the 'ecological conscience' of the federal government, its authority based more on moral suasion than legal clout" (p. 5). Rees looks at the issue of legislating EARP and acknowledges that the flexibility of the process has allowed it to evolve substantially away from its origins. He recommends that a legal framework should retain flexibility and provision for mandatory review to assist in the 'evolution' of the process.

Up to March 1980 (FEARO) there have been a total of 31 projects referred (including 12 projects completing the review phase) to the formal assessment phase of EARP since 1974. Five of the twelve projects are located in the territories where the federal government controls virtually all resource activity.

There were no new projects added to FEARO's list of formal review between December 1978 and December 1979 (see FEARO Registers Dec. 1978 to Dec. 1979). This would seem to indicate that the federal government has not participated in any activity that could be of significant environmental concern in over a year. It may also indicate that the self-assessing agencies which use their own criteria to determine the environmental significance of their activities are operating in a less than optimal fashion.

II ENVIRONMENTAL IMPACT ASSESSMENT: COMPARISON OF THE UNITED STATES AND CANADA

A. Environmental Impact Assessment in the U.S.

1. Origins

Environmental impact assessment, as a formally recognized procedure originated in the United States with the implementation of the National Environmental Policy Act (NEPA) on January 1, 1970. The goal of the legislation was to:

. . . create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

(Sec. 101(a), NEPA, 1969)

The Act contains an "action forcing provision" [Sec. 102(2)(C)] which orders federal agencies to act in accordance with the goals of NEPA by preparing an environmental impact statement (EIS) on any ". . . proposal for legislation and other major Federal actions significantly affecting the quality of human environment" (CEQ 1978, p. 35). The EIS is a detailed statement which includes the potential impacts, unavoidable impacts and alternatives to the proposal. The NEPA legislation includes regulations for implementing the Act (CEQ, Nov. 1978). The regulations specify procedures for determining whether an EIS should be prepared, i.e., whether the proposed activities will create significant environmental impacts.

2. NEPA Screening

The U.S., like Canada, divides its impact assessment process into two phases. In the first phase (environmental assessment) projects are screened for potentially significant impacts. There is virtually no similarity between the U.S. and Canadian screening phases. The U.S. process

follows rigorous and systematic procedures requiring a high degree of accountability. The NEPA regulations define environmental assessment as follows:

- (a) Means a concise public document for which a Federal agency is responsible which serves to:
 - (1) Briefly provide sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact.
 - (2) Aid an agency's compliance with the Act when no environmental impact statement is necessary.
 - (3) Facilitate preparation of a statement when one is necessary.
 - (b) Shall include brief discussions of the need for the proposal, of alternatives as required by Sec. 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.
- (CEQ, 1978, p. 28)

The preparation of the environmental assessment comes from the requirement that agencies must integrate the NEPA process with other planning "at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts" (CEQ, 1978, p. 5).

The CEQ regulations stipulate that each federal agency must develop internal procedures that supplement the Council's regulations. The internal procedures of the individual agencies must be designed in consultation with the public, and must be approved by CEQ for conformity with NEPA before they are operative.

The environmental assessment procedures must include:

- a) consultation with affected interests;
- b) designation of the major decision points in agency programs of possible environmental concern, and ensuring the NEPA process corresponds with them;
- c) relevant documentation as part of the decision-making record;

- d) a range of alternatives, which are explicitly identified in the process;
 - e) monitoring of agency policies and procedures in order to maintain compliance with NEPA;
 - f) specific criteria to identify projects that:
 - i) are "categorical exclusions" (i.e. an activity that does not normally have significant impacts),
 - ii) require an environmental assessment,
 - iii) require an EIS.
- (See sections 1501.2, 1501.3 and 1507.3, CEQ, 1978)

When an agency undertakes a project it must first determine whether the proposed action is listed as a categorical exclusion. If it is not, the agency must prepare an environmental assessment, unless it is immediately clear that an EIS should be preferred (Yost, Dec. 27, 1979).

At the heart of the assessment process, and NEPA, is the question of whether the proposed action "significantly" affects the environment. Section 1508.27 of the CEQ regulations set forth a detailed definition of this term, requiring consideration of both context and intensity:

(a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant.

(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act in 1973.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Although the definition of "significant" is comprehensive determining "significance" remains highly subjective or judgmental. There has consequently been a great deal of controversy in the U.S. as to what constitutes a major or significant impact. Conflict surrounds the differing interpretations of significant impacts by government agencies and the public, and has placed a heavy burden on the judiciary. Rodgers (1977) discusses the concept of "significance" in NEPA including a listing of actions that the courts have determined require an EIS. There are many subjective factors that can affect a decision such as "the skills of the lawyers involved, the controversiality of the issue, the judge and the equities of the case. Thus it is difficult to derive a precise rule of law regarding the 'measure of significance'." (Yost, Sept. 27, 1979). These decisions have been precedents for subsequent

projects on whether referral to the formal assessment phase is necessary, and are another factor that agencies must consider in their environmental assessment process. The U.S. impact assessment process was an important model for Canadian officials in designing EARP.

B. Comparison of U.S. Environmental Assessment with the Canadian Screening Process.

There are several characteristics of the two processes that are worth reviewing for comparative purposes:

1. EARP, unlike the American process, is not legislated. It was established by cabinet directive and is an administrative function. EARP is, therefore, not subject to the 'rules of natural justice', and the Canadian public has no legal means by which they can ensure the process is fully implemented.
2. Similarly, while FEARO has an administrative role, it has no regulatory authority to ensure EARP is being implemented. In the U.S., the CEQ has a legal mandate to oversee and co-ordinate the implementation of NEPA.
3. Consequently Canadian screening procedures are at the discretion of government departments and generally suit their own goals and objectives. In the U.S., on the other hand, environmental assessment regulations must meet specific CEQ requirements, and be approved by CEQ after adequate provision for public consultation in their formulation.
4. The CEQ requires that departmental regulations include specific criteria to identify projects requiring an EIS, environmental assessment and categorical exclusion. In Canada, there is no comparable requirement or guideline for determining specific criteria by each department. Instead, FEARO provides six general criteria "that can be used when making a decision as to the environmental effect of an activity" (FEARO, 1978, p. 2).

5. The U.S. gives a detailed definition of significance requiring consideration of context and intensity. There is no definition of significance in the Canadian process aside from possible "concern and controversy in the public/professional community" (FEARO, 1978, p. 8).

C. Conclusion

The Canadian screening process has been applied in a manner where there is complete trust in all actors to conduct themselves in a reasonable manner. Departments have been left with the responsibility of producing their own screening guidelines with minimal guidance from FEARO.

The U.S. process provides a legal and more rigorous framework with formal procedures for environmental assessment that must be followed by all government departments. Whereas the Canadian process is based on "good will among reasonable men", the U.S. process takes the "big stick" approach, forcing departments to follow specific procedures. Some aspects of the U.S. process such as systematic application and rigor would seem common sense from the points of view of consistency and fairness in application.

This thesis is not intended to be a comparative analysis of the U.S. and Canadian approaches to preliminary environmental assessment procedures. It is, however, useful to bear in mind these differences in approach as the Canadian process is analyzed.

III METHODS OF EVALUATION

A. Evaluation Research

This thesis is an example of evaluation research, a method of assessing the effectiveness of a process or program. The application of evaluation research in a formal scientific manner has only been practised since the 1930's within the social sciences (Stephan, 1935). Interest in evaluation research has accelerated in recent years, particularly in the public sector. The simple explanation for this is:

- a) social policies have only been implemented on a large scale in the post-World War II years in Canada, and
- b) the effectiveness of many of these high cost, publicly funded programs has been severely criticized.

Public agencies do not have the same clear indicators of success as the private sector, i.e., investment and profits. Public agencies must have other means of measuring the relative success or failure of their programs, particularly when they must compete with other government agencies for funds. Measuring program success can become a very complex and confusing task if the goals and objectives of the program and the means of measurement are not clearly defined.

Writers in the area of evaluation research have devised a number of definitions of the subject. (See for example Franklin and Thrasher (1976), Kiresuk and Lund (1977), Fairweather and Tornatzky (1977), Rutman (1977) and Weiss (1972).) Kiresuk (1977) boiled several of these definitions down and found three basic components in them: (1) formation of criteria, (2) assessment of attainment of criteria, and (3) utilization of the results.

Criteria³ may be derived from the specific needs or values that a project is designed to serve (Moroney, 1977). Indeed, in most descriptions of evaluation research programs are measured against their own stated goals (Rutman, 1977). Inherent in this approach is the idea that there is a goal with a value attached, and it is therefore the task of evaluative research to first identify and then determine the program's success in meeting that goal. This implies that evaluation is limited to the stated goals of the program and restricts the scope of the study. This may be satisfactory for an in-house evaluation, but not for an external review of a program such as EARP. The problem with such a narrow approach is that it ignores latent goals (i.e. goals not formally stated), unintended consequences, as well as other anticipated effects (Rutman, 1977).

The second step in evaluation is the use of systematic disciplined inquiry to determine how well the criteria have been met. Such inquiry may include experimental, quasi-experimental, case study, field study or ex post facto designs, and may involve qualitative as well as quantitative measurement schemes. An important component of evaluative research is that attention is paid to the manner and extent to which specified activities produce the measured results. This implies that the research must focus on the process as well as the outcomes. If evaluation research is to shed light on factors that fail or succeed to produce measured results, then attention must be paid to the program components and processes and not solely to outcomes. A major task of planning the evaluation study requires the conceptualization of the program in operational terms so that it can be monitored, not only to provide

³Criterion is defined as a standard by which a correct judgment can be made; a model or example; a test, rule or measure for distinguishing between the true or false, perfect or imperfect (Funk and Wagnall, 1960).

a description of the program's operation and thereby determine whether it was implemented in the intended manner, but also to make inferences about the outcomes on the basis of program attributes (Rutman, 1977). This thesis follows the case study approach, looking at the process of screening and evaluating each case example to see if it met the assessment criteria.

Finally, there is the utilization of results. "Feedback" is not intrinsic to the process of evaluation, but unless a direct attempt is made to link evaluation data to the decision-making process, the impact of findings will be minimal and delayed (NIMH, 1972). However, this does give rise to a dilemma on the part of the researcher. On the one hand, attempts should be made to identify the concerns of decision-makers for possible inclusion in the research. On the other hand, it is useful to pursue questions of a more theoretical nature, shedding light on issues where it is unlikely that short term policy change will be undertaken and to challenge fundamental assumptions underlying the program being evaluated. Although some data may not be of immediate importance or even wanted by decision-makers, this should not preclude the possibility of pursuing it in evaluation, "particularly if the researcher takes a critical posture as a social scientist vis-a-vis the program being evaluated rather than as a technician whose work is totally constrained by the wishes of the decision-makers" (Rutman, p. 18). Clearly I am not in a position to utilize the results, but I hope the results of this evaluative research are examined by decision-makers and can provide a basis for positive change. Good research has often been left on the shelf because of the lack of alliance between the "two solitudes" of research and practice (Joly, 1967).

With these factors in mind, I sought to provide an evaluative framework for study. The primary purpose was to inject some rigour and objectively

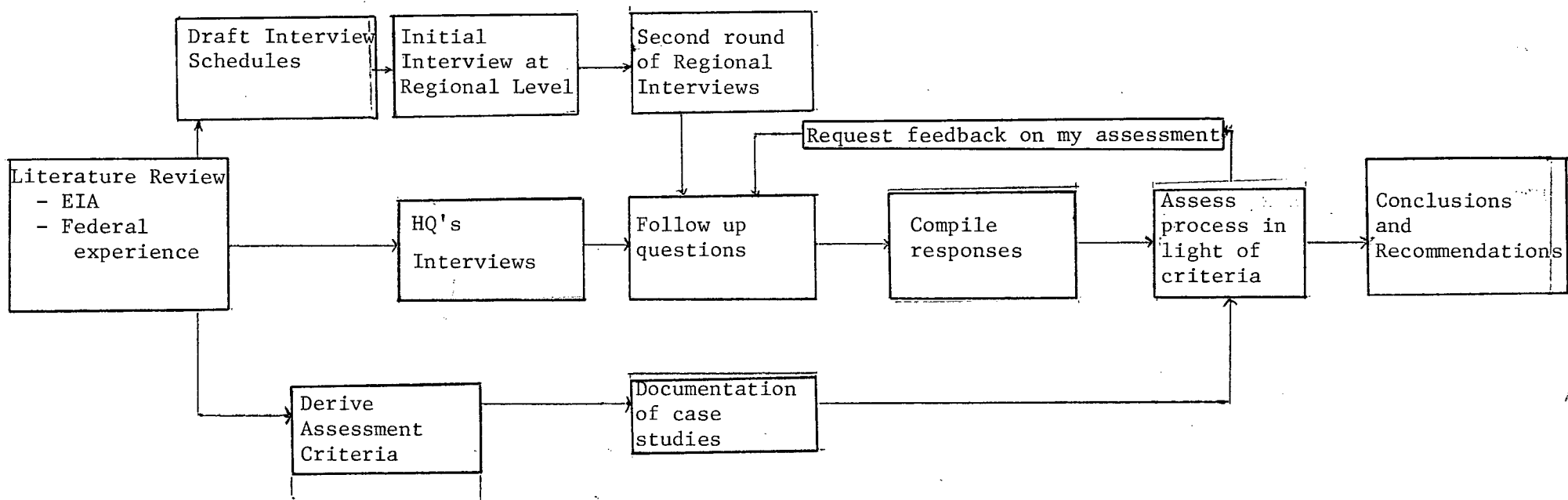
into the study. The possibility of undue bias can be greatly reduced through the use of a systematic analysis that is explicitly laid out for all observers to see. (See Figure 2.)

B. Objectives

To accomplish the research goal of the thesis, I established several research objectives:

1. To examine the institutional framework and procedures for screening, i.e.:
 - a) To describe the context for screening within the procedural framework for environmental assessment in the federal government.
 - b) To propose an "optimal" screening process based on normative criteria, a brief review of the American process and reasonable performance related expectations.
 - c) To outline the screening process as envisioned by FEARO (based on its screening guide) and analyze the process in light of my criteria.
2. To examine specific examples of screening from four government agencies, i.e.:
 - a) To describe the procedures for screening within each department.
 - b) To describe how the case study examples were selected.
 - c) To describe the specific screening procedures applied to each case.
3. To evaluate the effectiveness of the screening process, i.e.:
 - a) To compare the de facto screening process to the stated procedures and normative criteria.
 - b) To analyze the strengths and weaknesses of the existing process.
 - c) To explain deviations from stated and normative procedures.
4. To develop policy and procedural recommendations on the process.

Figure #2-

Schematic Diagram of Study Process

C. Assumptions and Limitations

1. Assumptions

The criteria for evaluating the screening process are based on two assumptions:

Assumption 1: Because screening is so important in EARP, the government, acting in the public interest, wants to make it work effectively.

Assumption 2: If screening is to be effective it must be structured yet adaptable.

2. Limitations

Time and manpower considerations limited the study to four government departments selected on the basis of their size and activity in EARP. Conclusions may not be valid for other departments. The selected departments were evaluated on the basis of a limited number of projects. Four of the projects were selected by government agencies for me to review. The other four projects I chose in consultation with the departments. A discussion of how the projects were selected is included in the project descriptions.

D. Methods Employed

Specifically, the study employed the following methods:

1. A literature review to gain some understanding of environmental impact assessment and its application by the federal government. Literature on government policy formation, decision-making, and resource management was also reviewed.

2. On the basis of the readings and discussions with advisors, a tentative set of criteria was established.

3. From the literature and the derived criteria I developed an

an interview format (see Appendix I). The schedule was used initially to interview local screening coordinators in DPW and MOT. From these interviews and additional documents provided, the schedule was revised slightly and used for interviewing screening coordinators for all four departments in Ottawa. (DIAND-Northern Program and EMR do not have regional offices in Vancouver.) Interviews were undertaken with regional and headquarters representatives of DOE and FEARO. Interviews were also conducted with DOE and DINA officials in Yellowknife.

A second round of interviews with regional MOT and DPW representatives was arranged to coincide with content analysis of several case study examples of screening. Time and financial constraints mitigated against a second round of interviews in Yellowknife or Ottawa. Instead, correspondence and the telephone were used to clarify points and address further questions.

4. Specific examples of screening in each of the departments were selected for detailed study. Two of the departments (MOT and DPW) were chosen partly because of the location of their regional offices in Vancouver, which facilitated access to staff and file information suitable for the study. DIAND's Northern Affairs Program was selected for study because of its major impact on northern development activity.

The interviews were flexible, using open-ended questions in order to facilitate discussion. Respondents by and large were candid and open. There was some defensive posturing and requests for certain comments to be either anonymous or "off the record". Interviewees are listed in Appendix II.

Obtaining documented information proved to be more difficult. There were two principal reasons which are somewhat related. First, some officials were very reluctant to release information they considered to be "sensitive" or "not available to the public". Secondly, in several cases there simply was

no adequate documentation of screening. This has hampered evaluation, but it is also a clearly identifiable result of current screening procedures.

The final step of the analysis was to write an evaluation of the screening process for each department and obtain the comments of regional and headquarters screening officials. All officials responded to my requests for comments except from the DINA regional office in Yellowknife.

E. Normative Criteria For Screening

Evaluation criteria provide a rough indicator against which the screening apparatus and the quality of its use can be measured. The simplest means of deriving this "yardstick" is to look at the basic principles of Canada as a pluralistic democratic society.

A representative democracy is based on two important premises. The first is that government decisions should be made by popularly elected representatives who are expected to reflect the priorities and values of the electorate. In turn, the public agencies administered by these officials should also reflect these values. The second is that decisions should be made on the basis of good and sufficient information about the choices and their consequences (Fox and Nowlan, 1978).

The majority rule principle is tempered by other democratic values such as political freedom and equality. It is important that there is tolerance within a democratic society for differing political viewpoints, and also that there are institutions which operate to deter minority control of policy decisions (Eyre, 1980).

The purpose of screening is to identify projects that may have significant environmental impacts. Some means of measuring significance is necessary in order to meet this objective. The U.S. definition of "significance" gives an indication of the kind of criteria necessary to measure

impacts. One aspect of the U.S. definition is the need for a variety of interests to be incorporated in defining the acceptability of impacts, which may vary by region and individual values. In the Canadian context there is no requirement that screening be open to public inspection. The effect is that departments determine on their own whether to involve "outside" interests in determining what is significant, and therefore what activities should be referred to the EAR panel process. It can, therefore, be argued that bias in favour of development is possible, since the screening may be done exclusively by the same individual(s) responsible for the recommendation or approval of a project. Downs (1966) identifies four kinds of bias common to all officials and suggests these biases are greater in government agencies than private industry. In the business world profits are used as an 'objective' measure of performance, whereas the measure of success in a government bureaucracy is more obscure. The four biases common to government officials are:

1. Each official tends to distort the information he passes upward through the bureaucracy. Specifically, officials tend to exaggerate data that reflects favourably on themselves and to minimize those that reveal their shortcomings.
2. Each official tends to exhibit biased attitudes toward certain of the specific policies and alternative actions that his position normally requires him to deal with. In general he will be biased in favour of policies that advance his own interests and against those that don't.
3. Each official will vary the degree to which he complies with directives from his superiors, depending on whether those directives favour or oppose his interest.
4. Each official will vary the degree to which he seeks out additional responsibilities and accepts risks in the performance of his duties depending on his particular goals.

