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Guiding Principles for Issue Scoping in Environmental Assessment under the Canadian Environmental Assessment Act

Environmental Assessment Branch
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NOTE

This document is undergoing distribution to transfer the information to people working in the field of environmental impact assessment. This distribution does not signify publication and if the report is referenced, it should be cited **as** an unpublished report of Environment Canada and FEARO.

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Glossary of Terms Used

Area Wide Studies:

studies undertaken by government agencies in anticipation of future environmental reviews for development projects planned for an area.

Canadian Environmental Assessment Act (the Act):

an Act to establish a federal environmental assessment process, expected to be proclaimed in early 1994. The Act will replace the current federal Environmental Assessment and Review Process (EARP) Guidelines Order.

Canadian Environmental Assessment Agency (the Agency):

the agency that will administer the Act and will replace FEARO.

Class Screening Report:

presents the accumulated knowledge about the environmental effects of a given class or type of project and identifies the measures known to mitigate those environmental effects; applies to classes of projects that are routine and repetitive and for which a sound knowledge of effects and best mitigative practices exists; a Class Screening Report provides the RA with generic guidance when assessing a project within the class, however, he still must take into account important site-specific effects.

Cumulative Environmental Effects:

environmental effects resulting from the incremental contributions of the project under review (assessing interactions between the environmental effects of the project) in combination with the effects of other past, present and reasonably foreseeable future projects.

Environmental Impact Statement (EIS):

a documented assessment of the environmental consequences of a proposed project.

Follow-up Program:

a program for verifying the accuracy of the environmental assessment of a project and determining the effectiveness of mitigation measures.

Indicator Species:

a species whose health is indicative of the health of the overall ecosystem.

Responsible Authority:

a federal authority under the Act that is required to ensure that an environmental assessment of a project is conducted. The term is equivalent to Initiating Department under the EARP.

Scoping:

a consultation exercise conducted to identify important environmental issues (for purposes of conducting an environmental review).

Traditional Ecological Knowledge (TEK):

the knowledge base acquired by indigenous peoples over hundreds of years through direct experience and contact with the environment.

Valued Ecosystem Components (VEC's):

components of an ecosystem likely to be affected by development that have been identified through scoping to be of special value. Environmental assessments should generally focus on these components.

Executive Summary

Issue scoping is a consultation exercise conducted to identify important environmental issues (for purposes of conducting an environmental assessment). Since the purpose of environmental assessments is to assist decision makers, it is crucial to identify issues of importance as early as possible and certainly before irrevocable decisions are made. It would also be useful to prioritize issues so that those of greatest importance receive greatest attention.

This study has two major purposes. The first objective is to develop and explain the principles of scoping practice in environmental assessment as they have been applied historically, and to explore their applicability under the Canadian Environmental Assessment Act (the Act). A secondary purpose is to suggest aspects of scoping practice that are in need of further study. Scoping on an area wide basis, which requires studies to be undertaken over a larger geographical area in anticipation of specific and yet undefined development projects, is also addressed in this report.

The following scoping principles were found to apply universally to scoping for environmental reviews under the Act and to scoping for area wide studies:

- * The review mandate must be both broad to deal with the full range of environmental issues (both biophysical and socioeconomic) and focused to allow a meaningful review;
- * Early and sufficient information must be made available about the project under review;
- * Participants must be identified and involved in the scoping exercise as early as possible;
- * Both public input and scientific and technical input are essential for effective scoping;
- * An open and publicly credible process must be used;

- * There must be real opportunities for participants to present their opinions and exchange views with others on matters of importance. Efforts to rank the issues should be made;
- * Existing information on potential impacts should be used to help in issue identification; and,
- * Scoping is a shared responsibility. All participants, including the proponent, government agencies, the public and the environmental assessment panel (or equivalent), have a role to play in identifying and prioritizing the issues.

In addition to addressing the basic principles of scoping practice, this study identifies aspects of scoping that require further study as a means of improving their effectiveness within federal environmental assessments. Aspects of scoping recommended for further study follow.

Federal environmental assessments, particularly at the panel stage, need to be more focused. Peripheral or secondary issues that do not have the potential to affect the outcome of the review must be eliminated, or at least down-played, as early as possible. At the panel stage, this should occur prior to finalizing the Environmental Impact Statement (EIS) guidelines.

Further work on scoping at the screening and comprehensive study stages under the Act is needed, especially to deal with new requirements and considerations such as cumulative environmental effects, class screening and reporting requirements. The scoping of issues associated with cumulative environmental effects is likely to prove particularly challenging; case studies and practical advice in this regard are being developed.

Vigilance is necessary to maintain terms of reference suitable for good scoping and good public reviews. Questions of how to deal with scoping in joint reviews with provinces, where the proponent is primarily responsible for scoping, may require some investigation.

It was suggested that proponents responsible for scoping require some formal guidance for what is expected of them in their scoping efforts. This is clearly a matter of harmonisation of environmental assessment processes and might be addressed by the Canadian Environmental Assessment Agency (the Agency), perhaps through the Canadian Council of Environment Ministers.

One means of dealing with concerns about scoping practice would be the widespread dissemination of good documentation regarding scoping. The material could include scoping principles (such as the material treated here including such changes as may be required following further study and discussion), detailed case studies, or a scoping manual.

Finally, there is a need, in scoping exercises, for better integration of socioeconomic concerns and human values with the biophysical impacts more frequently addressed.

Purpose and Outline of this Report

The dual purpose of this study is to develop and explain the principles of scoping practice in environmental assessment as they have been applied historically, and to explore their applicability under the Canadian Environmental Assessment Act (the Act). A secondary purpose is to suggest aspects of scoping practice that are in need of further study.