(Downs, p. 78)

In short, it is simply naive to assume that government employees are neutral and faithfully reflect the values of elected representatives (Fox and Nowlan, 1978).

Accountability in decision-making is a related concern to the possibility of bias. Hehner (1965) discusses the evolution of the legislative role of government from one of giving definitive and precise policies and legislation to the current system of providing wide discretion to bureaucrats, and delegating decision-making powers to administrators. The result of this move toward greater delegation of power is that the lines of communication between citizen and representative have become very complex and the latter less accessible, resulting in a lack of accountability in government decision-making.

It is impossible to eliminate bias or to have direct accountability in all aspects of decision-making, as neither people nor the institutions they comprise are perfect. In order to ensure that these defects in human character are ameliorated, methods have been devised to introduce greater objectivity into decision-making, and to ensure that administrative decisions better reflect the values of elected representatives, and the public. The following criteria are based on this discussion.

A first criterion for environmental screening is that for a planning process within public policy to be legitimate, all affected interests have the right to be represented. This criterion can be evaluated in light of several indicators of representation:

- a) Are there sufficient channels for these interests to communicate their concerns?
- b) Can these concerns be entered early in the planning process?
- c) Does this range of interests affect screening decisions

(or project design which may mitigate the impacts thus making further environmental assessment unnecessary)?

The second criterion for screening is that the process should follow a rigorous and systematic procedure. Means of assessing this criterion are:

- a) Is there a formal procedure with relevant and practical decision criteria?
- b) Is the process applied in a systematic manner to all projects?
- c) Is there a comprehensive evaluation of the effectiveness of the process to ensure it is meeting its objectives (i.e. monitoring)?

Related to the above is the third criterion, namely that all screening decisions should be based on adequate information. Success in meeting this criterion can be judged by the following questions:

- a) Is there in-house expertise to make environmental screening decisions?
- b) Are alternatives considered?
- c) Are expert advisors from outside the department used (i.e. routine referrals)?
- d) Is the public consulted?
- e) Is there sufficient information either to make a decision or to identify the data gaps in order to identify detailed investigation needs?

A fourth criterion is that the process should be effective in achieving its objective. Since this study is not a comprehensive analysis of all environmental screening decisions within the federal government, the ability to measure effectiveness in achieving its objectives is constrained. Indicators of departmental effectiveness in screening are based on:

- a) subjective views of the actors involved with the process
- b) evaluation of the projects screened in this study.

F. Discussion of the Normative Criteria: FEARO's Model for Screening

FEARO has virtually no involvement in the screening procedures of operating agencies (P. Wolf, pers. comm.). This is surprising, because FEARO allegedly is "responsible for and administers the Environment Assessment and Review Process" (FEARO, May 1979, p. 9). According to FEARO, the EAR process "automatically applies" whenever any federally funded project, or one using federal lands is "conceived" (FEARO, May 1979, p. 3). Nevertheless, the screening process is based on self-assessment by initiating agencies in the federal government.

FEARO, in conjunction with the Federal Activities Branch and the Environmental Protection Service, has published A Guide for Environmental Screening in 1978 (hereinafter identified as the 'screening guide' or 'guide'). The guide "is designed to encourage departments and agencies to incorporate environmental considerations into the conceptual stage of development" (FEARO, 1978, p. 4) (Emphasis added). There is no requirement that departments follow these screening procedures. They are only suggested.

The objective of the guide is to assist project managers and/or planners to make one of the following decisions on a proposed activity:

- a) No adverse effects, no actions needed.
- b) Effects identified can be mitigated through environmental design, and conformance to the legislation/regulation.
- c) Nature and scope of potential adverse effects are not fully known; a more detailed assessment is required to identify and assess their significance, which is done by an Initial Environmental Evaluation (IEE).
- d) Significant environmental effects. A formal review is required by an Environmental Assessment Panel.

(FEARO, 1978, p. 4)

The guide proposes the use of two matrices for screening. They are intended to balance comprehensiveness and brevity. The first matrix is intended as a broad screening evaluation, while the second focuses on more specific environmental impacts. (See Appendix III for a sample of a screening matrix.) The guide's value may be judged by the fact it is not used by any of the government agencies surveyed in this study. This contradicts the official view of DOE: "Environment Canada's (i.e. FEARO's) guidelines for environmental screening are, in many cases, used by the proponent to evaluate the environmental aspects of the proposal" (Smithers, Nov. 1979, p. 4). (Emphasis added). No empirical evidence is given to substantiate this claim.

The guide outlines the following procedure for screening:

1. Ensure that the project meets all applicable federal, provincial and municipal requirements. (Nowhere is it defined what is meant by these requirements.)
2. Identify all activities listed in the level 1 matrix which are likely to occur during project development.
3. Identify those areas in the physical, chemical, ecological, aesthetic and socioeconomic categories which are likely to be affected by the activities identified in 2.
4. If areas in the several categories are identified then proceed to the level 2 matrix.
5. The level 2 matrix is intended to screen specific activities and the areas which they may affect. For example, Activity A may have a significant effect in the area of water quality.

(FEARO, May 1979, p. 8)

The procedure acknowledges that value judgments must be made in screening. The following criteria are offered to assist in making screening decisions.

- 1 Magnitude: This is defined as the probable severity of each potential impact. Will the impact be irreversible? If reversible, what will be the rate of recovery or adaptability of an impact area? Will the activity preclude the use of the impact area for other purposes?
- 2 Prevalence: This is defined as the extent to which the impact may eventually extend as in the cumulative effects of a number of stream crossings. Each one taken separately might represent a localized impact of small importance and magnitude but a number of such crossings could result in widespread effect. Coupled with the determination of cumulative effects is the remoteness of an effect from the activity causing it. The deterioration of fish production resulting from access roads could affect sport fishing in an area many miles away and for months or years after project completion.
- 3 Duration and Frequency: The significance of duration and frequency can be explained as follows. Will the activity be long-term or short-term? If the activity is intermittent, will it allow for recovery during inactive periods?
- 4 Risks: This is defined as the probability of serious environmental effects. The accuracy of assessing risk is dependent upon the knowledge and understanding of the activities and the potential impact areas.
- 5 Importance: This is defined as the value that is attached to a specific area in its present state. For example, a local community may value a short stretch of beach for bathing or a small marsh for hunting. Alternatively, the impact area may be of a regional, provincial, or even national importance.
- 6 Mitigation: Are solutions to problems available? Existing technology may provide a solution to a silting problem expected during construction of an access road or of bank erosion resulting from a new stream configuration.

(FEARO, May 1979, p. 6)

The criteria have limited value because they do not contain any measure of significance. What may be considered a high risk activity by one screening officer may not be perceived to be significant by another. Nowhere in the screening procedures is there reference to public input into screening decisions.

One of the problems with the screening guide is its alleged complexity. This difficulty was identified upon its introduction in 1976.

The usefulness of the matrix method was felt to be limited by its complexity and level of detail. However, it was recognized "that something should be published, soon, on the EAR process and this might be more important than lengthy attempts to simplify the matrix" (Pacific RSCC, August 18, 1976). It appears the Guide was introduced because it was better than nothing. The complexity of the DOE screening guide was cited in interviews with all the initiating agencies (except EMR). It is not the purpose of this thesis to examine in detail the methods of matrix use or evaluate its effectiveness, since this is a study of the de facto processes, not the suggested technical procedures.

IV RESULTS AND DISCUSSION

A. Screening: The Process in Practice

From the previous discussion it is clear that the screening guide is not an appropriate model for government agencies to follow, based on the criteria of representation of interests, rigor and adequacy of information. There are no guidelines for public consultation or referral to other government agencies. The process is advisory, voluntary and depends on the good will of all participating agencies.

We have already established that the screening process in reality varies substantially from the model provided by FEARO. Each department follows its own procedures. The following is a description and analysis of the screening process as it is applied by four federal government departments. These four departments were selected on the basis of consultation with FEARO officials and a brief examination of the register of EARP panel projects which indicated that most activity having significant effects on the environment occur within these agencies.

1. Screening: The Department of Energy, Mines and Resources

The legal basis for EMR is the Energy Mines and Resources Act (R.S.C.1970, C.E-6; 1970-71, c.42) and the Resources and Technical Surveys Act (R.S.C. 1970, C.R-7; 1970-71, c. 42). Under the provisions of these Acts the department is responsible for the enhancement, discovery, development and use of Canada's mineral and energy resources, and for broadening the knowledge of Canada's geography for the benefit of all Canadians. To carry out these responsibilities the department:

- a) develops national mineral and energy policies based on research and data collection in the earth, mineral and metal sciences, and on related social and economic analyses;
- b) conducts an earth sciences program directed toward the better knowledge, use and conservation of Canada's landmass; and
- c) disseminates scientific and technical information related to its program to interested users across Canada.

(Duc and Sunga, 1976)

EMR has referred one project to FEARO for full panel review, namely, the Lepreau Nuclear Station in New Brunswick which was the first project selected for full impact assessment under the EAR process.

EMR's screening procedures were formulated in 1979 (six years after the introduction of EARP). Specifically, the procedures are:

- a) The Branch or Division with line responsibility for a particular project or program will, in consultation with the Office of Environmental Affairs (OEA), ensure that the proponent receiving grants, loans or approvals produces a statement describing the likely environmental effects of the project. The OEA will assist by ensuring that the appropriate contacts in other agencies are arranged and to establish where required a standing review group for an activity or group of activities. (sic)
- b) Together with a project description or work statement, the environmental statement will be revised by the responsible line unit in EMR with the assistance of

the OEA and environmental experts from other departments. This review or SCREENING, expedited by the OEA, will normally take no more than 20 working days.

- c) Depending on the nature of the reviewers' comments the proponent (province, utility, company) may be required to produce supplementary information. If there are no major gaps or deficiencies the proponent will be advised to proceed where necessary according to environmental terms and conditions which could include the need for environmental monitoring. The terms and conditions are determined out of the consultative review with DOE, Fisheries, EMR's S&T Sector, provincial experts and others.

The judgement as to whether a project requires an IEE or referral to a panel is based on the advice of outside departments, public concern, etc. The recommendation to elevate the screening process to an IEE or for referral to a Panel is the responsibility of the line manager in consultation with the OEA. The recommendation is made to a Steering Committee on Environmental Assessment in EMR (ADM's) which will meet as required to decide the future course of action under the EARP process.

- d) In cases where significant environmental effects are suspected or where there is insufficient information available on some critical aspect, an Initial Environmental Evaluation will be required. Guidelines for the preparation of IEE's are available from FEARO and will be adopted by EMR for particular projects in consultation with other departments.

(EMR, June 4, 1979)

Also, in 1979 an environmental coordinator position was established to adopt and oversee this screening process (Skinner, July 25, 1979 and Stewart, August 23, 1979). In mid-1979 the Office of Environmental Affairs (OEA) was established in EMR "in order to ensure that the departmental response to environmental concerns has a clearly established focus" (Stewart, August 23, 1979).

Case Studies of Screening in EMR

Analysis of the screening process in EMR is limited by several

factors:

- a) The process has been implemented very recently with only seven projects screened (Skinner, Feb. 28, 1980);
- b) Many projects are carried out in conjunction with the provinces, some of whom have their own environmental assessment process; also there is often little patience at the provincial working level for the federal policy (Skinner, Feb. 4, 1980);
- c) All file information is held in Ottawa. My access to files was limited to correspondence and documentation selected by EMR. Descriptive project information and details of EMR's screening procedures is therefore very limited.

This analysis of the screening process in EMR is based on an examination of the EMR screening review documents made available to me and subsequent correspondence. The assessment criteria are applied to each specific project. Criteria with a more general application are discussed under the Effectiveness Criterion (4).

CASE 1. Annapolis Tidal Power Demonstration Project

The purpose of the tidal project is to demonstrate the capacity of tidal power on a limited scale. The project is located in the Annapolis Basin portion of the Bay of Fundy. The proponent agency is the Nova Scotia Tidal Power Corporation which commissioned the environmental screening document. (Guidelines were prepared by the provincial Ministry of Environment in consultation with the federal DOE and DFO.) The federal initiating agency is the Department of Energy, Mines and Resources through federal financial support for the project. The project is financed under a joint agreement between the federal government and the province of Nova Scotia. As a matter of course,

EMR inserted into the terms of the agreement the requirement for an environmental assessment that meets the requirements of EMR (Skinner, Feb. 4, 1980). In this case the province would not sign the agreement until the provisions of the environmental clause were fulfilled (Skinner, Jan. 24, 1980A). This placed pressure on the Office of Environmental Affairs to screen the project as quickly as possible. The EMR review of the proponent's screening statement was completed in nine days. The purpose in expediting the process "was to get the Agreement signed simply for financial accounting reasons. The Premier of Nova Scotia and the Minister (of EMR) wanted to make an announcement" (Skinner, Feb. 28, 1980). Skinner (Feb. 4, 1980) states, "I do get the views of the federal and provincial environmental authorities before recommending to proceed or to wait pending further studies." In the case of Annapolis, Skinner recommended approval of project planning to proceed subject to meeting the approval of local farmers and fisheries experts. He made this approval conditional because he had not received the opinion of DOE and DFO. The Department of Fisheries and Oceans (DFO) had not received a copy of the Environmental Assessment prepared by the proponent, apparently because the Tidal Power Corp. had not distributed sufficient copies of the document (Skinner, Jan. 24, 1980A). (See Appendix IV for a copy of the screening review.)

Public consultation was included in the project planning process. This took the form of two public meetings, and several meetings with special interest groups (e.g. farmers, environmental groups and government departments).

Clearly, there are a number of complications in undertaking screening within a department that is in a sensitive position vis-a-vis federal-provincial relations and which must also satisfy the guidelines of EARP. The

screening document is prepared by the proponent outside of the department and the federal government can only look at the project when the province brings forward a proposal. Skinner (Feb. 28, 1980) states, "There has to be some trust and faith in the system. You and I as taxpayers cannot afford to have three bureaucrats looking over one another's shoulder to see that screening is done. This is about as early as any one in the federal system can get a look at it -- i.e., when the provinces come to us with a deal. Otherwise, it is theirs alone and we have no business 'screening' it. Yet to then screen it when they do come forward second guesses them to some extent, but we urge them to seek the views of the local federal environmental experts." This comment summarizes Skinner's view of the problem.

In terms of the normative criteria the following points can be made:

1. In order for a process to be legitimate, all affected interests should have the opportunity for representation.

- a) Were there sufficient channels for these interests to communicate their concern?

No. The EMR review did not include consultation with any affected interests. The urgency of having the project approved did not make this possible. Even the federal environmental agencies (i.e. DOE and DFO) did not have an opportunity to comment since they had not even received copies of the EMR review by the time (conditional) approval was granted.

Skinner apparently recognized the lack of consultation in the screening review and placed the following conditions on EMR's approval:

- i) Undertake in concert with local and provincial authorities to plan construction to minimize the strain on the local socio-economic infra-structure;
- ii) extend a planning role to the existing local farmers committee to work with Nova Scotia Tidal Power Corp.
- iii) ensure that construction activities are in compliance with the Fisheries Act and the Ocean Dumping Control Act.

(EMR, Jan. 24, 1980)

- b) Were these concerns entered early in the project planning process?

Yes. Public participation was required to be included in the project planning and operation phases by the environmental screening review. Two meetings have been held as of May, 1980 (Carter, May 30, 1980).

- c) Did these range of interests affect screening decisions?

Unknown. The EMR screening review gave no reference to any consultation in the screening statement. The conditions of the EMR screening review requiring consultation were apparently met, but the results of these meetings were not made available to me.

2. The screening procedures should be rigorous and systematic.

- a) Was there a rigorous and formal procedure for screening, with relevant and practical decision criteria applied in this case?

No. EMR's screening of the Tidal project was pressed by an urgent need to have the joint agreement signed as quickly as possible. EMR states that the decision re project significance is based on the advice of outside departments and public concern. No specific examples of decision criteria were evident from the available documents.

- b) Was this proposal subjected to a rigorous and systematic screening review?

No. The procedure for this project was rushed by provincial government concerns to have the environmental clause fulfilled.

- c) Was there an evaluation of the effectiveness of the process to ensure it was accomplishing its objectives in this case?

Yes. According to documents, the proponent is undertaking environmental studies to monitor the outcome of screening recommendations.

3. Screening decisions must be based on adequate information.

- a) Does the department have the expertise to make environmental screening decisions?

No. See criterion 4, page 40.

b) Were alternatives considered?

Not applicable. The proposal was for a demonstration project that would show the use of tidal energy. It is an "alternative technology" and therefore the question is not relevant.

c) Were expert advisors used from outside the department, i.e. routine referral?

No. No expert advisors from outside EMR were consulted in the preparation of the EMR screening report. However, subsequent input from DFO and local organizations was identified during screening as a condition for project approval.

d) Was the public consulted?

No. Only after the screening review were public meetings held.

e) Was there sufficient information to:

i) make a fair or rational decision?

Unknown. Insufficient information was made available to assess this question. Given the failure to consult outside experts and the public during screening, it is unlikely that all relevant information was brought to bear on the screening recommendations.

ii) identify the data gaps in order to proceed with a more detailed investigation?

Unknown. Insufficient information was made available for me to assess this question.

CASE 2. Newfoundland-Labrador Power Mini-Hydro

The purpose of the project is to install a mini-hydro generating facility (less than 2MW output) to serve the domestic energy requirements of Roddickton, a small community on the Great Northern Peninsula of Newfoundland. The proponent agency is the Newfoundland and Labrador Hydro Corporation (NLH) which prepared an environmental evaluation of three possible sites for the

project. As with the Tidal project, EMR is the initiating agency because of a joint agreement between the federal and provincial governments to finance the project.

The agreement contained a clause stating:

The Corporation, before proceeding with the Project beyond Evaluation must prepare and submit to the Department of Energy, Mines and Resources an assessment of the likely environmental effect in a form and content acceptable to the said Department.

(Skinner, Feb. 21, 1980 Attachment 1)

Skinner (June 4, 1979) points out that no one had yet decided on "form and content" nor had standards for an "acceptable" statement been identified.

The screening document was prepared by NLH by May 11, 1972. (I did not receive a copy of this document.) The EMR review was completed on June 22, 1979. Thus the EMR review took 29 working days to complete. The reason given for the review time exceeding EMR's own guidelines was delay in getting a departmental opinion from DOE (Skinner, June 22, 1979).

Of the three sites, one was selected for further study by NLH. Environmental effects were cited as a principal factor in the choice based on discussions with provincial and federal environment agencies (Skinner, June 22, 1979).

The evaluation criteria area:

1. In order for a process to be legitimate, all affected interests should have the opportunity to be represented.

- a) Were there sufficient channels for these interests to communicate their concerns?

No. While there was input from provincial and federal environment agencies, there was no opportunity for participation by non-governmental organizations or the public.

- b) Were these concerns entered early in the process?

No. Obviously concerns not included in screening could not

participate at all. However, the interests that were consulted were able to identify environmental concerns through referrals.

- d) Did these range of interests affect screening decisions?

Yes. The environmental agencies did affect the choice of site for the hydro project.

2. The screening procedures should be rigorous and systematic.

- a) Was there a rigorous and formal procedure for screening with useful and applicable decision criteria?

No. The procedure applied was new and had not been formalized. There was no evidence from available documents of any screening criteria. Skinner acknowledged that "form and content" and "acceptable" standards for assessment had not been identified.

- b) Was the procedure applied in a systematic manner to this project?

Unknown. Insufficient information on the process was made available for me to assess this question. Available evidence indicated that the process was not firmly established to permit a systematic review by EMR.

- c) Was there an evaluation of the effectiveness of the process to ensure it is accomplishing its objectives in this case?

Unknown. There was no indication of any monitoring or evaluation from available documents.

3. Screening decisions must be based on adequate information.

- a) Does the department have the expertise to make environmental screening decisions?

No. See Criterion 4.

- b) Were alternatives identified?

Yes. Three sites were examined for the mini-hydro project.

The mini-hydro scheme is also considered an "alternative" technology.

- c) Were expert advisors used from outside the department, i.e. routine referral?

Yes. The project proposal was referred to the Newfoundland Department of Consumer Affairs and Environment which established a review committee of Environmental department representatives.

- d) Was the public consulted?

As previously noted, there was no public consultation. Local government officials were contacted regarding the town's water supply.

- e) Was there sufficient information to

- i) make a decision?

No. The principal concern of EMR appears to be the loss of fish habitat. This was examined by Federal Department of Fisheries. Other values (e.g. public concern, effect on terrestrial habitat, and other downstream effects) were not identified in the screening review.

- ii) identify the data gaps in order to proceed with a more detailed investigation?

No. Because other values were not considered in the screening review no other detailed investigations were required or recommended. However, there was a more general recommendation that the environmental implications of wide-scale deployment of mini-hydro technology be assessed.

4. Was the process effective in these two case studies?

No. The process suffered from several inadequacies which limited its effectiveness. The process is not systematically applied and there are no formal decision criteria. Public consultation is not a requirement of EMR screening procedures. It did occur in the first example, but only after the decision to build the project had been made. There is no overall evaluation of the effectiveness of the process. EMR's departmental expertise in making screening decisions is limited to earth sciences and mineral and resource

technology. The department has no biophysical or social impact experts. A major deficiency in the screening documents given to me to evaluate was the lack of detailed information on the process.

Conclusions

The screening process in EMR has been in operation for a little more than one year. In that period, some form of environmental assessment has been done on seven projects, including the two projects reviewed. The result has been a process that is not systematic, does not have any formal decision criteria or require that these be specified in each case and allows only limited public involvement. Documentation also seems to be limited. The department recognizes the present deficiencies in its process and is attempting to allow for public comment on projects and to develop a more systematic process for screening (Skinner, Feb. 4, 1980).

2. Screening: Department of Public Works

a. The Role of the Department

The Public Works Act (R.S.C. 1970 c.P.38) gives the department responsibility for the management and direction of the public works of Canada, except as specifically provided for in other statutes. This includes the responsibility for the construction and maintenance of public buildings, acquiring leased accommodation for public use, construction and maintenance of wharves, piers, roads, bridges, the Alcan and Trans Canada Highways and improvement of harbours and navigable channels. The operations are based on a highly decentralized delivery system. Administration is regionally based in Vancouver, Edmonton, Toronto, Ottawa, Montreal and Halifax.

Within DPW there are four main program areas: Accommodation, Transportation and Other Engineering Services, Professional and Other Technical Services, and the Marine Engineering Program. In order to allow study of the screening process on projects that have gone through both phases of EARP, the Marine Engineering Program was reviewed because it has had projects go through both phases. Only the Transportation and Marine Programs have referred projects to the formal review phase. The Transportation Program has very limited application in total numbers of projects, although it has undertaken several major projects such as the Shikwak and Dempster Highways.

b. The Screening Procedures

The following description of the process is based on the Operational Guidelines for the DPW Environmental Assessment Process (DPW, May, 1978), interviews with W. Trotter, E. Johnson (retired), H. Wu and D. Copeland, and subsequent correspondence.

DPW has divided screening into "pre-screening" and "screening" phases, with the IEE as a distinct third phase. Although not mentioned in the

documents, W. Trotter (pers. comm.) states that all projects valued at less than \$25,000 or for operations and maintenance are automatically eliminated from further consideration under EARP. All three stages of screening occur at the feasibility stage of the Project Delivery System (PDS).¹

Pre-screening

Pre-screening is the gathering of physical, social and biological data, described as Activities 5, 6, 7 of the feasibility stage (in figure 3).

It is a very broad examination of environmental criteria (concerns)² relevant to the project type and the particular characteristics of the site alternatives.

The Environmental Pre-screening Report is a compilation of only those environmental criteria where significant³ detrimental effects could occur or where there is some doubt as to whether or not a negative impact may occur.

(DPW, May 1978, p. 1)

The Operational Guidelines suggest that a full pre-screening report could avoid the second phase of screening and go to the IEE, where "out-of-house" expertise is used.

¹The PDS is a five stage process designed for the planning and management of capital investment projects. Feasibility is the second stage and forms the basis for departmental project approval or approval-in-principle which provides funding (see figure 3).

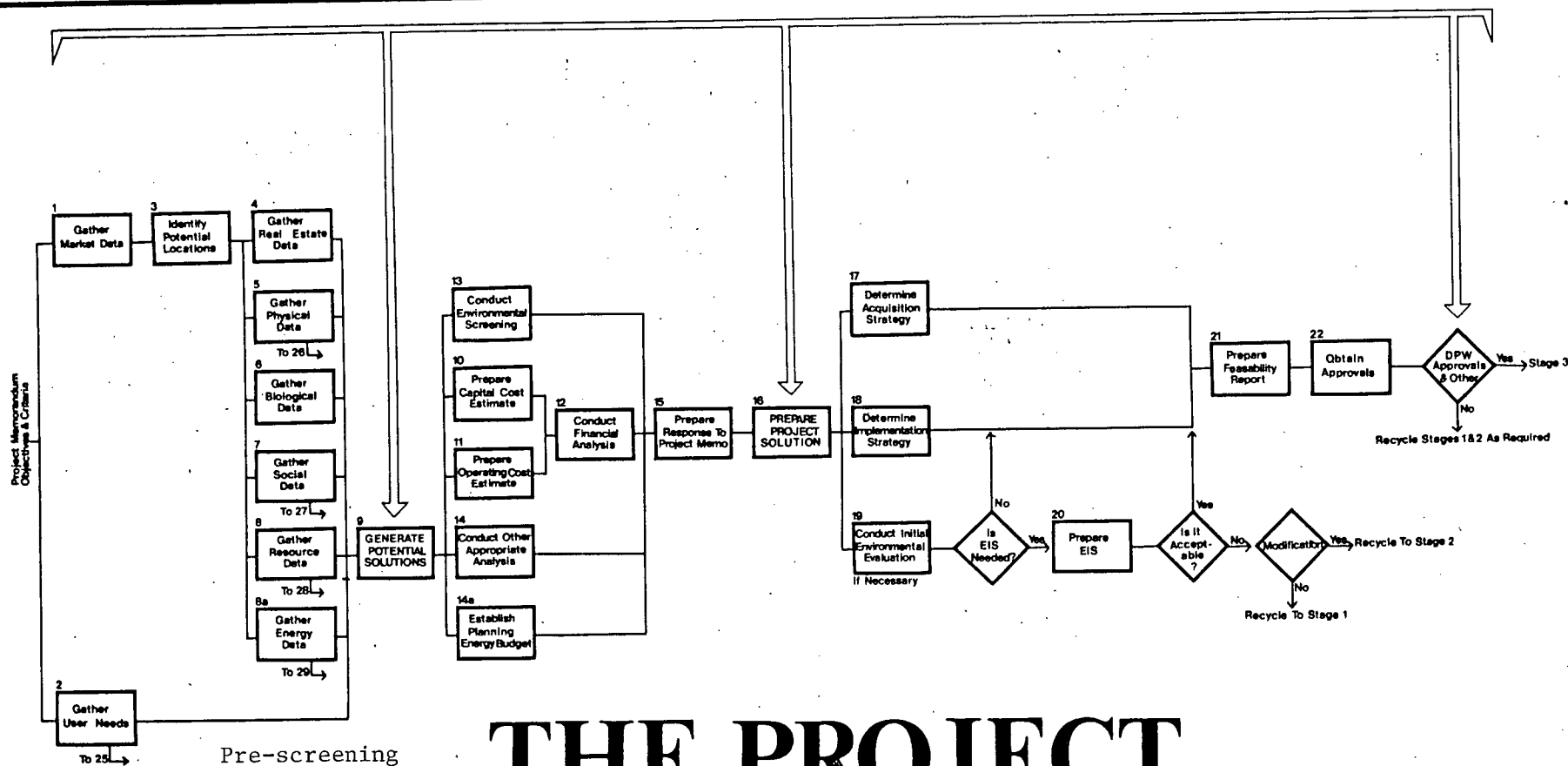
²The authors of the DPW report seem to have mixed the term criteria with concerns or variables. Criteria is consistently used when referring to potential environmental concerns. See page 14 for definition of criterion.

³DPW states that significance is ultimately a value judgment. They state: "hopefully, it will take into account the potential for concern and controversy that a project might create in both the public and professional communities. Concern and controversy as related to significance reflect such things as the impact's importance, magnitude and duration." (DPW, May, 1978, p. 1)

Figure 3

Schematic Diagram of DPW's feasibility study in project development showing screening activities.

Stage Two Feasibility Study



THE PROJECT DELIVERY SYSTEM

The pre-screening report is meant to be a brief document which includes the following factors:

1. An Introduction
 - general description of project and site(s).
(If report is to be sent to Environment Canada a more complete project description is required.)
2. Listing of Environmental Criteria
 - name of criteria followed by a description of possible impacts for each site.
3. Recommendations
 - may include mitigating measures.
 - a list of the site alternatives classed: Excellent, Very Good, Good, Fair, Poor.
4. Summary
 - pinpoints possible significant impacts
 - suggests which impacts require further detailed study or no study.
 - suggests what is required in the Screening Stage (or perhaps Initial Environmental Evaluation Stage).
5. Appendix (material not already available)
 - photos
 - maps
 - diagrams
 - regulations
 - other data

(DPW, May, 1978, p. 2)

DPW has the option of referring the pre-screening report to Environment Canada for their comments and advice. The project manager/project leader is responsible for the gathering and analysis of physical, biological and social data.

Public participation is of particular concern in cases where projects have been identified by DPW as having significant environmental impacts. "In these cases, information must be provided to the public and public response obtained during the early planning stages" (DPW, May, 1978, p. 5). The guidelines stress that this must occur for "significant" projects based on the February, 1977 adjustments to the EARP guidelines (see FEARO, Feb., 1977).

ENVIRONMENTAL SCREENING

"The screening report is a compilation of only those environmental criteria where potential detrimental impacts have been indicated or where there has been some doubt as identified in the preliminary screening report" (DPW, May 1978, p. 6). The report is comprised of:

1. A brief introduction
 - statement that Pre-Screening was completed (give date). (If report is to be sent to Environment Canada, when pre-screening report has not been submitted, a more complete project description is required).
2. List of Environmental Criteria
 - information collected.
 - description of possible consequences.
 - description of what further data is required in an I.E.E. if necessary
3. Recommendations
 - include mitigating measures.
 - indicate where further study is required.
4. Summary
 - suggests which impacts require further study in the I.E.E.
 - or states that no further studies required.
5. Appendix (material not already available)
 - photos
 - maps
 - diagrams
 - regulations
 - other data

(DPW, May, 1978, p. 7)

The project manager/leader, with advice from the regional environmental coordinator, as required, will examine the environmental concerns outlined by the pre-screening report as having possible significant effects. The responsibility for preparing the screening report and making the recommendation to refer the project to the IEE stage rests with the project manager/leader.

Screening is the stage at which all the factors are identified and a weighting must be assigned to them. If further evaluation is required then they go on to the IEE stage to get a meeting (with outside agencies).

(D. Copeland(b), pers. comm.)

The decision to refer the screening report to an outside agency (e.g. DOE) is at the discretion of the department.

INITIAL ENVIRONMENTAL EVALUATION (IEE)

Preparation of an IEE can also be required at the feasibility stage of the proposed activity. It is a more detailed assessment of the environmental criteria that have been listed as requiring further examination in the screening report. A consultant is contracted to complete this phase, using specific terms of reference based on the pre-screening and screening reports.

The report should contain:

1. Inventory of Impact Variables
 - identify, classify and define potential impact variables.
2. Project Description
 - objectives on purpose.
 - physical description.
 - construction, operation and maintenance procedures.
3. Impact Identification and Analysis
 - study consequences that could occur.
4. Impact Evaluation
 - evaluate impact significance level.
5. Recommendations
 - mitigating measures.
 - alternatives available.
 - ways to enhance environment.
6. Summary
 - summarize important findings
7. Appendices
 - information important to understanding any of the above.

When the study is complete it must be examined to ensure that the terms of reference have been met. If there are significant impacts which cannot be resolved, the project must go through the Environmental Assessment Panel process⁴ (Activity 20).

(DPW, May, 1978, pp. 9-10)

⁴See Appendix IV for a sample screening document used in the Maritime region.

The project manager/leader with advice from the regional environmental coordinator as required,

"prepares the terms of reference for a consultant to carry out the IEE Study; decides whether or not to use Environment Canada assistance; reviews the study report; decides if the impacts are of such significance that an EIS is required; or recommends preventative and mitigating measures for anticipating environmental effects that have been identified and are amenable to such measures."

(DPW May 1978, p. 10)

DPW is the only department that has undertaken an internal evaluation of its participation in EARP. The document (Trotter, August, 1979) was prepared for review by senior officials of DPW. However, as of January, 1980 senior officials have not responded to the concerns and recommendations of the report (Trotter, Jan. 3, 1980). Among the principal concerns in the report is a basic need to have full-time Regional Environmental Coordinators in all regions. Presently, there are six regional positions, one of which is full-time. The report estimates that the time devoted to screening related activities by environmental coordinators is between 1 and 50% in the other regions. In the Pacific region there was a full-time environmental coordinator until August, 1979. Since that time these responsibilities have been split between the Marine Engineering and Building Construction units. Within Marine Engineering the screening coordinator works on a part-time basis, his other role being deputy project manager. The Marine Screening Coordinator acknowledges that he is unable to devote the same amount of time to screening as his predecessor (Copeland(a) pers. comm.).

A second recommendation of the evaluation report with regard to regional coordinators is that they should be environmental planners rather than project engineers. This view is not shared by the Pacific region screening coordinator who feels planners "need extensive project experience

to appreciate mitigation methods. (It is) easier to take someone from engineering and (project) management, and develop their environmental skills" than vice versa (Copeland(b), pers. comm.). Copeland's views reflect the headquarter-regional split in responsibilities, i.e. Ottawa provides the theoretical framework for screening, and the regions must find means of implementing screening that suits their needs.

The long-term goals of the Division are:

1. To ensure that all projects go through the EARP. i.e. Projects in excess of \$25,000 which does not include operations and maintenance projects or those projects already contracted for construction, number about 450 for the 1979-80 year. During the 1977-78 fiscal year only 32 projects, nationally, were adequately assessed at the screening level.
2. To ensure that significant environmental issues in Departmental policies or programs are eventually delineated, appropriately evaluated and resolved.
3. To ensure the department 'plans environmentally' which is the ultimate all-inclusive goal of the Environmental Analysis Division and the basic reason for EARP.

(Trotter, August, 1979, p. 13)

One conclusion of the report is that if full-time Regional Environmental Coordinators were used in all regions, and two more staff at Headquarters (biologist and human ecologist), "and the appropriate executive support received, then both the letter and intent of the EARP could be satisfactorily met" (p. 15).⁵

⁵When the Environmental Analysis Division was established it was called the Environmental Coordination Branch and had the support of the Deputy Minister, Mr. Williams. Since that time the Branch has been reduced in status to a division, and the present Deputy Minister, Mr. Mackay, has not given any written or verbal commitment to EARP (Trotter, Jan. 3, 1980).

Case Studies of Screening in DPW

Analysis of the screening process is based on file information provided by the Pacific regional offices of the Marine Engineering Program in Public Works. The department allowed this writer to review three files on specific projects. Two of the files were selected by DPW with the claim these were representative of DPW screening. The third file was on a DPW project that had been referred to the formal assessment phase of EARP. The major constraint in doing the research was in finding a time convenient for staff to make the files available and to answer questions. The files contained a number of information gaps that were partially filled by EPS file information where there had been contact between the two agencies. I must stress that there is a total lack of documentation of screening activities in the files I was provided.

CASE 1

Marine Dredging-Sumas to Hope on Fraser River

The dredging program on this section of the Fraser River dates back to before World War II. The purpose of the dredging is to keep the Fraser River open for tugboat operations which haul log booms down to sawmills in the Lower Fraser Valley. The dredging keeps the waterway open during the low water months from late July to December. The dredging is seen as a significant benefit by the forest industry because it keeps logging activity and mill production at a steady level. The Hope to Sumas section of the Fraser River is heavily utilized by pink salmon for spawning purposes in the fall on odd numbered years. The Department of Fisheries and Oceans (DFO) has been concerned about the effect dredging could have on the spawning channels.

The files for the program begin in November, 1974 and continue until the present. There are seven separate file folders, each of which includes

one season or roughly one year. Over that period three letters referring the project to outside agencies for advice from E. Johnson, DPW Screening Officer, were included in the file. There is no screening checklist or matrix as recommended in the DPW guidelines. D. Copeland, temporary part-time screening coordinator, explained that the annual correspondence between DFO, DOE and DPW represented the screening process. He explained that no formally documented process exists except that all marine engineering projects are referred to the Environmental Protection Service. Exceptions are operations and maintenance and construction of new wharves unless there is a public conflict perceived by the project manager.

Screening is done through the use of field investigation and consultation with the appropriate government agencies. Copeland stressed that it is not an ad hoc process, and the same procedures are followed in each project screened. There is no formal written screening document because this represents "unnecessary paperwork" (Copeland(c), pers. comm.) Johnson (Sept. 2, 1975) wrote to the Department of Fisheries, identifying potential dredging sites that may be of concern to that department. No response from Fisheries was found in the files for that year. In subsequent years, there was correspondence from Fisheries stipulating certain dates for closure of dredging operations (e.g. Robertson, March and June, 1979). In 1979 Fisheries insisted that dredging cease between September 15, 1979 and May 31, 1980. The response of D. Dodge to the Head of the Fisheries Branch (Dodge, April 20, 1979) regarding the proposed closure was "to advise this office (DPW) will conduct the program as in the past in a manner where the needs of industry will be recognized and kept open for discussion beyond September 15th". These comments reflect the attitude of DPW that it is "responsible for the maintenance of navigational channels" and "are concerned with this aspect and justification of it." (D. Dodge, pers. comm). Fisheries have acknowledged that in the past

its demand for a September 15 closure is not practical and had recommended the dredging occur only after site specific evaluation (Sookachoff, June 1, 1977). The basis for the absolute closure in 1979 was that the year's run of pink salmon was expected to reach record proportions and it was particularly important from Fisheries' point of view that dredging activities cease. At no time was there any indication by DPW as the screening agency that they considered contacting other users of the river (e.g. recreational, commercial or native fishermen).

On October 15, 1979, Dodge informed Rivtow Straits that it was apparent Fisheries would not back away from their closure and in fact fiscal restraint under the Conservative government had precluded the possibility of any further funding of dredging activity for 1979. "Additionally . . . the Sumas to Hope dredging operation . . . is to come under scrutiny with the very real possibility it will be abandoned. An indepth benefit/cost analysis has been ordered and the matter of justification is to be thoroughly examined" (Dodge, October 15, 1979). At this point, the dredging issue was "raised" to the political level with a memo from Alex Patterson, MP for Fraser Valley East to the Minister of Public Works (October 15, 1979) which expressed concern over the closure of dredging activities and requested an additional 25 days dredging. DPW regional staff requested permission from Fisheries for an extension of dredging for three specific sites that had been identified as problem areas by tugboat operators. After site investigation by Fisheries and DPW officials the dredging period was extended by fifteen working days, covering one of three areas requested for dredging (Robertson, pers. comm.). The conclusion of the dredging issue was that dredging was extended but only in one area. A final memo on the subject by D. Dodge of Marine and Civil Engineering, DPW (Dec. 5, 1979), noted the extension of the dredging season

cost the department \$14,700. He concludes:

In light of this expenditure, sustaining an additional production (of logging related activity) . . . worth \$700,000 . . . we feel the undertaking was worthwhile.