Environmental impact assessment (EIA) is an increasingly important tool used in Canada and elsewhere for anticipating and preventing unwanted environmental impacts of development projects and for attempting to achieve sustainable development. It is equally clear that reviews of projects conducted in accordance with environmental assessment processes need to be carried out efficiently. Government and private sector resources allocated to environmental reviews are under increasing scrutiny and it is essential that such reviews be focused on the issues that matter. In the 1990s, it is no longer possible to spend money and time on matters that, while constituting real concerns of some people, cannot reasonably be expected to influence decisions that need to be taken about projects under review. Issue identification, or scoping, as it has been called in the context of environmental impact assessment, is the major tool employed to focus the reviews on the important issues, those issues that will make a difference to the outcome of the reviews.

This report will discuss the history of scoping in Canadian environmental assessment and, in the process of doing so, will identify the important contributions made by scoping. Following this brief historical review, a definition of scoping will be adopted. Between the historical description, which provides the purpose and objectives of scoping, and the definition of scoping used for this paper, many of the basic principles of scoping practice will have been identified. The role of scoping as described under the Act will then be portrayed. This description will address a full range of scoping activities involving the many participants: proponents of projects under review, responsible authorities under the Act, mediators involved in mediation, the public, and environmental assessment panels undertaking public reviews.

This report will elaborate on the concept of “area wide studies”. The importance of these types of studies must not be underestimated. They allow for much more effective and efficient reviews and are likely to play an increasingly important role in future environmental assessments. Accordingly, features of scoping for area wide studies are also addressed in this report.

The Act explicitly identifies the need to consider the cumulative environmental effects of a project on the environment. For this reason, a section addressing scoping for cumulative effects is also included in this report.

Scoping in environmental reviews other than within the federal process will be considered next. Alternative processes, where the primary responsibility for scoping of major environmental reviews lies with the proponent rather than with a federal panel, or where joint reviews with (provincial) jurisdictions require a combination of processes, will very likely involve different approaches to scoping.

The conclusions found within will identify fundamental principles of scoping practice and recommendations for further research. It is believed that all scoping exercises should attempt to follow these principles as closely as possible and that if these principles are followed, effective scoping will result. Following this statement of principles, the report presents descriptions of the current practice of scoping for:

- (1) public reviews at the federal level;
- (2) Alberta environmental reviews (as an example of an environmental review process in which the primary responsibility for scoping lies with the proponent);
and,
- (3) area wide reviews.

While some literature references are found within the text of this report, an annotated bibliography is included for more detail. Appendix 1 contains a brief outline of the methods used to undertake the study.

The History of Scoping in Environmental Impact Assessment

Scoping, essentially the identification of issues to be studied in environmental impact assessment reviews, has always been undertaken; people have always made decisions about what to study. In the early days of impact assessment processes (the mid 1970s in Canada), the decisions were made by environmental assessment practitioners without a great deal of experience in, or understanding of, the process. Often these practitioners were scientists who believed that environmental impact assessment involved simply studying the environment in the area directly surrounding where development projects were proposed. A slogan typical of that stage of environmental impact assessment was: “if it moves count it; if it doesn’t move, map it”. As Kennedy and Ross (1992) note, early environmental assessments “attempted to address all of the potential impacts on [a great many] resources”. They also observe that

... as little effort was directed towards the identification of key issues, the [environmental impact statements were] weakly focused, voluminous, technically oriented, and poorly organised for use by either regulatory bodies or the public.

Another closely related problem is the common view expressed that environmental assessments must have baseline data and that the environmental impact statement must include a description of the existing environment. Both these claims are partly true, but they must be fully understood or they will result in a considerable waste of resources. The following explanation is provided by Beanlands (1987):

Environmental impact assessments are often conducted under severe time restrictions and . . . there is a tendency to give too much emphasis to baseline studies early in the assessment process. The result is that there is often a great deal of information made available on the environmental setting for a particular project but it may be irrelevant to the resolution of certain critical questions raised at later stages in the [environmental review].

[Such baseline studies] . . . are undertaken without clearly defined objectives. Seldom is there an understanding of why the data are being collected or to what problem they will be applied. In order to cover all potential requirements, there is an effort made to gather some information on all aspects of the environment. This inevitably leads to superficial surveys providing only reconnaissance level information. In the end much of the investment in time and resources is wasted.

Perhaps the most glaring inadequacy of most baseline studies is that they do not reflect the ultimate needs of the decision makers involved in project planning. During the planning for development projects, there are key decision points for which important environmental and socioeconomic data should be available from baseline studies. If these critical stages and the related information needs are not clearly defined at the beginning of an [environmental assessment], it is unlikely that the prime needs of decision makers will be met.

While in Canada we have generally progressed far beyond this primitive stage of environmental impact assessment (EIA), there are many other countries that, even today, still find EA undertaken in this unproductive fashion because of a lack of EA practitioners with the necessary expertise and understanding.

In the early 1980s, a major study of Canadian environmental assessment practises (Beanlands and Duinker, 1983) stressed the importance of scoping, including both social scoping (provision of public opinion and value judgements) and ecological scoping (the translation of the concern for valued ecosystem components (VEC's), into appropriate ecologically framed studies). The former was identified as primarily a public consultation exercise while the latter was primarily a scientific consultation. Today, the importance of both of these aspects of scoping is as great as ever, but the distinction between public and technical specialist input is increasingly blurred. First, it is understood that scientists have values themselves and their suggestions for undertaking studies can be personally motivated.'

¹ A rather extreme example of this situation was described several years ago by a provincial environmental assessment administrator. As part of the scoping exercise, he had a formal request from a government wildlife scientist that a wildlife study be required as part of the environmental review of a project. The wildlife study had been planned, but no government budget was available to **undertake** it. In the opinion of the environmental assessment administrator, inclusion of such a study in the **assessment** was not justified. He had, however, to make a difficult decision: to choose between **distorting the environmental assessment process** somewhat by including nonessential material and offending a fellow public servant whose future contributions to environmental reviews would be essential. It should be **pointed** out that the wildlife

Second, and more significant, is the increasing recognition and respect for “traditional ecological knowledge”, or TEK. The following excerpt from A Guide to the Canadian Environmental Assessment Act explains the concept and indicates the value of scientific expertise from non-scientists:

Traditional ecological knowledge is the knowledge base acquired by indigenous peoples over hundreds of years through direct experience and contact with the environment. It takes several forms: an intimate and detailed knowledge of the environment, including plants, animals and natural phenomena; the development and use of appropriate technologies for hunting, fishing, agriculture and forestry; and a holistic or ‘world view’, which parallels the scientific discipline of ecology.

In Canada, EIA practitioners came to the conclusion that EIA was not simply the undertaking of environmental studies, but rather a means of ensuring

... that the environmental effects of projects receive careful consideration before responsible authorities take actions in connection with them and to encourage responsible authorities to take actions that promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy. (Section 4 (a and b) of the Canadian Environmental Assessment Act)²

In effect, one crucial purpose of EIA is to ensure that the environment receives consideration in the same fashion as economics and technical matters in order to promote a sustainable Canadian economy.

Put another way, the purpose of EIA is basically to anticipate and prevent environmental problems associated with development projects. Reacting to such problems and subsequently trying to cure them (the react and cure strategy), has been found consistently to be too expensive compared to the anticipate and prevent strategy based on the application of EA practises. Anticipating and preventing such impacts is less expensive financially, socially, and environmentally. It is essential that managers in the 1990s employ the more prudent and

scientist’s behaviour is not believed to be unethical. In fact, it could be argued that the scientist is believed to have such a high personal regard for the value of the wildlife resource that he or she believed such studies would be justified whenever a project was being undertaken in the vicinity of the resource.

² According to the Act, the other purpose of environmental assessment in Canada is to ensure that projects in Canada do not cause significant adverse environmental effects outside the jurisdictions in which they are to be carried out.

cost effective of these two approaches within the EA forum. Critics have questioned the alternative approach by asking simply, “if you can’t afford to do a certain development project right the first time, how can you afford to do it over again and again?”

The transition from undertaking environmental studies that lack focus to attempting to address questions about the environmental effects of a proposed project took place by the early 1980s in Canada. Consequently, scoping took on a different character. Since the purpose of the environmental review is to assist decision makers, it is crucial to focus on those issues that are likely to influence the outcome of the decision making process. Only by doing so could the decision makers benefit from the exercise. By this time in the history of Canadian EA applications, practitioners had also become much better at predicting and assessing impacts. Moreover, recognising the significance of public involvement in EA³, the process of identifying issues (scoping) had developed into a consultation with both scientists and technical specialists on the one hand, and the public on the other.

By the early to mid 1980s in Canada, EA practitioners had become quite good at determining the issues raised by participants in environmental reviews (the proponent, the government agencies, the scientific and technical specialists, and the public). However, it was also becoming clear that these environmental reviews tended to take a “shotgun approach” to dealing with these issues. The environmental impact statements (EIS’s) were encyclopedic, addressing all concerns raised by anyone. The problem with this approach is that the environmental review was not focused and resources (time, money and human resources) were wasted dealing with issues that would not affect the decisions taken about the project being reviewed. It quickly became clear that environmental reviews needed to become more efficient; that is, they needed to be focused on issues that had the potential to influence the decisions to be taken.

³ One of the purposes of the Act is “to ensure that there be an opportunity for public participation in the **environmental assessment process**” (Section 4 (d)).

Today, scoping in environmental assessment goes beyond determining and prioritizing the issues to be addressed, and now includes the elimination of concerns that do not have the potential to affect decisions about the activity being reviewed.

A schematic of the Canadian development of impact scoping expertise over time is shown in Figure 1.