It appears from these comments that DPW officials continue to perceive dredging activity in purely economic terms of direct costs and benefits.

The dredging program is an ongoing activity and the interaction between DPW and other agencies seems to be a standard regulatory process that would occur in the absence of any screening process. It is the view of regional staff at DPW that the interagency discussion are EARP and do serve a useful function. However, these activities have virtually nothing to do with the process I previously described.

CASE STUDY 2

Ladner Harbour Development

The proposal to redevelop and expand marina facilities at Ladner Harbour was apparently first initiated by the local member of Parliament in 1972. Tom Goode, MP for Delta, suggested to the Minister of Public Works that the harbour be widened by dredging (Goode, June 15, 1972). No further activity is recorded on file until 1975 when the provincial Fish and Wildlife Branch wrote to D. Dodge, DPW, stating "your letter of October 30, 1975 has been referred to this office from EPS for our review and comment." (West, 1975) No response was evident on file.

Subsequent documentation comes primarily from the EPS Project Status Record (June 17, 1976) because of information gaps in DPW files. This is apparently because DPW was not the proponent of the project. In April, 1976 there was a meeting held between Delta Municipality and DOE officials to discuss the proposed marina. The proponent, according to the EPS files, is the Municipality of Delta, while the responsible federal agency is the Small Craft

Harbours Branch of Fisheries and Marine Service. The role of DPW is to dredge the site and build the harbour facilities which would require screening. In June, 1976, DPW referred the dredging proposal to the RSCC for review. Several conditions were attached to an approval of the project and it was not until December, 1977, that Delta had the final details completed. On May 16, 1978, in a letter from R. Wallace (DPW) to W. Parkinson of the Small Craft Harbours Branch, DOE, Wallace outlines a number of problems in finding satisfactory sites for dredging spoil disposal. His main concern is to see that allocated funds are used:

In view of the fact that Ladner Reach is the only possible disposal site within economical pumping distance of the proposed marina basin, we must conclude that this project is now in jeopardy. As we are already very pressed for time, if a favourable decision on our proposal is not obtained in the very near future it will be impossible to spend the allocated FLIP funding by the end of September.

(Wallace, May 16, 1978)

Subsequently, on May 31, 1978, E. Johnson, DPW environmental coordinator requested the project be registered with the EPS. He also informed EPS the project would be going out to tenders in one month.

In August, 1978 an alternative dredging proposal was accepted and the project was commenced. There is no recorded description of how this alternative was selected or if it was screened.

As in the first case, there is no indication of any internal screening process, including consultation with potentially affected interests. Virtually all the activity could have taken place in the total absence of EARP. This reflects the lack of any documented screening information, analysis or recommendations. The file information provided was incomplete. There is some confusion as to the role of DPW, since they are neither the initiator or

proponent of the project although they are responsible for construction.

CASE STUDY 3

Lower Fraser River Channel Training Program

The purpose of the project is to direct river flows and increase the transport of river borne sediments through the navigable channel of the south arm of the Fraser River. This would be accomplished through construction of a number of rock groins and timber pile training walls. The project raises some environmental concerns because of the potential and unknown impacts on the salmon fishery and the estuary which is a valuable biotic resource.

The documentation of this project at the pre-formal assessment stage is quite sparse. This may be a result of the project being initiated in 1975 when screening procedures were in their early stages of implementation.

The procedure DPW followed to screen the project was based largely on discussion with other public agencies and an environmental overview study. In 1975 an "Environmental Overview Assessment and Guidelines" was prepared by Envirocon Consultants which documented existing environmental information and proposed guidelines for a detailed study of the project. In December, 1975 the report was referred by DPW to the Fisheries and Marine Services (FMS) of DOE. In January, 1976 copies of the overview assessment were referred to the International Pacific Salmon Fisheries Commission, Canadian Wildlife Service and the provincial Fish and Wildlife Branch of DPW and FMS. The overview assessment was then referred to the RSCC by FMS one week later. In February the assessment was distributed to the Department of Energy, Mines and Resources and the Environmental Management Service (EPS Project Status Record, Jan. 15, 1976). (There was no documentation of this process in DPW's own files.) On June 2, 1976 a letter was sent by DPW to the Chairman of the Environmental

Assessment Panel (FEARO) stating, in part:

It is evident to this Department from the comments of these DOE agencies (R.S.C.C.) and the report itself, that this project may have impacts of a major significance and should be covered by an Environmental Impact Statement.

(Stevens, June 2, 1976)

In July, 1976 a panel was formed to establish guidelines for a formal impact assessment and to review the EIS in addition to planning public hearings. After four years of study it is anticipated the public hearings will take place in late 1980.

The application of the criteria will be against all three projects because they follow similar processes (i.e. there was no screening process based on DPW's own description of screening), although the outputs differ.

1. In order for a process to be legitimate all affected interests should be represented.

- a) Are there sufficient channels for those interests to communicate their concerns?

No. There is no indication that attempts were made to get full representation of interests in any of the projects. However, DPW does have a well-established referral system with EPS and DFO.

The Fraser River Training Walls project was referred to provincial and other non-federal agencies for comment. The Ladner Harbour proposal was referred to the B.C. Fish and Wildlife Branch by EPS not DPW.

There was no provision for consultation with the potentially affected public in any of these projects except the "pro-development" forces (e.g. the logging and tugboat industry).

- b) Can these concerns be entered early in the project planning process?

No. Only the agencies that received referrals were contacted early in the planning process.

- c) Does this range of interest affect screening decisions?

No. Obviously only those agencies that received referrals, especially EPS and DFO, can affect screening decisions. For example, DFO affected the timing and location of dredging activity in the first example. Those excluded obviously have no input.

2. The screening procedures should be rigorous and systematic.

- a) Is there a rigorous and formal procedure for screening with useful and applicable decision criteria?

No. Screening in practice is a casual referral system which was in place prior to EARP. The screening procedures described on pages 40-45 were nowhere in evidence in the three projects reviewed. There is no documentation of the process, aside from correspondence with other agencies. The decision criteria for referring the project was based largely on the unsubstantiated judgment of the screening coordinator.

- b) Is the procedure applied in a systematic manner to all projects reviewed?

No. The first two projects show no indication of undergoing any kind of systematic screening process. An environmental report was prepared in the third example and the project was referred to FEARO. The lack of documentary evidence makes it difficult to assess what kind of screening process was followed, although it was obviously not the one that is described on pages 40-45.

- c) Is there a comprehensive evaluation of the effectiveness of the process to ensure it is accomplishing its objectives?

No. No evaluation of the screening process has been undertaken in Pacific region.

3. Screening decisions must be based on adequate information.

- a) Does the department have the expertise to make environmental screening decisions?

No. At present there are no professional staff with environmental expertise. This explains the strong reliance on a referral system.

- b) Are expert advisors used from outside the department, i.e. routine referral?

Yes. Projects are primarily referred to EPS or DFO.

- c) Is the public consulted?

No. There is no public consultation at the screening stage.

- d) Is there sufficient information to

- i) make a fair or rational decision?

No. DOE and DFO provided some biophysical information and advice that had a bearing on DPW screening decisions. However, no information on social concerns were sought.

- ii) identify the data gaps in order to proceed with a more detailed investigation?

Only in the case of Fraser River Training Wall were further studies required. This was achieved in the formal assessment phase in consultation with the FEARO panel prior to commencement of the final impact statement.

4. Is the process effective?

No. There is little documentation of an explicit process for any of the case study examples, and consequently, no evidence that a "screening process" by rational standards exists.

The referral system does provide a useful means of obtaining outside expert advice on proposed activities. The lack of any public input and

the apparent lack of a systematic referral system to provincial agencies must be viewed as additional drawbacks to the process based on the normative criteria.

The theoretical screening process described on pages 40-45 satisfies several of my criteria for assessment (e.g. formal and rigorous). It is not completely satisfactory since it ignores other factors such as public consultation and does not contain measurable assessment criteria. However, this theoretical screening process appears (without any means of formal analysis) superior to the procedures actually employed in the Pacific region.

Conclusions

The Department of Public Works appears to have an internal conflict between the goals and objectives of headquarters and regional staff. Headquarters issued guidelines and procedures for the implementation of screening. These are followed in Pacific region to the extent that:

- a) there is an internal consultation process between project managers and the screening coordinator;
- b) there is consultation with some outside experts;
- c) the concerns identified by these interests have either been incorporated in project design and construction or resulted in more intensive studies.

However, these are routine activities that existed prior to EARP.

The screening process has been shown to be inadequate in the examples used for this study. Two of the examples were selected by DPW as being representative of their screening process. Clearly, the screening activities do not meet even DPW's own standards for screening, as well as being inadequate based on the normative criteria of this study.

3. Screening: Ministry of Transport

a. The role of the department

The federal Department of Transport was established in 1936, and reorganized into the present ministry in 1970. MOT's terms of reference are contained in the Department of Transport Act (R.S.C. 1970, c.T-15). Currently, MOT's role is:

- (a) to ensure that national transportation policy influences and responds to the objectives and programs of the private and public sectors.
- (b) to provide, for any mode of transportation, such as way, terminal and vehicular services, supportable where appropriate by recoverable financing from the users or other beneficiaries, that cannot or should not be offered by the private or other public sectors.
- (c) to balance economic, technical and social consequences resulting from changes in capability or use of transportation services and ensure that socially and economically viable standards of vehicle, way, terminal and operator performance was established and adequately maintained.
- (d) development - to encourage and promote continuous improvement, innovation, growth or phase-out of modal and intermodal transportation.

(Duc and Sunga, 1976)

Within MOT there are four administration programs: air, marine, surface and the transportation development agency program. On the basis of expenditure estimates for 1976, air transportation administration (or CATA) is the largest program in MOT. The air administration program was examined in detail on the recommendation of FEARO officials and because it is the only program in MOT that has had a project complete the formal review phase. Examples from the Pacific region of CATA were used in this study. Throughout the text the acronym MOT will be used in referring specifically to CATA's operations.

MOT's environmental policy and screening procedures

The following description of screening procedures used by CATA are from MOT (1978), MOT (October, 1979); interviews with Mr. W. Stachuk, MOT, Ottawa; Messrs G. Pettigrew and R. Sisler, MOT, Vancouver; and from correspondence with Ottawa.

CATA's basic objective within its Environmental Protection Policy is stated as follows:

On a cost recoverable basis to the maximum practical extent to provide safe and efficient facilities and services for the support of aeronautics consistent with the protection of the environment.

(MOT, October, 1979)

The purpose of CATA's policy is to support and utilize the EAR process in "the continuing development of the air program". (MOT, October, 1979, p. 1).

The following are MOT's principles related to environmental protection:

- (a) Members of the public shall be involved in a consultative capacity in the development and continuing operation of CATA airports.
- (b) The procedural aspects of EARP are integrated into the CATA planning and management systems.
- (c) Environmental assessment, an integral part of the airport planning process, applies to both Air Navigation Activity Projects and Airport Activity Projects.
- (d) Projects on airports not owned by Transport Canada, towards which the Department is providing financial contributions, are also subject to the full Environmental Assessment and Review Process.
- (e) CATA officers who are responsible for the budgets of Planning Teams and Planning Groups should show, as separate items in their budgets, the costs associated with public consultation and environmental studies.

(MOT, October, 1979, p. 2)

Screening

The screening process is comprised of two phases: the Initial screening and the IEE. The initial screening process in MOT, by the environmental coordinators, is a very brief review of projects. Each spring, they review all capital projects in their five-year plan, and update the list of regional projects requiring an Initial Environmental Evaluation (IEE). These lists are forwarded to CATA headquarters in Ottawa and reviewed for approval. If headquarters accepts the list, the regions prepare IEE's for the identified projects.

The principal criterion for determining which projects require an IEE is as follows:

A Project which is likely to give rise to future public concern or to raise public controversy because of real or perceived environmental effects.
(MOT, October, 1979, p. 11)

An additional screening criterion for requiring an IEE is:

Runway extensions, new or additional runways, whether gravel or paved, require an IEE.
(MOT, 1978, p. 52)

The decisions at the screening stage are based on these criteria and on the judgment, knowledge and experience of CATA regional staff and opinion requested from DOE (MOT, 1978, p. 45). DOE input at the initial screening stage has been requested for only a small number of CATA projects (Sisler(b), pers comm.).

The Technical Training Course document (MOT, 1978, pp. 49-50) gives the following examples of projects usually eliminated from further consideration under EARP:

- 1) equipment procurements,
- 2) on-site repair of paved surfaces,
- 3) on-site repair of buildings,
- 4) on-site construction of new buildings (not including aircraft maintenance or engine testing facilities),

- 5) on-site construction of paved surfaces (not including runways),
- 6) on-site installation of equipment and surface structures,
- 7) on-site installation and construction of equipment shelters (if unique environmental features are not present);

and projects which are usually advanced for further environmental evaluation:

- 1) construction of new airports,
- 2) expansionary construction at existing airports where the environmental effects go beyond the airport boundary,
- 3) repair or modification work at existing airports where the environmental effects go beyond the airport boundary,
- 4) off-site installation of equipment and construction or equipment shelters where unique environmental features are involved.

Until recently, there has been no documentation of projects screened out from further EARP involvement. Thus there is no documented means of identifying how screening decisions are made. Under new guidelines issued from headquarters (MOT, October, 1979) all project documents with total estimated costs over \$50,000 must include an "environmental considerations sheet". This sheet identifies whether an IEE is required, and, where not, if costs for studies to develop mitigational measures are required. (See Appendix VI for example.) At the time of writing this addition to the screening process was in the process of being implemented in Pacific region (Pettigrew, pers. comm).

The Initial Environmental Evaluation (IEE)

The IEE is supposed to be prepared as early as possible in the planning stage of a project. The IEE is prepared based on readily available information and a copy of the completed document is sent to the RSCC requesting their comments on: "(a) the appropriateness of the planned environmental study program; and (b) whether or not a formal review by a FEARO panel is

required" (MOT, October, 1979, p. 15). After obtaining the comments and any environmental study guidelines from the RSCC, the regional office forwards the IEE to Ottawa for information and/or approval. Once the IEE is approved, the region prepares an approval-in-principle request, which is a document that explicitly indicates the capital costs, plus the cost of environmental studies and public consultation (where necessary).

The IEE does not follow the format prescribed in the Guidelines for preparing IEE's issued by FEARO. It is a brief one or two page document which has a checklist of biophysical and social impacts. Additional information may be attached, as deemed necessary by regional MOT staff for forwarding to the RSCC. The checklist is used to identify plans for additional review or environmental studies. (See Appendix IV for examples of an MOT Initial Evaluation.) The studies are apparently done by field observation, although no formal reports are attached to the IEE in Pacific Region (Sisler(a) and Pettigrew, pers. comm.). The IEE document for Kelowna airport prepared in early 1976 contains the subheading: "formerly called preliminary environmental assessment." In fact, the IEE is a preliminary environmental assessment, containing very limited information. It is a misnomer to call this brief statement an IEE (in the sense intended) by FEARO (see page 8).

The brevity of the first IEE Environment Canada received from MOT was commented on in an internal DOE memorandum on the Boundary Bay Reactivation. J. Herity, Chairman of the Pacific RSCC commented, "Yes, it's (the IEE) only one page long," followed by, "the IEE is admittedly somewhat unusual, but in the circumstances, quite practical" (Herity, June 21, 1976). Apparently, the department didn't realize this was MOT's standard procedure for preparing an IEE. A repetition of this format for proposed expansion of airport runways at Port Hardy, Smithers and Campbell River brought this comment

from EPS:

The information provided on, and with the (Initial Environmental) Evaluation forms is really not sufficient for us to comment in any detail at this time.

(Scott, July 18, 1977)

In summary, the screening process follows these steps:

1. Projects are reviewed annually to screen activities that may be of concern. In the Pacific region, the screening is carried out by two CATA environmental officers. Occasionally projects may be referred to DOE to determine what mitigational measures are required to allow the project to proceed.
2. An IEE is prepared for those projects that may have some environmental impacts. It is a brief one-page document with no formal studies attached. All IEE's are referred to the RSCC for their comments.

There were a total of 122 projects screened as of August, 1978, in Pacific Region. (There was a total of 1073 projects screened nationally.) There is no documentation of this first stage of screening on project files and MOT directed me to look at the IEE stage of screening. Of the 122 projects, 5 required further environmental evaluation (IEE). MOT provided me with the IEE's for all 5 projects. Two of the projects are described in detail for this analysis. The other three IEE examples were not analysed because they all followed exactly the same process and are included in Appendix VI. The documentation comes from the Pacific region offices of MOT. This writer was not allowed direct access to files, but was provided with copies of information from these files. Departmental staff provided the information they felt would be most useful for an examination of MOT's environmental assessment activities. They gave strong assurances that this was all the information relevant to

screening. EPS files were examined to corroborate and supplement MOT information. In the Kelowna case, some information was found to be of relevance that MOT did not include. This again reflects the problem of trying to undertake research of government programs when federal officials are very reluctant to allow open access to files.

CASE STUDY 1. Proposed runway extension at Kelowna Airport

The project's objective was to extend the runway 655 metres in order to permit increased scheduling and payload of flights into Kelowna.

The first indication of the proposed activity on file comes from the EPS Project Status Record (October 17, 1975). In a letter dated October 1, 1975, Transport Canada requested Treasury Board approval for the purchase of land required for the runway extension. (This would indicate MOT had already made a decision to extend the runway.) At an RSCC meeting on October 17, 1975, it was stated that MOT's request for funds bypassed DOE regionally. Subsequent correspondence (McLaren, November 17, 1975) indicated this was not accurate. Informal discussions had taken place but no formal referral had been made. Subsequently an IEE was prepared and referred to the RSCC for comment (see Appendix VI for the IEE). The RSCC reviewed the proposal and advised that in its opinion only minor impacts would be associated with the project (Lacate, January 19, 1976). The RSCC recommended that MOT consult with the B.C. Land Commission, the Regional District and the Municipality before making any major commitments. MOT did not provide me with any correspondence indicating this had been done, although copies of correspondence with CMHC regarding noise were attached (CMHC, January 14, 1976). There was no indication of any attempt to obtain public input.

CASE STUDY 2.

Boundary Bay Airport Reactivation

The Boundary Bay airport reactivation involves the reopening of a World War II Air Force base for use as a general aviation airport by light non-jet powered aircraft. The airport is located south of Vancouver in the Municipality of Delta on a 500 ha. site adjacent to Boundary Bay. The purpose of the project is to remove light aircraft from Vancouver International Airport where the mix with heavy commercial jets represents a safety hazard. The proponent and initiator is MOT. An IEE was prepared which identified several physical and social components that required further study. (See copy of IEE in Appendix VI.) The IEE also recommended that a formal environmental assessment be required. The IEE was forwarded to the RSCC, which agreed that an EIS be required for the project.