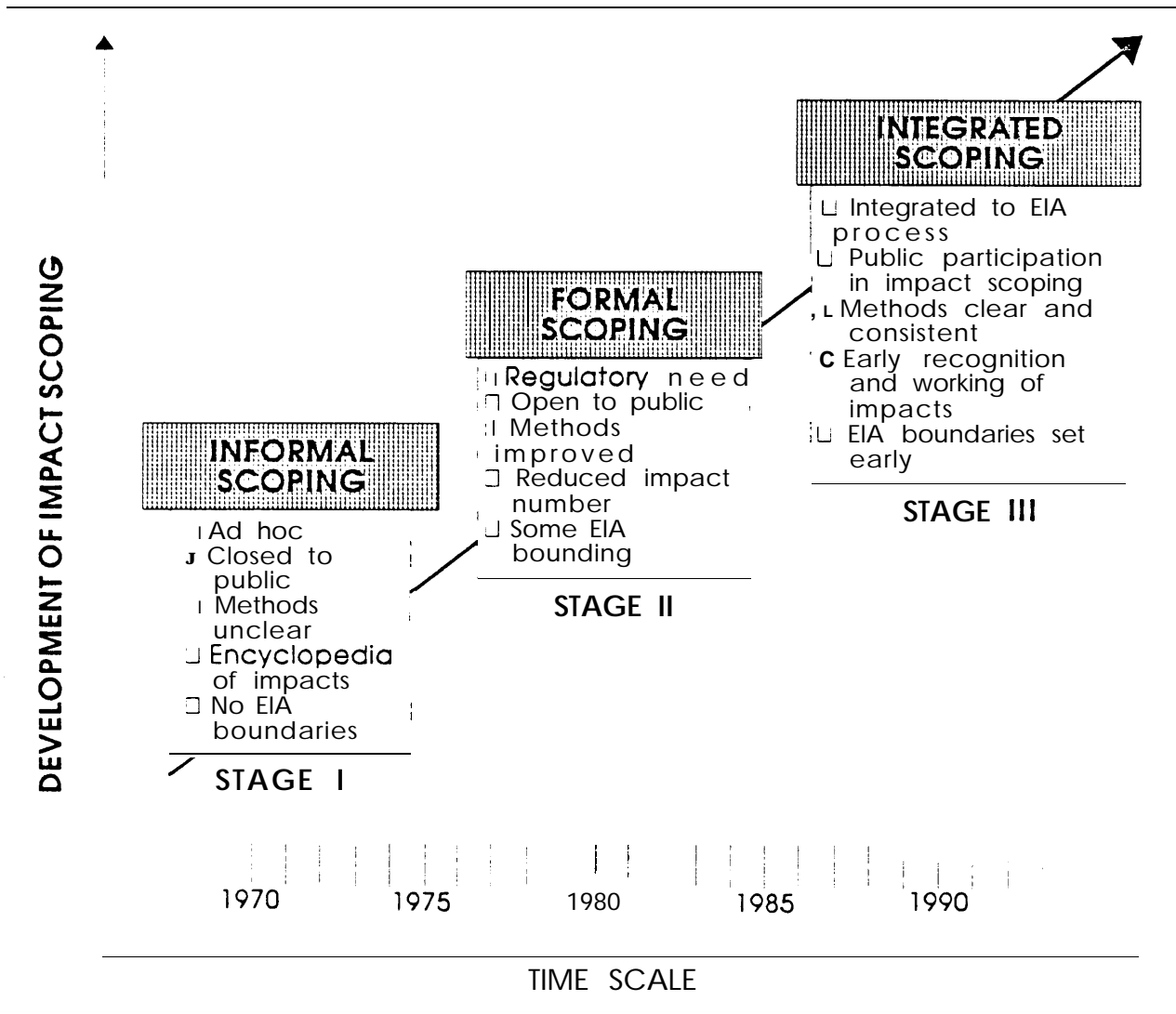


Figure 1. Development of impact scoping in Canada (courtesy of Dr. Alan Kennedy, Imperial Oil Resources).

Definitions of Scoping

Literature cites a variety of definitions for the term scoping. Some definitions involve only the identification of important issues and a determination of their priority for the review. An example of such a definition is “a process for identifying and assigning priority to the issues associated with a proposed action” (Ross, 1987). Other definitions explicitly include the use to which the results of scoping will be put, namely preparing the EIS. An example of such a definition is

... an EIA activity in which a process is followed to identify the attributes of the environment for- which there is concern (public and scientific) and a plan is provided that enables the [EIS] to be focused on these attributes. (Kennedy and Ross, 1992)

For purposes of this report, the focus will be on issue identification and the consultation necessary to identify issues. Accordingly, the working definition will be that issue scoping is a consultation exercise conducted to identify important environmental issues (for purposes of conducting an environmental review).⁴

Scoping: The Canadian Federal Experience

The Act applies to projects about which a responsible authority must make a decision. In order to meet the requirements of the Act, the responsible authority must consider the environmental effects of the project. The Act is designed to provide the responsible authority with an opportunity to streamline the way in which the Act is applied. The “Law List” takes the guess work out of deciding whether or not a project requires an environmental assessment. The “Inclusion List” defines what physical activities fall within the definition of a project. If the project is on the list, an EA is necessary. On the other hand, the “Exclusion List” specifies

⁴ It should be noted that the working **definition** of scoping in the guide to the Canadian Environmental Assessment Act is somewhat different from the one used here. That manual **identifies** four aspects of scoping: determining the scope of the **environmental assessment**, **determining** the scope of the factors to be considered, determining the interested **parties involved** in the project and their concerns, and **determining** the appropriate level of effort and analysis for a screening or comprehensive study.

projects which are identified as having insignificant environmental effects. For those projects, no assessment is necessary and the responsible authority will proceed directly to a project decision. There will also be a “comprehensive study list” that will identify projects likely to have significant adverse environmental effects. These projects are likely to warrant an assessment more thorough than a screening. Projects not on either the exclusion list or the comprehensive study list will be screened to determine the possible environmental effects, what mitigating measures may be required, and what further assessment is needed.

Screening and comprehensive studies comprise the “self- directed” portion of the EA process; the responsible authority is, itself, responsible for undertaking these studies. Responsibility for undertaking such environmental studies may be delegated to the proponent or to a consultant, but responsibility for decisions about the project based on the results of such studies cannot be delegated by the responsible authority.

As a further means of streamlining the EA process, the screening phase allows for a class screening procedure. In this case, a generic guide would be prepared specifying screening procedures for a particular project class. These projects would typically be small in scale, well understood, numerous, repetitive, and with minor and easily mitigable environmental effects.

Where, as a result of the screening or comprehensive study, it is determined that the project may cause significant environmental effects or that public concerns warrant such action, the project may be referred to a mediation and/or panel review. These types of assessments will be administered by the new Canadian Environmental Assessment Agency.

Mediation is the preferred choice whenever all stakeholders are willing to participate and a consensus is considered to be possible. Public meetings will not, typically, be part of a mediation. A mediator appointed by the Minister of the Environment will work with participants and help reach a consensus. Such a consensus will be reported and recommendations made to the Minister of the Environment and to the responsible authority.

An independent review panel is appointed by the Minister of the Environment, who also approves the panel terms of reference. The panel will identify the issues to be considered in its review, have the proponent prepare an EIS, hold public hearings based on the information provided to it, and make recommendations to the Minister of the Environment and the responsible authority.

The environmental assessment process, as described above, is illustrated in Figure 2.

Scoping Applications

The Act outlines four tracks to which scoping can be applied: the screening and comprehensive study components within the self-directed study phase; mediation and panel review components within the public review phase.-

Most projects to which the Act applies will undergo either a screening or a comprehensive study. If further assessment is required, a public review will be conducted. Public reviews are not managed by the responsible authority, but by a mediator or an environmental assessment panel, or both, appointed by the Minister of the Environment. Responsibilities for scoping therefore changes hands as a project moves from self assessment to public review under the Act.

It is important to note that one of the guiding principles upon which the Act is founded is that the level of effort required for an environmental assessment match the scale of the likely environmental effects of the project being reviewed. Applying this principle to scoping, one would conclude that major scoping exercises should be conducted for the projects undergoing comprehensive study, mediation or panel review, while more modest scoping efforts would be applied for screenings. More attention is devoted in this report to scoping for public reviews by a panel because of the availability of scoping information at this level of review. It must be understood, however, that the same scoping practices apply to screening processes. Given that projects undergoing public review possess either a significant number of environmental impacts, a significant level of public controversy, or both, scoping efforts at this level are likely

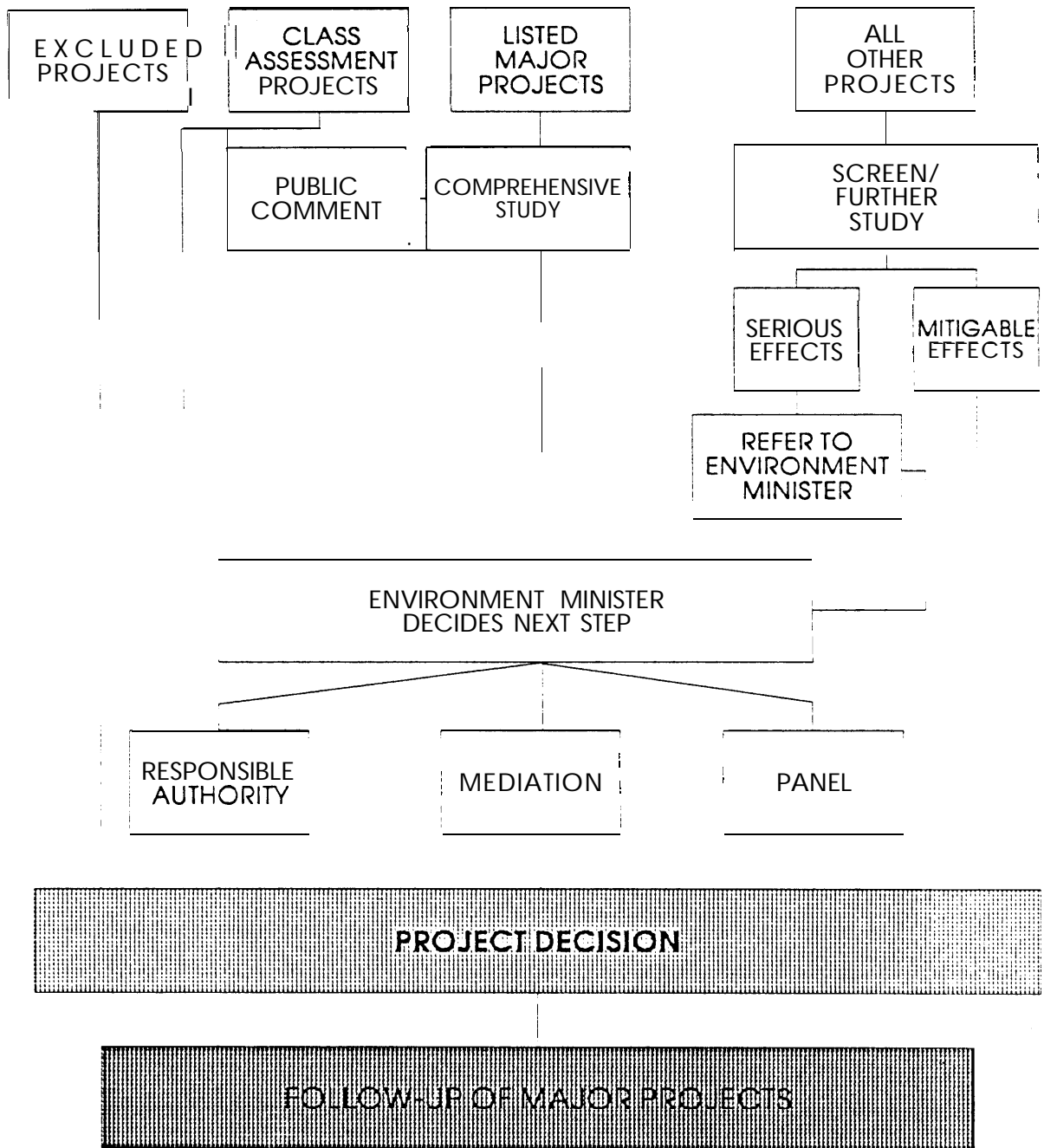


Figure 2. Assessment steps under the proposed Canadian Environmental Assessment Act.

to be more rigorous and demanding than would be required for the self assessment phase reviews.