Some public consultation took place before preparation of the IEE. This preliminary consultation was carried out as part of the Airport Planning Consultative Committee for Vancouver. The recommendations of the Committee included references to the movement of general aviation from Vancouver to an alternate site, such as Abbotsford, Boundary Bay, etc. These recommendations were written up in the "Airport Planning Committee Report" issued March, 1976.

(Campbell, May, 1980)

Both projects followed much the same procedures (although containing different outputs) and so will be evaluated together in terms of the normative criteria.

1. In order for a process to be legitimate, all affected interests should have the opportunity to be represented.

- a) Are there sufficient channels for these interests to communicate their concerns?

No. There is no formal mechanism for including the potentially affected public in the screening process. In the case of "major projects" MOT maintains there is opportunity for public review. But the selection of what

are major projects remains for MOT to decide. MOT does maintain a referral system with federal Environment officials at the IEE stage.

- b) Can these concerns be entered early in the process?

No. Since there is no provision for including all affected interests in screening they cannot be entered early on. Those interests that are included do have input early in the process.

- c) Do these range of interests affect screening decisions?

Unknown. There was insufficient information made available to me to fully evaluate this question.

2. The screening procedures should be rigorous and systematic.

- a) Is there a rigorous and formal procedure for screening with relevant and practical decision criteria?

No. Screening is formalized to the extent that it does follow a systematic procedure. However, there is no documentation of projects that are removed from further consideration under EARP. The process is not rigorous since the screening criteria are vague and without any relevant specific environmental factors to evaluate against.

- b) Is the procedure applied in a systematic manner to all projects?

Yes, according to MOT officials. Although there is no documentation, screening is done on an annual basis by reviewing the five year plan of the region. At this stage projects requiring an IEE are identified and a one-page document is prepared.

- c) Is there a comprehensive evaluation of the effectiveness of the process to ensure it is accomplishing its objectives?

No. One report prepared by MOT for FEARO (Stachuk, Sept. 18, 1978), lists all the projects screened by MOT. Appendix A is titled an "Evaluation of the Application of EARP in CATA" but is simply an aggregation of national statistics on screening with no interpretation or analysis.

3. Screening decisions must be based on adequate information.

- a) Does the department have the expertise to make environmental screening decisions?

No. The level of screening is not adequate to suggest that the department has expertise in environmental screening. The criteria are environmentally meaningless and they do not require any specific expertise to assess. Screening decisions are largely left to professional judgment and experience which can be arbitrary and inconsistent.

- b) Are alternatives considered?

No. Only in the case of the Boundary Bay study were alternative sites considered. Kelowna and the other projects requiring an IEE were for expansion of existing facilities.

- c) Are expert advisors from outside the department used, i.e. routine referral?

Yes. At the IEE stage, all of the projects reviewed were referred to the RSCC for their comments. Projects are not referred at the initial screening stage.

- d) Is the public consulted?

No. Although there is provision for public consultation (MOT, October, 1979, p. 12), there was no opportunity for public participation evident from available documents.

- e) Is there sufficient information to
 - i) make a fair or rational decision?

No. There is no documentation indicating what information is provided. The Kelowna expansion was permitted, although there were no formal reviews or studies. MOT states that field investigation with DOE staff satisfies the need for information (Pettigrew, pers. comm.).

- ii) identify the data gaps in order to proceed with a more detailed investigation?

There is no consistent means of ensuring this (see Criterion 2). However, the Boundary Bay IEE was found to be inadequate and further study was recommended by the RSCC. (See Appendix VI)

4. Is the screening process effective?

No. The opinion of regional staff is that the process is effective because they have not received any complaints from the public or other government departments, including FEARO. It is the opinion of the author that the public has not criticized the process because virtually no one is aware of its existence. MOT's screening activities, including the IEE, have very limited input from the public. MOT does solicit the advice of other government departments. On a project-by-project basis MOT claims to be effective in meeting its own limited environmental objectives. It has evaluated the impacts of programs, policies and activities.

Conclusions

The screening and Initial Environmental Evaluation practices as employed by MOT are somewhat deceiving in their nomenclature. It would be more accurate to state that no IEE's are prepared since no information is collected. MOT uses FEARO nomenclature to suit its own purposes.

Recent changes in the screening process referred to in MOT (October, 1979) will increase accountability in screening, but it remains to be seen if they provide for better evaluation at the IEE stage. All projects over \$50,000 will require an environmental considerations sheet in accordance with MOT's October, 1979 Environmental Protection Planning document. Projects under \$50,000 will not require environmental assessments unless otherwise specified. This appears to be similar to the U.S. "categorical exclusion" category referred to in Chapter 2. The major difference would be that in the U.S., other government agencies and the public would have some input into defining the exclusions, and the final list of the exclusions would require the approval of the CEQ.

Overall, the MOT screening process (including the IEE stage) is weak. Although the process is formal and systematic, the standards for screening are very limited. The principal criterion for further environmental assessment is public controversy, yet there is no effective means of ensuring the public has any role in screening. On the basis of the criteria selected it would appear that a project that may have major environmental impacts but creates no public controversy would not require any further environmental studies.

There is a positive working relationship with the Department of Environment and joint field investigations of the proposed activities are common. Sisler(b) (pers. comm.) indicated that project managers and field staff are more environmentally aware than a few years ago because of liaison with MOT's own environmental staff and through joint DOE/MOT site inspections.

4. Screening: Department of Indian and Northern Affairs

DINA was first established in 1953 under the name the Department of Northern Affairs and Natural Resources. Indian and Northern Affairs operates under the Department of Indian Affairs and Northern Development Act (R.S.C. 1970-c.1-7). Under this Act the duties, powers, and functions of the Minister include the following:

- a) Indian Affairs;
- b) The Northwest Territories and the Yukon Territory and their resources and affairs;
- c) Eskimo (Inuit) Affairs;
- d) Ordinance, Admiralty and Dominion lands. (National parks and related activities were transferred over to Environment Canada in 1979.)

The Minister of Indian Affairs and Northern Development is also responsible for:

- a) coordinating the activities in the Northwest Territories and the Yukon Territory of the several departments, branches and agencies of the federal government;
- b) undertaking, promoting and recommending policies and programs for further economic and political development of the territories; and
- c) fostering through scientific investigation and technology, knowledge of the Canadian north and of the means of dealing with conditions related to its further development. (Duc and Sunga, 1976)

The Department exercises "province-like" authority over lands and resources north of 60°. The federal crown owns 98% of the land in the territories and

it is managed by DINA under the Territorial Lands Act (1953).

The management of water resources is also a federal concern. The Northern Inland Waters Act (1970) provides the legal framework for water management north of 60°. Other federal statutes such as the Arctic Waters Pollution Prevention Act (1970) which applies to only Arctic Marine Waters, and the Canada Water Act (1970) which applies to inland waters on a national scale, provide the federal government additional means for water management. All of these Acts and accompanying regulations are administered by DINA in the territories.

DINA obviously plays the major role in the north. It regulates most of the land-based activities (e.g. mining and petroleum exploration and development), and regulates some major water-related uses (e.g. off-shore drilling).

In terms of budget expenditures the Indian and Eskimo Affairs program which operates throughout Canada, spends the largest part of its funds on education and community affairs. Community affairs includes support of community government, physical improvements and social welfare services. The Northern Affairs program has a smaller budget than Indian and Eskimo Affairs, but its emphasis is more on resource and economic development (DINA, 1978-79).

The screening process in the Northern Affairs section of DINA will be studied in detail. Northern Affairs was chosen because of the overwhelming impact this section of the department has on the north. The following description and analysis is based on a review of relevant documents, open-ended interviews with representatives of the department, and follow-up correspondence.

1. Procedures

There are no formalized procedures for screening. Morrison(a)

(pers. comm.), Chief of the Environmental Assessment Division (Northern Environmental Protection Branch) cited three reasons for not having a formal screening process. The first was that "in all of the projects referred to FEARO by DIAND to date, a decision with respect to potential significance of impact was very easily made and no formal screening mechanism was necessary" (Morrison, March, 1980). The second was that DINA is a highly centralized department. Policy originates from headquarters while the regions administer and manage regulations.

Environmental review is considered to be primarily a headquarters responsibility, i.e. especially the review of major projects that may require referral to FEARO. However, what constitutes a major project is undefined and arrangements between headquarters and the regions with respect to the screening of projects are now under review.

(Morrison, March 1980)

DINA feels that it has the in-house expertise and legislative mandate to manage the environment without use of EARP. This view is reflected in the views of a senior official in DINA:

People should recognize that even in the absence of the EARP hearings, there are all sorts of regulatory Acts and mechanisms to ensure orderly development in the North. For example, such bodies as the Arctic Waters Advisory Committee (AWAC) and the Land Use Advisory Committees (LUAC), have been set up specifically to advise the government on local environmental concerns, and the terms and conditions that should be applied to development permits and licences. When necessary these bodies can hold public hearings to sound out local opinion. Additional EARP-related formal reviews are largely unnecessary and should therefore be reserved for high profile projects and policies of national significance.

(Ruel, cited in Rees, 1979)

There are in fact, three possible routes for DINA "screening". Screening may be done at the regional or headquarters level. Headquarters

reviews the "higher profile" projects, making recommendations for referral.⁶ Screening at headquarters can follow two possible routes. The first is simply an administrative decision made by the Director General. The decision to refer a project to the formal assessment phase is made on the advice of department staff and the Director's perceptions of the magnitude of the project to be of concern to the public. This process was followed for the Alaska Highway Gas Pipeline and the Polar Gas Pipeline proposals. The second route for screening is through the Environment Assessment Division. The Environmental Assessment Division has experts from several environmental areas (e.g. water and land management, plant biology) to review projects (Morrison(b), pers. comm.). Staff from the Division meet to discuss projects and make recommendations to the Director General on whether to refer the project to the formal assessment phase. On occasion, they refer the project proposal to DOE and DFO for comments prior to decision, depending on the scale of the project and the scope of the potential impacts (Morrison(b), pers. comm.). Examples are the Esso-Norman Wells and the Columbia Gas production and pipeline proposals. In no case is a formal screening document or folio prepared that would permit review and evaluation of these "routine" procedures.

⁶Recent correspondence between Don Gamble, of the Canadian Arctic Resources Committee and Paul Tellier, Deputy Minister, of DINA, has done little to clarify the division between regional and headquarters screening activities. Tellier writes: "Most project applications that may require referral to FEARO for review are for large projects and are filed at our Ottawa headquarters." This implies a preliminary level of screening to determine "large projects" which is not discussed. Tellier states that headquarters screening "is done basically according to the screening guidelines issued by FEARO although no impact matrix is used; the list of possible impacts is used more as a check list." However in my interviews with R. Morrison (head of the Assessment Division) no reference to the FEARO guide was made. Tellier again makes the point that "the assessment of the significance of impacts are (sic) based on the professional judgements of the staff. . . ." (Tellier, July 15, 1980).

With no known analytic framework, external review, or assessment criteria as a reference, professional judgment is no more than undocumented opinion.

The Yellowknife office has only recently become involved in screening. Projects screened have included proposed mines, and dredging activity in the Mackenzie Delta area. According to Morrison, environmental expertise within the regional office is limited so referral to the regionally based advisory committees forms the basis for input into the screening decisions (Morrison(b), pers. comm.). A. Redshaw, Chairman of AWAC (pers. comm.) stated that such advisory committees (when used) satisfied the screening requirements of FEARO.

The roles of the regional office and headquarters are not explicitly laid out, so that there is an internal power struggle within DINA on how and by whom screening decisions should be made (Bryant, Morrison(b), Redshaw, pers. comm.). This seems to be the result of a process that has no clearly specified and structured mechanisms.

It should be pointed out that this process applies only to the Northern Affairs Program of DINA. In the absence of any departmental policy, responsibility for screening has been left with the three separate programs of DINA.

Several sources within DINA who asked not to be identified, stated, "the Northern Affairs people did not want to allow projects to pass out of their control because they were protecting their empire." Clearly this does not bode well for the concept of the public interest in the environment.

I was able to document only one example of screening in DINA and much of this material is not directly related to the screening activity per se. As indicated above, there is no formal documentation of screening and related criteria. In most cases the final recommendations represent the unsubstantiated professional judgment of the relevant officials. The following is a brief summary of the 1979 proposal to dredge McKinley Bay and Tuktoyuktuk Harbour.

Case study of McKinley Bay dredging proposal

The proposal to dredge McKinley Bay and Tuktoyuktuk Harbour was first registered with EPS on June 20, 1979 by Dome Petroleum's subsidiary, Canadian Marine Drilling Ltd. (Canmar). The purpose of dredging was to create a basin with a maximum depth of 10 metres to allow supply ships to travel safely through the Bay to Tuktoyuktuk and provide an alternative winter port for drillships. The total size of the area in McKinley Bay to be dredged is 14.2 km. width by 100 m. length by 10 m. depth. The total amount of spoil is 4.2 million cubic metres (Hoos, June 25, 1979). The project has been described as one of the largest dredging operations ever undertaken under the authority of the Ocean Dumping Control Act (ODCA). The effect of the dredging was to prepare "the two sites for major arctic harbour/port development in support of massive oil and gas production" (Mar, July 10, 1979). The initiator was the Department of Indian and Northern Affairs because of its regulatory control over Arctic waters and land use. DOE might have been at least a co-initiator since it has regulatory control of ocean dumping, although this did not occur. Permission for dredging and spoils disposal was requested under the Arctic Waters Pollution Prevention Act (AWPPA) from DINA and ODCA from DOE. Proposals under AWPPA are considered by DINA through the Arctic Waters Advisory Committee (AWAC), chaired by A. Redshaw of DINA. The Regional Ocean Dumping Advisory Committee (RODAC), chaired by W. Bryant of EPS, reviews applications under the ODCA. In the case of Tuk Harbour/McKinley Bay it was decided that a joint AWAC/RODAC committee review the dredging proposal and act as DIAND's designated screen mechanism.

According to DINA:

Some members of the Advisory Committees suggested referral to FEARO but on the advice, prepared jointly by the two chairmen, our ADM decided that such a review was not required. It was furthermore decided -- again on the

advice of the two chairman -- that approval in principle would be given subject to certain conditions, and it was left to the 2 committees to complete the environmental review and to set terms and conditions for the dredging activity.

(Loken, 1979)

The following traces the actual events upon which this claim is based.

Public hearings were set up by AWAC/RODAC to allow for public comment on the proposal. Two meetings were held, first in Inuvik and then Tuktoyuktuk. Attendance at the hearings was very poor. This was attributed to short notice given, poor advertising of the meetings and lack of environmental information on the proposal (Bryant, pers. comm.). The counter argument to this was simple lack of interest, particularly in Inuvik which is quite distant from the dredging site (A. Redshaw, pers. comm.).

On July 6, the two committees met to discuss the dredging proposal and recommend appropriate action. In their discussions the committees noted that the federal government had previously stated that there would be no development in the McKinley Bay area because of negotiations with the Committee for Original Peoples Entitlement (COPE). (See Committee Recommendation 44:4.8, AWAC/RODAC, July 1979).

W. Bryant, Chairman of RODAC, transmitted the following recommendations to J. Mar, Regional Director of EPS in Edmonton, based on the July 6 meeting:

1) Regional Environmental Assessment Required.

It is now apparent that offshore development will continue to take place in the Beaufort, yet government and industry do not have the data base to deal effectively with the imminent offshore production activities. The RODAC recommends very strongly that a regional environmental assessment be planned and initiated immediately.

2) Approve Dredging Approach Channel to Tuk Harbour.

RODAC supports the proposal for the dredging of the approach channel to Tuk and recommends that approval be given subject

to the company carrying out the required engineering studies and filing their final design plans.

3) Environmental Assessment Required for Activities within Tuk Harbour.

The RODAC recommends that because of the concerns of the people of Tuk for domestic fishing within the confines of the harbour, that an environmental assessment of the harbour and associated land areas be made prior to any dredging and/or construction of additional shore facilities.

4) Defer Dredging and Harbour development at McKinley Bay.

RODAC recommends that until the IEE report has been filed by the company and assessed by government, no ocean dumping or associated land use permits be issued.

(W. Bryant, July 11, 1979)

(Essentially these same recommendations were sent by Redshaw to E. Cotterill, then ADM, DIAND.) Presumably, Bryant had communicated with Mar prior to sending the memo of July 11 with the recommendations because on July 10, 1979, Mar made similar recommendations to Ottawa. Mar stated in a July 10, 1979 memo to the Assistant Deputy Minister in Ottawa that McKinley Bay "in view of its magnitude of impact should be subjected to an environmental assessment and review process prior to any decision being made to issue an ocean dumping permit." (Mar, July 10, 1979). Apparently, included with the memo was a "Minister's briefing note" which criticized DINA's actions in northern development and Dome Petroleum's "ludicrous" time frame for environmental assessment. (Received by the author under separate cover. The tone and content of the document is wholly compatible with the July 10 memo.) The briefing note recommends that the Minister:

. . . deny application and request DINA to formally submit the proposal and associated activities to Beaufort Sea hydro-carbon production to the FEAR Office for formal public review and assessment.

The reasons given for this recommendation are as follows:

Dredging at this time can be considered a major step towards full scale oil and gas production in

the Beaufort Sea, that will have major and long term impacts (social and environmental) in the Mackenzie Delta region. Permission to proceed with this application will be a first and implicit approval by government to proceed towards production. This will defeat the spirit and intent of the federal EAR process and make it difficult, if not impossible, to require sound planning and the consideration of environmental considerations at the front end of the decision making process. . .

(emphasis added)

This advice was rejected by senior DOE officials in Ottawa, who apparently imposed a very narrow interpretation to the mandate of ODCA. This interpretation was conveyed to Mar, who responded to the RODAC recommendation the next day.

ODCA "is not the appropriate mechanism for use in initiating a general environmental assessment of a development undertaking" (Mar, July 12, 1979). Mar also stated that an IEE for harbour development should be a DINA responsibility and that dredging should not be deferred unless permitting conditions could not be met. He instructed Bryant "unless we can specifically identify unacceptable impact on marine mammals, etc., normal processing of the (McKinley Bay ODCA) permit should proceed" (Mar, July 12, 1979). Mar clearly had had a change of heart from his previous statements of July 10.

Subsequent correspondence between L. Harding, EPS, Yellowknife (October 22, 1979) and G. V. Buxton, EPS, Ottawa (November 14, 1979) indicate obvious frustration on the part of Yellowknife staff over Ottawa's narrow interpretation of the ODCA. Harding was concerned that the narrow interpretation of the Act imposed by headquarters prevented RODAC from serving its mandate. He states:

If an Ocean Dumping Permit cannot address items not directly related to dumping (for example, effects of associated activities on birds or marine mammals) then where is our one-window approach? As a case in point, in processing the permits for dredging at

McKinley Bay, we were given quite specific instructions
not to consider the broad environmental aspects . . .

(Harding, October 22, 1979, emphasis
added)

Buxton's response is illuminating in its description of what he considers to be DOE's responsibilities vis-a-vis the environment and the EAR process. He recalls a meeting between the president or vice-president of Dome and senior DOE officials discussing "the need to proceed rapidly with the expansion of various harbour facilities (Tuk and McKinley) in order to further the Federal Government's stated priority objective of self-sufficiency (Buxton, 1979).⁷ The outcome of the alleged meeting was that the senior DOE officials "indicated their desire to ensure the provision of adequate environmental protection measures while, at the same time, avoiding any unnecessary and time-consuming administrative hindrances." He also states "the fundamental concerns (assessing the overall impact of this major energy related activity) belonged to the EARP and the time frame for this consideration was unknown and, in fact, to a large degree, outside our sphere of influence . . . the appropriate department for initiating the DOE recommended EARP review was DINA."