Area Wide Studies

Area wide, or regional, studies "... attempt to deal comprehensively - both in terms of impact causing actions considered and the geographic area covered - with the likely effects of change" (United States Housing and Urban Development, 1981). Such studies are not site and project specific assessments, but deal with the cumulative effects of expected developments in the area, focusing, for example, on the ecosystem responses to the types of stressors that are likely to be applied in the region. As such, the studies can be of extraordinary value for the planning and environmental assessment of specific projects subsequently proposed in the area studied. Examples of such studies include watershed studies, biogeophysical studies of ecologically significant areas, or studies of land use activities in Native reserves. It is more useful for environmental assessment purposes if such studies use an ecosystem approach as opposed to a narrower strategy focusing on a single resource. Because such studies are frequently undertaken in anticipation of development projects in the area, they are of great value for EIA.⁵ Accordingly, the issue identification or scoping practices used for area wide studies tends to be very similar to those used in EIA reviews. The determination of the important issues in area wide studies is a crucial issue both for those undertaking the studies and for those who will use the studies in subsequent specific project reviews. If the area wide studies fail to address the important issues, their value for decision making will be greatly diminished.

Legal Constraints on the Scope of Environmental Reviews

While the Act has some formal requirements that would influence the needs for scoping, the main reasons for issue scoping are scientific, logistic and financial, not legal. Legislated constraints on issues scoping include the requirement that environmental reviews

⁵ It is precisely this feature that makes area wide studies of interest to EIA practice. Although not intended to be used for reviewing development projects, area wide studies have proven useful in subsequent project reviews.

address factors spelled out in the Act. Section 16 of the Act specifically states that all project reviews, both within self assessment and public review, include a consideration of:

- (a) the environmental effects of the project including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- (b) the significance of the effects referred to in (a) **above**;
- (c) comments from the public that are received in accordance with this Act and the regulations;
- (d) measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; and
- (e) any other matter relevant to the screening, comprehensive study, mediation or assessment by a review panel, such as the need for the project and alternatives to the project, that the responsible authority or, except in the case of screening, the Minister after consulting with the responsible authority, may require to be considered.

Moreover, all comprehensive studies, mediations and assessments by a review panel are required to consider the following additional factors:

- (a) the purpose of the project;
- (b) alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;
- (c) the need for, and the requirements of, any follow-up program with respect to the project; and

- (d) the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.

Another legal constraint on the scope of environmental reviews follows from an interpretation of the Supreme Court ruling regarding federal jurisdiction for environmental reviews. Should the project under review have a federal authority as a proponent, providing money or providing federal land for the project, there are no jurisdictional limits on the scope of the review. That is, the federal government cannot be expected to propose, fund or provide land for projects it believes would result in unacceptable adverse environmental effects, even if the effects are on resources under provincial jurisdiction. If, however, the review is being carried out solely because of federal regulatory involvement (that is, the federal government must issue a permit or licence, grant an approval or take any other action for the purpose of enabling the project to be carried out), then the assessment must be restricted to areas of federal jurisdiction.⁶ Such an assessment must, however, consider all environmental aspects within federal jurisdiction and any effects outside federal jurisdiction which will have a direct effect on areas of federal responsibility.

Cumulative Environmental Effects

One matter that is likely to be very important and which was not explicitly addressed in the EARP Guidelines Order is the requirement to consider cumulative effects in all reviews. Treatment of cumulative effects for the purpose of scoping is, in effect, a new task. For this reason, a separate section of this report is devoted to cumulative effects.

Scoping at Different Review Levels

It is worthwhile to briefly describe aspects of scoping in each of the four components of the federal environmental assessment process, as outlined within the Act. Screening, comprehensive study, mediation and panel review each possess an issues scoping component.

⁶ This restriction applies only to federal reviews. Clearly such a restriction does not apply to joint federal-provincial reviews.

Special attention should also be given to scoping within area wide studies for the reasons outlined earlier.

Scoping in Screening

Scoping in screening allows the responsible authority to determine what issues need to be considered in the screening report. Screening reports can range from very modest in length, as would be prepared for a project that can be easily determined to have no significant environmental effects, to very substantive and complex, as would be prepared for a project that is new, controversial, and that proves to have significant adverse environmental effects. Accordingly, the scoping efforts needed to screen projects must be matched to the likely outcome. For the simplest of screenings, modest consultation with expert federal departments' may be enough in the way of scoping, especially for an experienced EA practitioner.

It should be noted that public involvement is discretionary at the screening stage under the Act. The principle that public concerns play an important role in all phases of the EA must however be kept in mind. On the basis of public concern alone, the responsible authority can ask the Minister to refer the project directly to a public review if it is clear that public concerns about the project are unlikely to be adequately addressed in a screening. Equally, public concerns, if not resolved through public involvement in screening, can also warrant a public review by a mediator or review panel. Given the importance of public concerns, the responsible authority should try to be aware of them and respond to them from the outset of a screening.

The public can also be a valuable source of information during the screening phase. Local community residents and indigenous peoples can provide critical information, particularly when there are public concerns about a proposed project, and when the

¹ Expert federal **authorities** include Environment Canada, Agriculture Canada, Natural Resources Canada, Fisheries and Oceans Canada, **Heritage** Canada, Indian Affairs and Northern Development, **Health** Canada and any other federal agency that has a specified mandate relevant to the scope of the **environmental** review.

responsible authority needs to build a consensus among different groups. Thus, the responsible authority should determine as early as possible when and to what extent public input should be sought.

A public involvement program goes beyond allowing the public to comment on a completed screening report. Rather, it seeks to provide the public both with a variety of opportunities to influence recommendations and decisions and with the opportunity to review information about developments at all steps of the assessment.

Communication needs will change over the course of a screening. The responsible authority (or proponent) may need to:

- provide information so that people are informed and are given an opportunity to participate effectively;
- receive information and comments from the public;
- discuss issues and clarify positions and concerns;
- build consensus among key groups or individuals particularly affected by the project; and/or
- inform participants of results or decisions.

A wide range of public involvement activities can meet these changing needs. For more information on developing an effective public involvement program, a reference guide dealing with “Public Involvement” is in preparation by the Federal Environmental Assessment Review Office. A simpler but existing reference is the Initial Assessment Guide which follows the 1984 EARP Guidelines Order.