Accordingly:

Our recommendations . . . were that if we were forced to consider this activity . . . before a clear instruction on the overall environmental acceptability was provided, then we would respond clearly and solely in the context and spirit of ODCA. . . We would simply be addressing the 'standard' environmental concerns in relation to dredging in the usual manner. Thus you can

⁷ G. R. Harrison, Dome's Senior Vice-President, and J. Gerin, Senior Assistant Deputy Minister, DOE, have both denied such a meeting occurred (Harrison, Feb. 21, 1980 and Gerin, April 22, 1980). There are other government documents which refer to a meeting between Dome and senior government representatives regarding McKinley Bay (see Boothroyd, 1979; Clarke, 1980; Hoos of Canmar also mentioned a meeting with senior officials in the AWAC/RODAC minutes, July 6, 1979).

appreciate our desire not to have the regional staff expand the RODAC process to try to take the place of EARP.

(Buxton, November 14, 1979)

This view, implemented through Mar's instructions of July 12, 1979, seems to exclude any possibility of RODAC being involved in the screening process or of the EARP review.

Remarkably it conflicts with DINA's claim that the joint Committee was serving as the EARP screening mechanism:

. . . far from displacing EARP, AWAC/RODAC were EARP at the screening level. As part of the designated screening mechanism it was therefore RODAC's duty to recommend referral of McKinley Bay to FEARO for formal review if justified by the facts, independent of any specific responsibilities under the ODCA.

(Rees, 1980)

The subsequent decisions by DINA can also be questioned.

E. Cotterill, Senior Assistant Deputy Minister in DINA, gave approval-in-principle (A.I.P.) to Dome on July 13, 1979, to dredge McKinley Bay subject to certain conditions, including the preparation of an IEE and obtaining approval under the ODCA. However, contrary to the recommendations of the AWAC/RODAC Committees there was no stipulation that the IEE be "assessed by government" prior to commencement of dredging.

However, Cotterill did offer the following commitment to development in the region:

No land use permit or lease will be issued until your company has submitted a comprehensive plan for the future harbour facilities at McKinley Bay . . . (and in the Beaufort Sea area) . . . so that environmental assessment and planning can be carried out on a comprehensive regional rather than a site-specific basis.

(Cotterill, July 13, 1979)

The IEE for McKinley Bay was produced in early August. Joint AWAC/RODAC meetings were held August 16/17, 1979 to discuss the IEE. There was

general criticism regarding the deficiencies of the IEE and it was recommended by a majority on the two committees that the project be delayed and that it go through formal EARP review (AWAC/RODAC, August 16, 1979).

This recommendation was restated by L. Harding (Acting Chairman, RODAC) in letters to A. Redshaw (Chairman, AWAC) and J. Mar (Regional Director, EPS) emphasizing the need for further environmental assessment (Harding, August 20, 1979 A and B). In his letter to Mar, Harding reported the strong reservations and recommendations of individual committee members. Harding then refers to Cotterill's condition that a comprehensive plan for harbour and support facilities in the Beaufort was required "prior to final approval". He also cited the COPE-Government of Canada agreement that the McKinley Bay land area "had been set aside as a reindeer grazing reserve where no development would be allowed". In light of these points, Harding states:

Clearly dredging at McKinley Bay cannot proceed this year if all the above recommendations and conditions are to be met Since there are no other formal permits the consequences of issuing an Ocean Dumping Permit would be to allow dredging to proceed immediately.

In view of the strong opposition from some members on environmental grounds, it may be wise to examine our (DOE) responsibility with respect to EARP, as the regulatory authority, before issuing the permit.

(Harding, August 20, 1979B)

Harding's letter reflects RODAC's reluctance to issue the ODCA permit. As well, it indicates the possibility of DOE using the ODCA as a means of taking on the role of initiator in order to refer the project to a formal EARP review. No action was taken by Ottawa on the RODAC concerns and the ODCA permit was issued within three days of Harding's letter.

DINA was now clearly left with the responsibility for referring the project to the formal assessment phase since the regulatory decision to dredge was made by EPS in issuing an Ocean Dumping Permit. DINA disregarded the

recommendations of its own AWAC committee and the EPS RODAC committee to refer the dredging proposal to FEARO. This sequence of events clearly reveals that contrary to DINA's original statement critical decisions taken by government respecting McKinley Bay were against the specific advice of the AWAC/RODAC and their chairmen.⁸

The role of DOE's RSCC is worth mentioning as a postscript. On September 7, 1979, two weeks after the issuance of permits and five days after the commencement of dredging, the RSCC met to discuss "procedural problems with McKinley Bay." They also agreed that "a review be conducted on the IEE's for McKinley Bay" (Boothroyd, October 9, 1979). In this case, the RSCC was clearly only a belated and passive advisor on environmental matters with projects referred to it at the discretion of initiating agencies, in this case DINA.

It is useful to review the McKinley Bay decision-making process in light of the normative criteria derived in Chapter 2.

1. In order for a process to be legitimate all affected interests must be represented.
 - a) Were there sufficient channels for these interests to communicate their concerns?

Potentially. The advisory committees provide a wide range of interests. (See Appendix VII for a list of members on advisory committees.)

⁸Løken has since argued that the decisions to proceed were based on DINA's perceptions of the dredging proposal as merely "to provide winter anchorage for drilling vessels" and not as "preparations for a major harbour facility." (Løken, 1980). However as the available documentation shows "(DINA) is the only actor in the play to consider Beaufort harbour development merely as support for Dome's exploratory activities. It is precisely such "judgments" made in Ottawa that critics see leading to the incremental loss of control over development activity in the north by (DINA)" (Rees, May 29, 1980.)

In any event, screening decisions should presumably be based on consideration of environmental impact not purpose of the project.

Hearings were held in Tuk and Inuvik to allow the public to comment. However, these were on short notice and poorly attended and no environmental information was presented. The proponent was apparently able to communicate its concerns at the regional and headquarters level. The RSCC could have made comments on the proposal but did not meet until after approval had been given.

- b) Could these concerns be entered early in the project planning process?

Not in the case of McKinley Bay. The process was rushed all the way through. The environmental evaluation was clearly regarded as a separate process and potential impediment to the proposal by both Dome/Canmar and Ottawa. The hearings were held without sufficient notice being given to the public. Moreover, DOE's RSCC did not meet to review the project until after it had gotten under way. The issuing of permits did not follow normal procedures:

The urgency in getting these permits to you precluded the normal preliminary review of wording with your officials.

(Mar, August 23, 1979)

- c) Did this range of interests affect screening decisions?

Not substantially. In the case of McKinley Bay, Ottawa rejected many specific recommendations of the screening committees and Dome/Canmar apparently got precisely what it wanted. Dome's Senior Vice-President commented:

In my view, the response by the various government agencies and committees was most commendable and the project demonstrates that things can get done in Canada's north in both a prompt and responsible manner.

(Harrison, November 22, 1979)

In the end, the advisory committees were able merely to specify limited terms and conditions. DOE had, but did not use, a regulatory lever

through the ODCA to make issuance of an ODCA permit contingent on the outcome of a formal EARP review (Rees, February, 1980). DINA simply rejected the recommendations of the committees. Finally, the RSCC could not affect the project after the fact.

2. The screening procedures should be rigorous and systematic.

- a) Was there a rigorous and formal procedure for screening with relevant and practical decision criteria?

No. It is clear that DOE and DINA did not even agree on the role of AWAC/RODAC joint committees. While DINA apparently considered it to be the EARP screening mechanism, DOE (Ottawa) did not want RODAC's mandate to include environmental assessment in the context of EARP. In any event, the advice of both committees was ignored by DINA. Beyond the lack of adequate information decision criteria were not explicit. However those of the advisory committees were obviously different from those of DINA and DOE.

- b) Was this proposal subjected to a rigorous and systematic screening review?

No. There was no indication that the project was subjected to a systematic review.

- c) Was there an evaluation of the effectiveness of the process to ensure it is accomplishing its objectives in this case?

Not in any formal sense (e.g. report/feedback). However, on-site monitoring of the project is required. The effectiveness of this monitoring is unknown although there have been apparent violations (Rees, pers. comm.).

3. Screening decisions must be based on adequate information.

- a) Does the department have the expertise to make environmental screening decisions?

No. The regional DINA office does not have this expertise, but makes use instead of multi-departmental advisory committees.

b) Were alternatives considered?

No. Dredging at McKinley Bay was the only alternative presented to the public at the meetings in Tuk and Inuvik.

c) Were expert advisors used from outside the department, i.e. routine referral?

Yes, in the form of the advisory committees.

d) Was the public consulted?

Only very ineffectively and even this was unusual. Public consultation is not usually used (Redshaw, pers. comm.).

e) Was there sufficient information to

i) make a fair or rational decision?

No. The recommendations of the advisory committees indicate further studies were necessary (preferably through a formal EARP review) before a decision on development could rationally be made.

ii) identify the data gaps in order to proceed with a more detailed investigation?

Yes, but no further studies were actually stipulated prior to issuing the dredging permit.

4. Is the process effective?

The process was not only ineffective, it is questionable whether a screening process was in place, given the inconsistency between DOE and DINA re the role of the advisory committees. The split in screening roles between Ottawa and Yellowknife also impedes the possibility of an effective screening process.

The overall conclusions from this project are quite clear:

1. The screening process was severely handicapped but did produce specific recommendations, reflecting caution in the absence of knowledge;
2. DIAND rejected this advice and initially attempted a "cover-up" by claiming that actions taken resulted from screening decisions.
3. No explicit policy basis was offered by DINA for permitting development to proceed on Dome's schedule. Internal documents reveal a strong belief among civil servants that Dome's high level lobby effort was an important factor.

5. Screening: The Role of the Department of Environment

A discussion of the EARP screening process would not be complete without a review of the role of DOE as it affects the process. As previously mentioned, the screening process is based on self-assessment by government agencies. It has also been mentioned that federal departments are directly accountable to their minister, who in turn is accountable to Cabinet and Parliament. These policies and traditions mitigate against DOE having a strong and active role in screening of projects. Nevertheless, the department has been able to act in an advisory capacity to most government departments. There are three points worth bearing in mind when reviewing DOE's role:

- 1) With regard to EARP, the department can only act as an advisor to departments who voluntarily refer projects to DOE. That is, DOE only receives the projects that other departments refer to it, and cannot require a project be referred to the formal panel process, except through political suasion.
- 2) The department has legal capacity to prosecute infractions against Acts under its jurisdiction (e.g. Canada Water Act, Canada Wildlife Act, Clean Air Act, Migratory Birds Convention Act and the Ocean Dumping Control Act), as well as Section 33 of the Fisheries Act.
- 3) The department has an obligation under the Cabinet Policy Directive of 1973 establishing EARP to screen its own projects, programs and activities.

The Environmental Protection Service (EPS) is the focal point for contact by other government departments, industry, the public and the provinces on matters of environmental protection. EPS receives all referrals on matters

related to pollution, federal activities, and EARP (see memorandum from Fahlman to Heskin, July 17, 1979).

EPS acts as an advisor on projects referred by government agencies. Projects that it considers significant are registered with the Regional Screening and Coordinating Committee (RSCC) set up specifically for this purpose. The RSCC is composed of representatives of each of the different services within DOE (e.g. Canadian Wildlife Service, Atmospheric Environmental Service). The RSCC will set up a task force to review the project, and make recommendations on how the project ought to proceed, i.e. certain mitigating measures may be recommended to ensure the project meets legislative as well as EARP requirements.

Although EPS has no specific regulations or guidelines requiring referral of projects, all of the government agencies studied use the referral system to some extent. MOT requires that all runway extensions or paving of runways be referred to EPS. DPW has a policy that all Marine Engineering projects (with certain exceptions) be referred to EPS. EMR refers all projects reviewed for screening to EPS and the Department of Fisheries. DINA uses both the LUAC/AWAC committees which it chairs and the RODAC advisory committee and the RSCC to obtain advice from DOE.

One might expect that with all this available environmental expertise (albeit on a purely ad hoc and advisory basis) sound environmental decision-making would occur. The results as shown in DIAND and to a lesser extent in DPW indicate this is not always the case.

DOE faces a number of problems in its involvement with EARP:

1. The use of departmental expertise is advisory only.
2. There is no specified procedure stating at what point in the EAR process DOE should be consulted.

3. There is no definite position or national perspective on DOE's involvement with EARP.
4. The RSCC can only respond to projects voluntarily referred to them by initiating agencies.
5. DOE is considered a "junior" department with the minister usually having a lower status in cabinet.

DOE's role (or lack thereof) in Canada's northern environment was clearly demonstrated in the case study of McKinley Bay. This study indicated that DOE suffered from all of the above problems.

The future role for DOE in EARP appears to be basically the same in principle, i.e. advisory in nature. There have been attempts to clarify the roles and responsibilities of DOE in the screening phase of EARP, the first being the "Operating Guidelines between FEARO, DOE and DFO" in 1978. Most recently, a draft discussion paper prepared by Dave Marshall of FEARO (March, 1980) based on his previous employment at DOE, states the roles and responsibilities of DOE in EARP. The tone of the document is contradictory because it "requires" DOE to "offer" information and to "advise" other departments. In other words, DOE must offer environmental advice, but the other government departments are not required to request it, accept it or use it. For example, "DOE shall offer to review the screening processes and decisions of federal agencies. . ." and, "if DOE identifies a strong potential for significant effects, DOE shall remind the proponent of its obligations for formal referral under the terms of reference of EARP. This step in the process should be considered as an educational tool to assist the decision-making process rather than as an enforced requirement" (emphasis added) (Marshall, 1980, pp. 4-5).

On a positive note, the paper does set new and useful priorities for DOE. In terms of screening, the following are noteworthy:

1. More attention shall be focussed on carrying out follow-up studies to assess the effectiveness of DOE recommendations. This is one area where DOE shall devote a greater percentage of the resources used for EARP. Follow-up activity shall be carried out for all projects given a panel review, and for those projects not given panel review follow-up activity shall be conducted on a case-by-case basis on the recommendations for mitigating the environmental affects of projects allowed to proceed.
2. DOE shall reorient its involvement in the screening stage of the EAR process. Emphasis shall be placed upon assisting other government departments in developing and assessing their screening processes rather than actually becoming involved in the screening projects. This activity should include the promotion of DOE codes, guidelines and policies.
3. All services within the Department shall prepare and implement effective internal screening procedures.
4. The Regional Screening and Coordinating Committees shall be re-named the Regional Committees on EARP and the activities of these committees shall concentrate on DOE regional activities in EARP.

(Marshall, p. 11)

In order to implement the policy statement and directives in this document the Senior Assistant Deputy Minister, the Assistant Deputy Ministers, and the Regional Director Generals "shall" develop and implement "required" specific directives and procedures.

Priority #4 refers to the lack of any consistent screening procedures in DOE. Screening is applied within different services of DOE (e.g. Parks Canada), but it is not fully implemented in the department (Paul Scott, pers. comm.).

Conclusions

DOE's involvement in the screening activities of other departments

is largely dependent on the goodwill of other government departments. These departments have no legal obligation to seek the advice of DOE.

The most recent statement of DOE's role indicates no radical changes from past policy. The changes will make DOE operations more effective internally, but there is no indication that interaction with other government departments will change.

B. Discussion and Conclusions

The Environmental Assessment and Review Process suffers from a number of deficiencies. The process contains no specific guidelines or regulations that departments and agencies are compelled to follow. There is no definition of what constitutes significant impacts in DINA and EMR, while in DPW and MOT it is based almost entirely on public perception of significance and the department's "professional judgment". There are no clearly measurable criteria for assessment used by DINA and EMR while the criteria are inadequate in MOT and DPW. The role of the public is not clearly defined in any of the departments' procedures. All of these inadequacies are reflected to some extent in the case studies I examined.

The following is a summary and review of the departments' screening in light of my assessment criteria:

1. In order for a public process to be legitimate, all affected interests should be given the opportunity to be represented.

The first criterion used in the assessment of the process indicate the following points (see Table 1 for summary):

- a) There were insufficient channels for the representation of interests in all of the eight projects assessed. Two of the projects had the potential to have sufficient representation, but because of timing and meeting format were not.
- b) There was indication in seven of the projects that the concerns of only a few affected interests were sought early in the planning process by the initiators or proponents. Referral was limited to a few government agencies.
- c) There was evidence that where external advice was sought these concerns affected screening decisions in all projects to some extent. In the DINA example, the effect of external advice to

Table 1
Summary of the Evaluation of Screening
Procedures in Selected Government Departments
CRITERIA

Departments and Projects.	1. Representation of Interest			2. Rigorous and Systematic			3. Adequacy of Information					4. Effectiveness	
	a) Sufficient channels	b) Early Application	c) Affect Decisions	a) Formal Procedure	b) Systematic Application	c) Evaluation	a) In house Expertise	b) Alternatives	c) Referrals	d) Public Consulted	e) Sufficient information: for decision		further study
ENR 1. Nova Scotia Tidal Demonstration Project	No	Yes	Unknown	Yes	No	Yes	No	N/A	No	No	Unknown	Unknown	Inadequate
2. Newfoundland-Labrador Mini Hydro	No	No	Yes	No	Unknown	Unknown	No	Yes	Yes	No	No	No	Inadequate
DPW 1. Sumas-Hope Dredging													
2. Ladner Harbour	No	No	No	No	No	No	No	No	Yes	No	No	See text	Inadequate
3. Fraser River Training Walls													
MOT 1. Kelowna Airport	No	No	No	No	Yes	No	No	No	Yes	No	No	No	Inadequate
2. Boundary Bay Airport													
DINA 1. McKinley Bay Dredging	Potentially Yes	No	No	No	No	No	No	Yes	Yes	Ineffective	No	Yes	Inadequate

(See text for details. This is a summary only, and is not sufficient for an informed assessment of departmental screening procedures.)

N/A - not applicable

DOE was limited to the terms and conditions attached to the ODCA permit. The concerned interests tended almost exclusively to be the Department of Environment. DOE is a legitimate interested concern, however it is doubtful whether it represents all the public interests.

In general, the initiating agencies have obtained the comments and advice from other government departments, particularly the federal and provincial levels. There is evidence that the opinions and comments of industry have been heard in DINA and DPW. However, the public has been under-represented in virtually all the cases studied. It can be concluded that none of the departmental screening procedures allow for full representation of potentially affected interests.

2. The screening procedures should be rigorous and systematic.

The following points were identified in the analysis of the second criterion:

- a) One of the four departments has a formal procedure for screening, but none have relevant or practical decision criteria.
- b) The process is systematically applied in only one of the four departments. Although it has taken over six years to implement screening, EMR hopes to have a systematic process operating in the near future. DINA officials have talked in vague terms of implementing a systematic screening process, but no definite plans appear to be in place.
- c) No evaluation has been undertaken in any of the departments to determine if screening is meeting departmental standards of effectiveness. Likewise, FEARO has no overall evaluation

of screening.

The application of the process in a rigorous and systematic manner was inadequate in all the departments studied. Screening procedures should be flexible and take departmental differences into account. However, there should be some internal consistency and rigor in the application of the procedures in order to increase accountability and reduce bias.

DIAND's screening procedures as DINA officials describe them are not rigorous or systematic. There is no documentation of screening in most cases. It is doubtful if the procedures described by DIAND for screening in the case of McKinley Bay really serve that purpose at all. The concept of referring proposed activities to other government agencies through a committee structure has the potential for being a very effective means of including the concerns of most affected interests in the screening process. However, until DIAND offers more than lip service to these committees, their effectiveness in the the EAR process is minimal.