Scoping during screening likely involves using guidelines or checklists that identify the likely environmental effects of projects. These individual procedures are very important and can be very valuable for modest uncomplicated projects, as can class screening procedures. It is important to adopt a more substantive approach to scoping for screening the complex and controversial projects (e.g., screening a new type of project about which little is known or about which there is legitimate public concern).

Expert federal departments also have a specific role to play in the scientific and technical review of a class screening report. To ensure that all scientific or technical matters have been adequately addressed prior to submitting it to the Agency for review, the responsible authority should make certain that:

- all relevant expert federal departments have had an opportunity to review the report; and that,
- any concerns raised by these departments have been addressed to their satisfaction.

The responsible authority should identify the relevant expert federal departments as early as possible in the environmental assessment. It should establish lines of communication with these departments to identify and respond to any concerns they may have about the project under review. Other federal departments and authorities, provincial and municipal governments, and private sector organisations may also be involved in the scoping effort.

In undertaking screening, extra effort should be applied to scoping consultations for class screening documents, the preparation of scoping guidelines or scoping checklists, and to screening projects with potentially significant adverse environmental effects.

Scoping in Comprehensive Studies

The purpose of scoping in comprehensive studies is the same as in screening: the responsible authority determines what issues need to be considered in the comprehensive

study report. It is again noted that the proponent may be asked to prepare the EA documentation, but the responsible authority must ensure that the review is conducted in compliance with the Act, and it alone must decide on the course of action with respect to the project following the comprehensive study.

Indeed, the scoping process for comprehensive studies is similar to that for more complex projects where potentially significant environmental effects tend to be more prevalent. One significant legal difference is that, whereas public involvement is not mandatory at the screening stage, it is at the comprehensive study stage. The Agency is required to identify the time and place where the comprehensive study report will be available for public viewing and to receive and consider public comments on the report.

Because the comprehensive study list identifies projects likely to have significant adverse environmental effects, a substantial scoping exercise, identifying all significant concerns at an early stage, would likely avoid the problems of delay and extra cost associated with the decision to proceed to a public review.

Scoping in Mediation

Mediation, as a formal part of the EA process, is new in Canada. Although there is no history upon which to base a description of scoping efforts within this stage of review, the principles are nevertheless straightforward. Mediation is an appropriate choice when all interested parties are willing to participate and a consensus appears possible. It is particularly effective where there is a small number of interested parties and the environmental issues are limited in scope and number. Accordingly, the identification of issues is likely to occur prior to the commencement of mediation. The terms of reference for the mediation, prepared by the Agency and approved by the Minister of the Environment, will likely be much more precise than those for a panel review.

Mediation, like a panel review, allows for scoping to continue throughout the EA exercise. Unlike a panel review, however, mediation does not usually include meetings or

hearings open to the general public. Accordingly, the process of scoping in mediation is decided by the participants in the mediation process with little or no outside influence. For this reason, more discussion of scoping in mediation will not be provided in this report.

Scoping in Panel Reviews

Scoping at the panel review stage is used by the panel to assist in the identification of information requirements and to focus the review. Following the scoping process, the panel will issue these requirements to the responsible authority in the form of EIS Guidelines. More details on scoping practices in panel reviews are provided in the section “Scoping Practice for Federal Panels”.

Scoping in Area Wide Studies

Scoping in area wide studies usually leads to the elaboration of issues previously identified at a preliminary level, usually within the terms of reference or equivalent. In this respect, the terms of reference for an area wide study would be treated much like terms of reference for a public review by an environmental assessment panel.

Because area wide studies are undertaken partly in anticipation of future project reviews within the area, it is important that both types of assessments deal with the same kinds of issues in the same way. Consequently, scoping principles for area wide studies are essentially the same as those for environmental reviews. Those interviewed for this study generally took such a position.

There are two features that distinguish scoping for area wide studies from scoping at the panel level. The first is that those responsible for area wide studies undertake both the scoping and the studies and hence will combine issue identification with study design. This difference is shared with other EA scoping situations described in this report: scoping in EA processes where the proponent has primary responsibility for scoping, and the screening and comprehensive studies in the federal process.

The second difference can arise from the sources of funding for the studies. The mandate of the agency funding an area wide study may place conditions on the use of the funds that, in effect, constrain the study terms of reference. Such constraints could easily

undermine the holistic approach to issue identification generally associated with EA, which calls for a review of a full range of biophysical and ecological issues and the relations among them, and an equally full range of social and economic issues. Area wide studies with a narrow mandate will almost certainly draw ‘the ire of an increasingly sophisticated public.

Cumulative Effects

The Act requires that cumulative effects be assessed in every type of EA. Cumulative effects are generally those associated with a proposed project in combination with the effects of existing and potential future projects. This new EA concept may prove to be an effective way to measure overall environmental quality and will likely improve the public credibility of any process that considers these types of effects. Environmental quality is determined directly, not by the individual projects in the area but by the nature of pollutants in the local atmosphere, by the noise on the streets, by the water quality and by the social and economic changes in the region. These determinants of environmental quality are caused, not by individual projects, but by the cumulative effects of all projects in the area. Thus, consideration of cumulative effects is essential to people potentially affected by project impacts. It is therefore necessary to focus on cumulative effects if one wishes to focus on the issues of importance to people. In addition, if one accepts the principle of operating an EA process that is responsive to public concerns, one must deal with cumulative effects, because, again, it is precisely the cumulative effects that determine people’s concerns.