Although it has taken six years to do so, EMR's screening procedures are now in their early stages of implementation. Because EMR works so closely with provincial governments and agencies the actual screening document is usually prepared by the proponent with EMR reviewing the report. The department has no guidelines for the production of the report or specific criteria for review of the document. The examples used were selected by EMR and presumably would be their 'models' for screening and at least representative of EMR screening procedures.

The Pacific Region of DPW states that it follows a systematic process of screening, but there is no documentation of screening except in project referrals to other government agencies for their advice and comments. There is no environmental expertise within the Pacific Region offices at

present. One of the reasons for the department not having a formal documented process is because of the lack of commitment by senior officials in Ottawa. Since DPW selected the examples for me to study they should be considered models or at least representative of screening by DPW officials in Pacific region.

The Ministry of Transport has developed a two-stage screening process. The first stage of screening contains no documentation and is based on the criteria and professional judgment of two screening coordinators. The second level (called the Initial Environmental Evaluation) is a check-list of potential environmental concerns. The check-list describes specific studies that should be carried out, yet there was no documented evidence this was done. MOT staff explained this was done through joint field investigations with DOE staff. However, it is evident from DOE correspondence that they do not view MOT's methods of preparing IEE's as being satisfactory.

MOT and DPW largely assess projects they initiate and this may explain why they implemented systematic screening procedures far earlier than DINA or EMR. They control the activity much more closely than DIAND or EMR and it is simpler to apply screening early in project planning. EMR and DIAND are faced with the difficulty of reacting to project proposals by provincial governments or private industry acting as a facilitator, and also reviewing them to ensure they meet environmental screening criteria. This could help to explain the reluctance these departments have had in establishing a formal screening process. The variety of projects and proponents makes a systematic screening process more difficult to implement. MOT and DPW are able to forecast projects and thus have plenty of opportunity to include environmental screening along with other considerations.

3. Screening must be based on adequate information.

The following points were identified under criterion 3:

- a) None of the departments studied have the in-house expertise to handle all environmental questions.
- b) Alternative sites were considered for two of the eight projects. Alternative solutions through other technologies were not considered at the screening stage (except Annapolis which is an alternative technology).
- c) All of the departments refer some of the projects they review to other government departments at the screening stage. For example, MOT refers all IEE's to the RSCC for comments.
- d) The public was consulted in two of the eight projects. The public consultation at McKinley Bay was inadequate because of poor timing and insufficient information being made available prior to the public meetings. Public consultation on the Annapolis project was after the screening review by EMR and indicate public consultation had no effect on possible referral to FEARO. In other words, the decision to build the project had been made, and public consultation came after the fact.
- e) There was not sufficient information available in any of the cases in order to make an informed decision. Reasons for this result were the lack of any documented studies in DPW and MOT, and the need for further studies recommended in EMR and DINA. The lack of public consultation is another potential information gap.

In conclusion, all four departments made some attempt to ensure there was some information in order to make screening decisions. The most commonly used methods were to use in-house experts to assess whether further

studies were required, and to refer those projects felt to be of some possible concern to outside experts, usually Environment Canada.

In most cases the advice of the outside experts was followed. The only clear example of outside advice not being followed was with DIAND. The view of DIAND was that the potential environmental impacts were not considered significant. This is a clear contradiction of the concerns expressed by the two advisory committees recommending the McKinley Bay dredging proposal be referred to the formal assessment phase of EARP. If the advisory committees are DINA's screening process, then this example clearly indicates that it is not operating in an optimal fashion.

Generally, all departments attempt to obtain sufficient biophysical information in order to make an informed decision. The primary method of obtaining this information was through DOE. There was no equivalent referral to determine social and economic costs and benefits of the projects.

4. Is the process effective?

The results of the case studies indicate that screening processes implemented by the four government departments operate in a less than optimal fashion. The screening procedures in EMR, MOT and DPW were found to be partially effective in their implementation. The main limitations to effective screening are:

- a) insufficient representation of interests;
- b) lack of a rigorous and systematic process with no evaluation;
- c) inadequate social and economic information on the project's possible impacts.

The DINA case study indicates a totally inadequate screening process. The actions of DINA officials regarding McKinley Bay indicate the use

of advisory committees as a screening mechanism is ineffective as presently constituted except in recommending conditions for permits.

Overall, the findings of this examination of the screening process suggest EARP is not being implemented effectively. The application of the process varies considerably between the departments which reflects the lack of any firm guidelines or standards for screening required by FEARO.

The effectiveness of the process is directly related to the degree of commitment by senior departmental officials. This was most clearly demonstrated in DIAND and DPW through the lack of a formal documented process; and in EMR with its recent moves to establish and upgrade environmental concerns in project and program planning.

DOE's lack of a clearly defined role in EARP is also a deficiency. The department does play an important role as advisor to other government agencies. They do not have any systematic method of ensuring that all projects are screened effectively, because referral procedures are voluntary.

Finally, the reluctance of some departments to provide information and the lack of documentation does not speak well for an environmental process that is intended to be of benefit to the Canadian public. It is difficult to assess whether Canadian taxpayers are getting their money's worth, when there is insufficient information to draw conclusions from.

V. Recommendations for the Effective Implementation of an Optimal Screening Process:

The following recommendations are principally based on the analysis and conclusions of the previous chapters.

1. None of the departments reviewed provided adequate opportunity for representation of interests. In order for there to be adequate opportunity for representation of interests the individual departments and FEARO should implement the following:
 - a) The public and other government agencies (at all levels) should have an opportunity to participate in the formulation of departmental screening procedures including the derivation of decision criteria for assessment.
 - b) There should be provision for representation of interests early in the planning process. This could be accomplished by the following means:
 - i) All projects which are identified in pre-screening as having major impacts by specific criteria should be referred as early as possible to other government agencies and the public in order to help identify potential concerns and to assist in a coordinated effort of identifying baseline data requirements for further studies. This would assist the initiator, environmental agencies and possible intervenors to identify their concerns early in the process.
 - ii) Descriptions of projects costing more than \$1 million that do not require a formal EARP hearing should be referred to FEARO, DOE, and a provincial environment agency if applicable. The project description should

also be posted in federal government buildings and public libraries in order to obtain public comment.

The project description should include a list of possible environmental consequences, and project justification. If there does not appear to be any concerns identified by these interests within a reasonable period (e.g. 30 days), construction may commence.

- iii) All projects greater than \$50,000 but less than \$1 million⁹ should be published in a register that is readily available to all potentially affected interests. The project description in the register should include project justification.

2. The screening procedures in most instances are not systematic or rigorous in their application. In order to formalized screening, the following should occur:

- a) Initiating departments should establish (in consultation with possible affected interests) specific screening criteria that would categorize projects into those requiring:
 - i) no further assessment, i.e., exclusions;
 - ii) advanced screening including preparation of an IEE; and
 - iii) formal environmental assessments requiring referral referral to FEARO.

These criteria would be applied in a systematic manner to all projects.

- b) FEARO should give specific definitions for "initiating agency" and provide for co-initiators to reduce confusion

⁹ Admittedly, these figures are somewhat arbitrary. They were arrived at through discussions with the various actors in the screening process, and my own judgment.

which agency is responsible for a project.

- c) The federal government should make provision for approvals and permits to be issued after or concurrently with screening decisions.
 - d) The initiating departments and DOE should establish a monitoring mechanism for projects, programs and activities screened. There should be an annual evaluation of the process to evaluate its success within the departments.
3. Screening decisions were found to be made on the basis of inadequate information. In order for there to be sufficient information to make a reasonably well-informed decision the initiating department's screening activities should include the following:
- a) Because screening decisions are made in-house, it is important for each department or agency to ensure that there is an adequate referral system and to have departmental screening advisors competent in the environmental sciences who can liaise with the referral agencies.
 - b) Screening should include an examination of alternatives which may include alternate routes, solutions to the need for the project, and justification for the choice.
 - c) Routine referrals to the RSCC should be provided for all projects meeting certain criteria (e.g. all projects requiring an IEE or having a certain magnitude of impact).
 - d) The public should have a role in screening. This can be accomplished by allowing opportunity for public comment on projects screened. There could also be appointed members

from the public (or from public interest groups) to screening.

4. In general, for screening to be more effective, some means must be implemented to ensure that departments will implement screening processes in a manner compatible with the goals and aspirations of the Canadian public. In order to accomplish this, the federal cabinet should consider the following recommendations:

- a) At present, screening and EARP are based on a Cabinet Directive having very limited specification of how agencies are to participate. The government must decide that if the environment is to receive the stated priority the policy document must be strengthened. This could be accomplished through a more precise statement of Cabinet policy on EARP or through a legislative mandate.
- b) My analysis has shown that the present screening process is inadequate. One means of implementing a more rigorous screening process is to have a regulatory body enforce the provisions of any new guidelines. FEARO could be given a stronger role as the coordinator of EARP, particularly in the screening phase. At present, FEARP has minimal involvement in screening. This role could be strengthened by having FEARO evaluate departmental screening activities.

5. The role of the Department of Environment needs to be clarified in its relationship with EARP. Cabinet should consider giving DOE a more active role and a higher profile in the federal bureaucracy. The following suggestions would help accomplish this objective:

- a) DOE should be a party to the proposed changes to the screening procedures as previously outlined.
 - b) The Regional Screening and Coordinating Committee (RSCC's) could be strengthened by making referrals mandatory for projects meeting criteria that would be developed in conjunction with initiating agencies.
 - c) The role of DOE north of 60° should be clarified and strengthened. Currently, DINA is both regulator and developer. Although DOE's actions in the McKinley Bay affairs were not exemplary, it can still be argued that DINA's regulatory authority on environmental matters should be transferred to DOE. By giving DOE full management of environmental regulations it may not be as willing to abdicate its responsibility to DINA.
6. An informed public is essential to the political process, and to effective functioning of democracy in our pluralistic society. The federal government (i.e. cabinet) should ensure full and timely access to all relevant documents bearing on proposed government activities. All screening documents should be available for public scrutiny.

It is my view after examining the process in some depth these recommendations are necessary to ensure that environmental assessment of projects take place in a systematic and rigorous manner, taking into account the public interest. The present approach has been found to fall far short of its objectives. EARP is presently the subject of a great deal of criticism but largely at the formal assessment level. Change may occur at this level as a result of public opinion, but because of the low profile screening occupies, any significant change is extremely doubtful. It is therefore impossible to

expect the screening phase of EARP to achieve its goals without public knowledge of the process and involvement in its procedures. A more open process incorporating the recommendations of this thesis will move closer to the goal of achieving an optimal screening process that will embody "Canada's policy on environmental assessment."

All of the above assumes the maintenance of some form of EARP. An alternative to these recommendations is dismantling the process. The results of this study indicate that EARP is weak and ineffective. Rather than attempting to "patch up" a failure, perhaps the federal government should examine other means of achieving more effective management of our resources.

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APPENDIX I

INTERVIEW FORMAT

These questions formed the basis for what was usually a wide range of discussions.

1. Describe the screening process as it is applied in your department.
2. Is the process formal? (For example, are minutes of meetings kept, reports, other recorded information?)
3. Are alternatives (e.g. use of site, location of use, means of accomplishing goal) given equal consideration?
4. What kind of liaison does the department have with other agencies during screening?
5. Is there any public consultation during screening?
6. Are projects that are not considered to have significant impacts monitored?
7. Are there specific guidelines for determining significance? What criteria are used?
8. Does the department maintain information on the numbers of projects screened?

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APPENDIX II

Federal Environmental Assessment Review Office

AREAS OF POTENTIAL ENVIRONMENTAL EFFECTS (APPENDIX 4)					IDENTIFICATION OF ACTIVITIES	
SOCIAL EFFECTS	AESTHETIC EFFECTS	ECOLOGICAL EFFECTS	PHYSICAL-CHEMICAL EFFECTS			
	LAND		SPECIES AND POPULATIONS	WATER		
	ATMOSPHERE		HABITATS AND COMMUNITIES	NOISE		
	WATER			LAND		
	FLORA AND FAUNA			ATMOSPHERE		
	MAN-MADE OBJECTS					
	COMPOSITIONS					

APPENDIX IV

Energy, Mines and Resources

OFFICE OF ENVIRONMENTAL AFFAIRS ENVIRONMENTAL SCREENING STATEMENTANNAPOLIS STRAFLow TIDAL POWER DEMONSTRATION

DOCUMENTATION: "Annapolis Tidal Power Project Environmental Assessment"
by Martec Inc. for Nova Scotia Tidal Power Corporation

Received by NSTPC January 14, 1980

Received by EMR OEA January 15, 1980.

GUIDELINES: Guidelines prepared by Nova Scotia Ministry of Environment
in collaboration with Federal Department of Environment
and others.

MAIN ENVIRONMENTAL CONCERNS

1) Increase in water level and salinity in basin behind existing barrage.

- potentially affects 83 hectares of present pasture and crop land (> 3M a.m.s.l), half of which belong to one farmer. Value at 3 head/acre at \$1,500/head/year = \$927,000/year for total area threatened.
Potentially significant but can be resolved at a cost to Tidal Power Corp. and no or little loss of agricultural land.
- affects striped bass spawning area (4 of 9 km of present spawning bed) but eggs float downstream anyway where water exchange will be improved over present conditions, to contribute to larvae survival.
Not potentially significant.
- potential for increased rate of erosion. Already a serious problem. Needs review by coastal geomorphologist. Perhaps control exists in nature itself - boulder lags develop, etc.
Not potentially any more significant than at present.

2) Increase in suspended sediment during construction

- impact on benthic fauna. Relative to severe dislocation that must have taken place in 1960 when the barrage was constructed, likely to be insignificant. Fauna have demonstrated ability to recuperate and re-establish themselves. Also, more nutrients available could be net positive impact.
Not significant impact.

3) Increase in water velocities in fish passage and decrease in available time for passage plus confusion offered by turbine sluice.

- likely to further reduce the amount of anadromous fish able to get past barrage.
Not a significant fishery although important local sport fishery and tourist attraction.
Possible fish passage enhancement?

4) Social-economic impact during construction

- possibility of three major (for Annapolis County) projects at same time: Tidal Project, Highway 101 construction and the Heritage Development. This could "overheat" the local economy straining certain services and available facilities.

High potential for significant impact can be avoided by effective planning as proposed in Environmental Assessment p. 4.13.

Initial Screening Statement

An estuary is one of the most physical, chemical and therefore biologically complicated environments in which to place a civil works. Hydroelectric projects installed on rivers many miles upstream from estuaries are known to cause significant changes in estuarine dynamics and biology. However, the estuary's diversity and fecundity is also its strength in adapting to changes.

Hydro dams have been built on the headwaters to the Annapolis basin, but clearly the greatest environmental insult to any estuary would be the construction of a barrage across it. This was done at Annapolis in 1960 with environmental and socio-economic negatives (e.g. salmon fishery and peach orchards) but with socio-economic benefits as (farming, recreational ice-fishing, etc.). As to whether the negatives or positives were greater only the local people can tell, and even then disagreement would likely remain.

In reviewing the Draft Environmental Assessment, one issue emerges above all the others and that is the possible incursion of water more saline than present to potentially affect the productivity of farmland. Yet this can be resolved by wiers and closures and the proponent is willing to consider this. Ironically, the agricultural sector is presently the largest source of coliform pollution to the water. The impact on fish from the Tidal Power Project is likely to be far less than has already been experienced from the barrage, in fact by more up-to-date management practices, the fishery, for sport or otherwise, could likely be enhanced.

Of possible concern is the proposal, albeit logical, to raise the water level as an early test by opening the existing sluice gates to approximate the eventual operating level at 2.29 meters. Without close monitoring and the carefully planned cooperation and collaboration with the farmers and their water management committee, this could lead to confusion and misunderstandings.

Based on this initial review of the Environmental Assessment, no reason is apparent why this project should not proceed subject to:

- a) assurances that the Tidal Power Corp. will incorporate reasonable measures to limit the loss of presently productive agricultural land including losses due to potential increased bank erosion;
- b) undertake in concert with local and provincial authorities to plan construction to minimize the strain on the local socio-economic infrastructure;

MEMORANDUM

NOTE DE SERVICE

Mr. A. Scott,
EPS

Office of Environmental Affairs

SECURITY - CLASSIFICATION - DE SÉCURITÉ
OUR FILE / NOTRE RÉFÉRENCE
YOUR FILE / VOTRE RÉFÉRENCE
DATE 22 June, 1979

SUBJECT
OBJET

Newfoundland-Labrador Power Mini-hydro
Section 2.5 of Canada-Newfoundland Agreement

As a condition of the Canada-Newfoundland Agreement (Clause 2.5, Attachment 1) on conservation and renewable energy projects, Newfoundland and Labrador Hydro (NLH) were requested to prepare and submit to EMR an assessment of the likely environmental effect of any projects contemplated for funding under the Agreement.

The Environmental Policy Department of NLH had an environmental evaluation (Attachment 2) prepared on three alternate sites, and this was submitted to the Newfoundland Department of Consumer Affairs and Environment for review. The latter establishes interagency, inter-governmental review committees for projects that could have environmental effects. (A mini-hydro project of less than 2 MW would not, according to the Department of Consumer Affairs and Environment, normally require such a review). The process here was slightly irregular in that, to meet a newly established, although not yet promulgated internal screening process in EMR, I had to go back to the Regional Director General of DOE to seek his 'official' comments on something that had already been screened by members of a regional screening network which he coordinates. The delay was in getting a departmental opinion from DOE. Had I received the document directly from NLH at the same time that it was sent to the Newfoundland Department of Consumer Affairs and Environment, I could have "asked the question" earlier. On future projects under this Agreement, perhaps NLH might wish to speed up this rather bureaucratically inertia-ridden process by sending, as early as possible, their project plans, proposals, etc. to EMR.

Concerning the Marble Brook site, I have the following comments, based partly on comments from DOE, Fisheries and Provincial Environmental agencies.

Project Specific Concerns

While a mini-hydro project would appear, by virtue of its scale, to have only minor environmental impact, there normally are concerns for fish passage, flooding, and water use conflicts. Marble Brook, which was selected by NLH in their site selection process in which environment was a principal factor, was suspected by federal Fisheries officers of having salmon and brook trout. Federal Fisheries requested that a biological survey be conducted (Attachment 3). Newfoundland and Labrador Hydro biologists did a study utilizing standard procedures and found no salmon and only a few brook trout. Moreover, it is the opinion of these

Example of Environmental Screening in EMR -
Questions, problems and gaps

Project To contribute funds for Mini-hydro in Newfoundland

Proponent Newfoundland and Labrador Hydro

Initiator Energy, Mines and Resources,
Energy Policy Sector
Electrical, Coal, Uranium and Nuclear Energy Branch
Electrical Group
Contact officer: E.M. Warnes

Under Newfoundland-Canada Agreement on Renewable Energy and Energy Conservation Technology (September, 1978), consistent with EMR's responsibility to do or have done an environmental assessment of projects we fund, EMR insisted on the following clause (2.5) in the Agreement:

"The Corporation, before proceeding with the Project beyond the Evaluation, must prepare and submit to the Department of Energy, Mines and Resources ("Canada") an assessment of the likely environmental effect in a form and content¹ acceptable² to the said Department."

- Q. 1. *Who decides on form and content? What format is used? Did we use the ,matrix, in the Guide for Environmental Screening?*
- Q. 2. *Who decides whether it is acceptable? On what basis, which standards, does he make that decision?*

Newfoundland and Labrador Hydro prepared a "Mini Environmental Impact Assessment" of the Mini-hydro Project. They referred it to the Newfoundland Department of Consumer Affairs and Environment. This Department, as they do for all projects in Newfoundland, established a review committee under the Chairmanship of David Barnes, Director of Environmental Assessments. The committee has representation from various provincial and federal departments with expertise or interest in the environment. Each provided his comments and the total package was sent to EMR as fulfillment of Clause 2.5 in the Agreement.

The Electrical Group then sent the package to the ODEA for review and advice regarding the acceptability of the assessment in order to give Newfoundland Hydro clearance.

Noting that the same experts have reviewed it as would have if I had sent it to DOE's Regional Screening and Coordinating Committee, noting that alternative sites for a mini-hydro were examined and the site selected was done so, partly on environmental grounds, noting further that mitigative measures will be instituted to look after fish passage, etc., that environmental protection clauses have been prepared for inclusion in tender and contract specifications and/or instructions to managers, the ODEA is prepared to advise the electrical group that the impact assessment is acceptable without further reference to DOE or DFO.

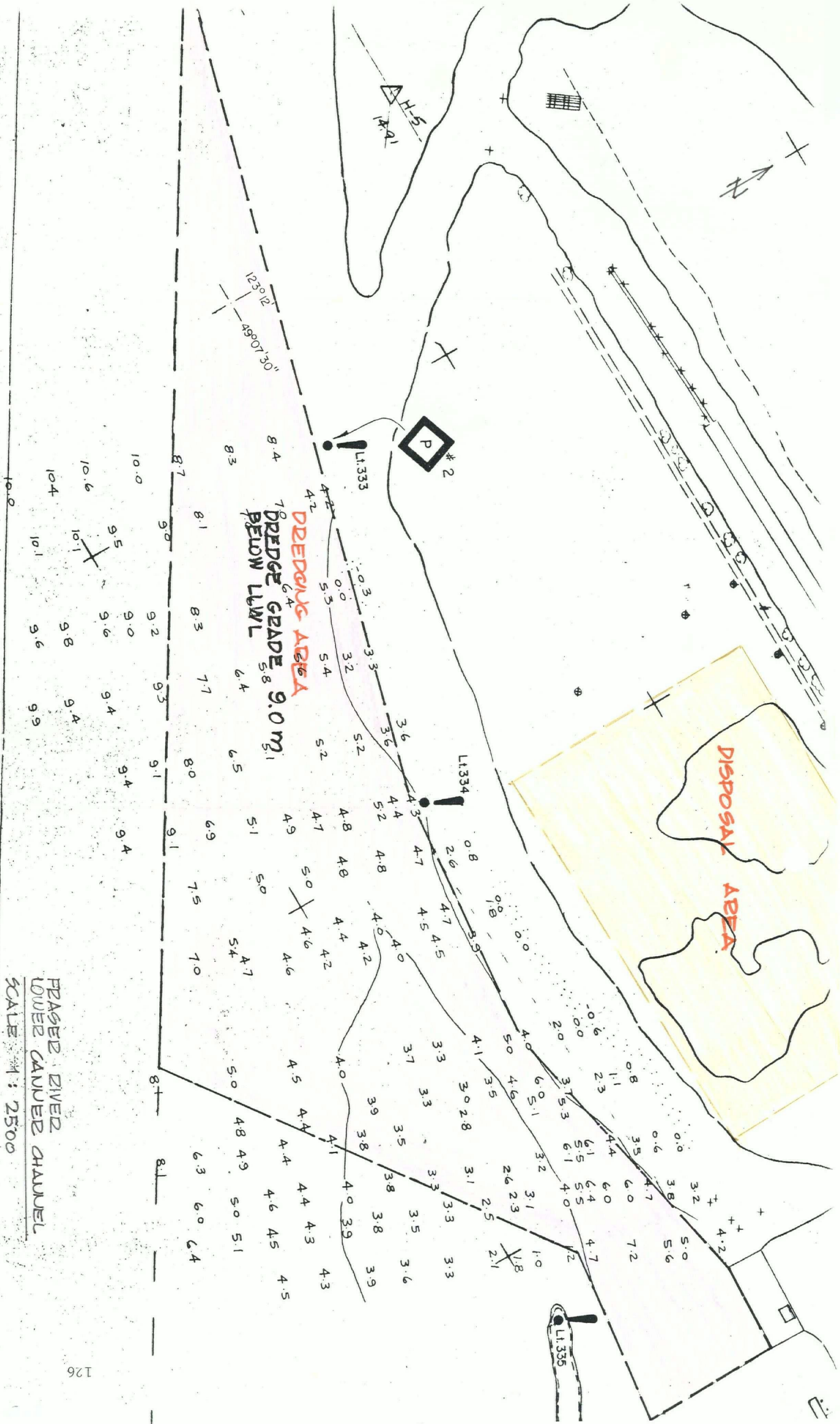
- 2 -

- Q.3. *The problem here is that DOE and/or DFO may feel that they have not had an adequate opportunity to review the proposal; they will most certainly declare that only they, not us, can give environmental clearance at the federal level.*

4 June, 1979

APPENDIX v

Department of Public Works



PRASEE DIVED
LOWER CANNED CHANNEL
SCALE 1 : 2500
SUEVEY DATE 18.10.FEB.1980 (FE 6-23)

PUBLIC WORKS CANADA
ATLANTIC REGION

127
For Marine Projects

ENVIRONMENTAL ASSESSMENT AND REVIEW PROCESS

PRE-SCREENING REPORT

PROJECT _____

LOCATION _____

DATE _____

Format - November 1979

PUBLIC WORKS CANADA
ATLANTIC REGION

ENVIRONMENTAL PRE-SCREENING REPORT
MARINE PROJECTS

1.1 PROJECT

Title _____
Location _____
Estimated Cost _____
Project Number (if available) _____
Project Manager _____

1.2 OGD FUNDED PROJECT

Check all Applicable Boxes

1.2.1 SMALL CRAFT HARBOUR BRANCH - FOC

Harbour Development Program
Tourist Wharf Program
Marina Policy

1.2.2 TRANSPORT CANADA

Ferry Terminal
Common User Facility
Coast Guard Wharf

1.2.3 WATERFRONT DEVELOPMENT

Part of larger Federal/Provincial/Municipal Planning

--

1.2.4 OTHER (Specify)

--

1.3 PWC FUNDED PROJECT

Check all Applicable Boxes

- 1 Dredging
- 2 Shore Protection
- 3 Transport Canada Structures
- 4 _____

2. LEGISLATION This Project will Comply with2.1 FEDERAL

Check all Applicable Boxes

- Ocean Dumping Control Act (permit required)
- Fisheries Act
- Navigable Waters Protection Act
- _____

2.2 PROVINCIAL/MUNICIPAL

--

3. PROJECT DESCRIPTION (Attached Site Plan)

4. PROJECT ACTIVITIES4.1 STRUCTURES TO BE CONSTRUCTED

TABLE A

Structure	Type	New Structures or Extension
(1)	(2)	(3)
Revetment	_____	_____
Sea Wall	_____	_____
Groyne	_____	_____
Dyke	_____	_____
Causeway	_____	_____
Training Wall	_____	_____
Breakwater - Shore connected	_____	_____
Breakwater - Offshore	_____	_____
Breakwater - Wharf	_____	_____
Marginal Wharf	_____	_____
Wharf or Jetty	_____	_____
"T" - Headed Wharf	_____	_____
"L" - Headed Wharf	_____	_____
_____	_____	_____
_____	_____	_____

Note:

For each proposed structure indicate "Type" using applicable numbers from Table B.

In column 3, use "N" for new structure of "E" for extension.

TABLE B

Number	Type of Structures
1	Rock Mound
2	Concrete blocks or slabs
3	Concrete retaining walls
4	Steel Sheet Piling
5	Soldier piles and concrete panels
6	Timber Cribwork
7	Concrete caissons
8	Block and Span structure
9	Open pilework
10	Pilework with facewall(s)
11	Gabions
12	

4.2 DREDGING

Check All Applicable Boxes

Channel in open water
Channel in sheltered water
Harbour Basin

Quantity of soil _____ m³
Quantity of rock _____ m³
Type of soil(s) _____

Disposal at Sea with ODCA permit

Permit No. _____

--

Disposal on Land
On beach or shore
Behind beach or shore
Behind dykes or retaining structures
Open area - no containment

Type of dredging proposed
Floating plant
From Wharf

Cutter suction with pipeline
dipper
clam
backhoe
dredge type will not be specified in the contract

4.3 EARTHWORK (other than dredging spoil)

Check All Applicable Boxes

Fill will be placed in water

Fill will be placed on beach

Rockfill

Earthfill

Confined during dumping

Not confined during dumping

Confined after construction

Not confined after construction

Landfill or excavations within 100 metres
of backshore or fish waterways

Gravel, Crushed Rock or Sandy soils

Silt or Silty Clay soils

Excavations into coastal cliffs

Excavations into sand dunes

Drilling and blasting

--

5.

ENVIRONMENTAL CRITERIA

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5.1 SOCIAL-ECONOMIC IMPACT ANALYSIS

The client department is responsible for the social - economic impact assessment. A copy of their assessment should be attached to this pre-screening report.

The Project Manager should check with the Senior Property Development Officer (426-8081) to determine if this project has been reviewed under the Federal Land Management policy. Enquire whether or not the sub-mission or committee report indicated and negative impacts or development restrictions. If there are any, obtain the relevant correspondence and attach.

After reviewing the client's social - economic impact assessment, the Project Manager should address the following concerns.

- 5.1.1 Will there be significant social or economic effects on a community or region?

	Community	Region
Significant Positive Effect	<input type="checkbox"/>	<input type="checkbox"/>
Minor Positive Effect	<input type="checkbox"/>	<input type="checkbox"/>
Significant Negative Effect	<input type="checkbox"/>	<input type="checkbox"/>
Minor Negative Effect	<input type="checkbox"/>	<input type="checkbox"/>

Remarks

- 5.1.2 Any "third party" cost associated with the undertaking?
This would include such items as increased shore erosion, changes in drainage, loss of water lots, etc.
List any impacts below.

- 5.1.3 Any involvement with adjacent persons or property?
List any impacts, duration (short or long term) and mitigation measures.

- 5.1.4 Any possibility that the proposed undertaking will arouse public concern or controversy?
Outline the problem and the OGD and PWC roles to mitigate the problem.

5.2 PHYSICAL IMPACT ANALYSIS5.2.1 SHORELINE5.2.1.1 Effects of existing structures on adjacent shoreline and/or beaches within the harbour

Accretion Areas

Significant

☐
☐

Minor

☐
☐

Erosion Areas

Significant

Minor

If serious or significant erosion areas are occurring, show areas of accretion and erosion on a site plan or airphoto and attach recommendations for further action.

Special emphasis should be placed on the shoreline adjacent to and estuary mouth protected by entrance piers. Significant erosion and accretion may be taking place, but if these structures were not present, the estuary mouth might migrate. If erosion is a problem, does ground reconnaissance or airphoto analysis indicate past entrance migrations?

Yes

☐

No

☐
5.2.1.2 Anticipated effect of new structures or extensions on adjacent shoreline and /or beaches within the harbour.

No change from existing conditions

Definite Changes will occur

Changes may occur

☐
☐
☐

Accretion Areas

Significant

☐
☐

Minor

☐
☐

Erosion Areas

Significant

Minor

Will special shore protection be required?

No

Possibly in the future

Yes

☐
☐
☐

If special shore protection is required or could possibly be required in the future, show location on the site plan and give explanation below.

- 5.2.1.3 Anticipated effects of new seawalls, revetments, or groynes on adjacent areas up or down the coast.

Accelerated Erosion

Significant ☐

Minor ☐

If the erosion rate of adjacent shoreline may be significantly increased, outline any short or long term mitigating measures that may be required.

- 5.2.1.4 Anticipated effects of deepening of entrance channels on shoreline within the harbour or along the estuary.

Accelerated Erosion

Significant ☐

Minor ☐

Outline any mitigating measures that may be necessary to rectify this problem.

5.2.2 WETLANDS

- 5.2.2.1 Effects of existing facilities and their use on nearby wetlands

Reduced by Landfill
Drainage Alteration
Wildlife Usage
Pollution

Significant ☐
Significant ☐
Significant ☐
Significant ☐
Significant ☐

Minor ☐
Minor ☐
Minor ☐
Minor ☐
Minor ☐

5.2.2.2 Anticipated effects of new structures and their use on nearby wetlands

136

No change from existing conditions ☐

Further Landfill
Drainage Alteration
Wildlife Usage
Pollution

Significant
Significant
Significant
Significant
Significant

Minor
Minor
Minor
Minor
Minor

Note: If wetlands are to be filled, make sure the Biological Impact Analysis has covered the implications.

5.2.3 LAND DISPOSAL OF DREDGED MATERIAL

Note: Disposal site to be cleared with Provincial Department of the Environment

Check Applicable Box

Disposal sites precleared by the Project Manager ☐

Clearances left to the Contractor subject to approval of the Project Manager ☐

If permission denied for ocean dumping permit, give reasons and submit copy of laboratory analyses.

Outline and special precautions required to truck the spoil (i.e., street clean up, sealed containers, etc).

5.3 BIOLOGICAL IMPACT ANALYSIS

Was land recently purchased or waterlot rights obtained for this project or associated activities?

Yes ☐

No ☐

5.3.1 If yes, check with the Senior Property Development Officer, or the Regional Environmental Coordinator. The Federal Land Management Process normally results in experts from Environment Canada and Fisheries and Oceans Canada assessing the potential effects of the project on fish, shellfish and animal life. These reports should be reviewed by the Project Manager and attached to this Pre-Screening Report. Any design or construction restrictions imposed by these agencies that will be included in this project should be outlined below.

Design & Construction Restrictions

- 5.3.2 If no, check with the OGD to determine their level of involvement with Environment Canada and Fisheries and Oceans Canada. Fisheries and Oceans Canada will be preparing a biological impact assessment for all their projects. Attach copies of all relevant communications and list below any design or construction restrictions that will be included in the project.

Design or Construction Restrictions.

Check the box below if, (1) the OGD has had limited involvement with Environment Canada and Fisheries and Oceans Canada and (2) permits under the Ocean Dumping Control Act or Navigable Waters Protection Act are not required. The Regional Environmental Co-ordinator will then forward this Pre-Screening Report to Environment Canada for comments on potential biological impacts.

☐

6.

RECOMMENDATIONS

List any measures required to mitigate identified impacts not covered in 5.3. These would include any shoreline or erosion control measures.

7.

SUMMARY

- 7.1 If no further environmental assessment appears necessary because all potential impacts are understood and mitigating measures available - check the box below. Submit three copies of this report to the Regional Environmental Coordinator. One of these copies will be reviewed and sent to the client departments Environmental Co-ordinator for their review.

☐

- 7.2 If there are significant unresolved impacts, indicate what further information or studies are required. Refer to "Operational Guidelines to the PWC Environmental Assessment Process" and contact the Regional Environmental Co-ordinator.

Report Reviewed By

Regional Environmental Co-ordinator

Date

Report Prepared By

Date

APPENDIX VI

Ministry of Transport

AK-75-02

FIGURE 1

SAMPLE FORMAT

ENVIRONMENTAL CONSIDERATIONS SHEET

Project No.

Amendment No.

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 project require Initial Environmental Evaluation (IEE)?

☐ Yes - Attach IEE and proceed to Part B
☐ No - (See 2 below)
2. If no IEE is required:
 - a) Have costs for studies to develop mitigational measures been included in Project Cost Summary?

☐ Yes
☐ Not Required
 - b) Have costs for any public consultation process been included in Project Cost Summary?

☐ Yes
☐ Not Required

PART B - INITIAL ENVIRONMENTAL EVALUATION

1. Does project require a DFE Assessment Panel?

☐ Yes - See 2 below and proceed to Part C
☐ No - (See 3 below)
2. If Panel is required, has PAD^{been} prepared for funding the environmental studies and public consultation process in preparing the Environmental Impact Statement?

☐ Yes
☐ Not applicable
3. If Panel is not required:
 - a) Have costs for studies to develop mitigational measures been included in Project Cost Summary?

☐ Yes
☐ Not Required
 - b) Have costs for any public consultation process been included in Project Cost Summary?

☐ Yes
☐ Not Required

AK-75-02

FIGURE 1

SAMPLE FORMAT

AATA - OTTAWA
K1A 0N8

PRA - VANCOUVER
V6C 1A2

SECURITY CLASSIFICATION - REF. NO.
OUR FILE - N/REFERENCE 5151-P562 (PAOFF)
YOUR FILE - V/REFERENCE
DATE 7 July 1976

SUBJECT
OBJET Initial Environmental Evaluation - Boundary Bay Airport

1. In compliance with the procedures outlined for the "Environmental Assessment and Review Process (EARP)," attached are the following:
 - a) A copy of our submission to the Pacific Region Screening and Co-ordinating Committee (SCC) and
 - b) A copy of the SCC's response
2. For your approval and necessary processing.

W. H. S. Neales
Pacific Regional Administrator
Canadian Air Transportation Administration

Attachments

SUMMARY

The following brief summary of each of the three projects is intended to provide additional information not contained in the Initial Environmental Evaluations.

Campbell River Airport (Municipal)

Campbell River Airport serving the Town of Campbell River and surrounding areas is located on the east coast of Vancouver Island at approximately halfway from the southern tip of the island toward the north. This airport is operated by the Municipality of Campbell River subsidized by Transport Canada.

This project will extend the existing runway an additional 1000 feet to the northwest. There will be some nominal change in ground and surface water run off patterns. The existing flight way will require minimal clearing to eliminate those trees that exceed height limits. The above noted physical changes in land use do not involve the disturbance of a significant habitat for plants, animals, marine and aquatic life. The extension of the flight path will increase the length of the noise envelope slightly but will be within the NEF criteria as it applies to residential areas.

Smithers Airport

This project will extend the existing runway an additional 1000' at the northwest end. It is intended to extend ground and surface run off water along the present design. The drainage system has been designed to divert water normally draining toward Lake Kathlyn to drain into the Bulkley River at some future date. The existing flight way will require some additional clearing in compliance with required standards. The land use changes as noted above will not significantly alter the eco system or general habitat of the adjacent areas. The project will in effect extend the noise envelope slightly but will be within NEF criteria as it applies to residential areas.

APPENDIX VII

Department of Indian and Northern Affairs

Members of the two advisory committees present at the first meeting to discuss the Tuk Harbour - McKinley Bay dredging proposal.

<u>Name</u>	<u>Role</u>	<u>Agency</u>
A. G. Redshaw	Chairman, AWAC	DINA
W. Bryant	Chairman, RODAC	DOE (EPS)
M. Hawkes	Member, AWAC	GNWT
D. Karsiuk	"	DOE (CWS)
S. Raddi	"	COPE
D. Billing	"	GNWT
D. Dowler	Member, RODAC, alternate AWAC	DFO
D. Herlinveaux	" "	DFO
J. Donihee	"	GNWT
W. Eberts	"	DINA
A. Dion	"	MOT
T. Bowyer	Observer	GNWT
N. Cournoyea	"	COPE
R. Fallis	"	DFO
C. Cuddy	"	DINA
P. Lewis	"	DINA
L. Prather		Dome/Canmar
R. Hoos		Dome/Canmar
V. Beaubien	Secretariat RODAC	DOE
N. Vincent	" AWAC	DINA