There are, however, scientific and administrative constraints that need to be resolved before the concept of cumulative effects assessment can be used as an effective EA tool. Scientifically, a much more detailed understanding of the environment and the dynamics of environmental change is required to determine impacts of many different activities than is needed for a single project. Moreover, if the cumulative impacts of several different projects surpass a threshold of acceptability because of nonlinear synergistic effects, how does one determine which project is the problem? This is difficult not only at technical and scientific levels but also at a management level. If one finds an environmental problem that is the

cumulative result of several projects, which project has restrictions imposed on it to remedy the problem?

A more immediate administrative difficulty in EA reviews relates to the responsibility for analyzing cumulative impacts. Is it fair to ask the proponent to do so when information from competitors may be necessary? For example, the terms of reference for the Alberta-Pacific pulp mill review required a consideration of the cumulative impacts of all existing and planned pulp mills on the Peace Athabasca river systems. The proponent might well have had difficulty obtaining from its competitors the detailed information about effluent releases needed to analyze these cumulative impacts. Why, one might ask, should an existing mill provide (possibly proprietary or even potentially embarrassing) information to a new competitor? That difficulty in the Alberta-Pacific pulp mill review was overcome by having the proponent maintain responsibility for its own impacts while the Alberta government became responsible for assessing cumulative impacts. This created some awkwardness during the review, but the results were acceptable. It would appear that this is not the way one is expected to treat cumulative impacts in reviews under the Act.

In identifying the cumulative effects to be considered, one must pay attention to all of the projects and activities that might reasonably have effects on the environment. In many ways, scoping such issues is not much different from issues scoping generally. One applies the same principles of consulting openly with all participants to determine the important issues that must be carefully considered by the responsible authority before decisions are made on the project proposal. The major differences are likely to be the additional need to understand existing environmental quality (as an expression of the cumulative affect of existing projects in the area), a need to better understand ecosystem limits or thresholds, as well as a means of identifying already approved future projects and activities in the area and their likely impacts. Once these cumulative impacts are identified, they must be assessed and their significance determined, just as for impacts of the project. It has been suggested, quite reasonably, that, with respect to cumulative effects assessment, the impacts identified for inclusion in the review be those that “already exist and are likely to be significantly affected by the project, its alternatives or any associated development” (Davies, 1992, p. 18) (The Canadian Environmental

Assessment Act, s. 16(1)). In effect, this would mean that only those cumulative environmental effects that would be exacerbated by the proposed project be considered.

For example, in addressing cumulative water quality concerns, all major sources of effluent that might affect water quality should be identified. These sources would include existing point sources (e.g., industries releasing effluent into the river, municipalities releasing effluent), existing distributed sources (e.g., agricultural runoff), and approved future distributed and point sources. (The Act specifies that only projects or activities that will be carried out need to be considered, not hypothetical ones). One could consequently predict the water quality impacts with and without the project. Other examples include air quality and the sources of atmospheric emissions, the loss of animal habitat due to various land use changes and related activities, and cumulative socioeconomic impacts due to the addition of several new development projects in the vicinity of a small community.

One of the special issues frequently raised by concerned members of the public is the matter of health impacts due to changes in water or air quality caused collectively by many different projects. These concerns are explicitly mentioned as environmental effects that must be considered under the Act and can be extremely important in environmental reviews as health concerns are identified as being of the highest priority in determining issue importance.

Practitioners conducting environmental reviews of “polluting industries” such as pulp mills, oil refineries or chemical plants often find that health concerns are likely to be the most substantial issues addressed. These concerns can be of even greater significance where there are other such industries in the region. People will, quite reasonably, insist on being assured that the health consequences of all these projects together are adequately addressed. This point merely suggests that such concerns are very likely to be raised by a concerned public and should be rejected as issues only with great care.

One special consideration commonly associated specifically with cumulative effects, although it also can be applied to simple project effects, is the question of exceeding ecological, environmental or social thresholds. Where cumulative effects combine to result in a threshold

being exceeded, the impact becomes unacceptable. Scoping must recognize the existence of these thresholds and attempt to identify them. Where these thresholds are in the form of regulations (e.g., dissolved oxygen in trout streams must not exceed 5.0 mg/L or fish with over 20 parts per trillion of dioxins cannot be sold commercially), they can be quite easy to identify. It is much more difficult to identify other forms of thresholds such as a limit on rate of community growth (e.g., caused by several different development projects in the region) beyond which community cohesion is lost or a threshold of ungulate habitat below which the population may not be viable. These non-regulated thresholds, while more difficult to identify and to quantify, may be every bit as important in predicting and assessing cumulative impacts.

One other general scoping method that can be applied to cumulative effects assessment involves the use of “indicator species”. The health of such a species is indicative of the health of the overall ecosystem. If the species is healthy, then so is the ecosystem; but signs of ill health in the indicator species may lead to impending problems for the ecosystem as a whole. Identifying such species together with non-species indicators of environmental quality can allow a more efficient assessment of the existing health of ecosystems and can lead to some very productive follow-up strategies, once the proposed project is constructed.

Scoping in Other Environmental Review Processes

The purpose of this section is to review EA processes where the responsibility for scoping lies with the proponent. The focus will be on the Alberta provincial process, but it is not the only provincial process that possesses this scoping characteristic.

In Alberta, when a proponent is required to prepare an EIA report (essentially equivalent to a public review by an EA panel in the federal process), the responsibility for preparing the “terms of reference for the preparation of the report” (equivalent to EIS guidelines at the federal level) is that of the proponent. The proponent is encouraged to undertake this scoping activity in consultation with the provincial government and with the public. Draft terms of reference are then submitted to the Alberta Department of

Environmental Protection. These terms of reference are made available for comment by both public and government agencies: the Department of Environmental Protection issues the final terms of reference.

Formally, it is up to the proponent to conduct scoping in accordance with the principles of good scoping practice. Scoping is not always undertaken in this manner, but failure to do so usually results in delays and greater costs to the proponent. Thus, the scoping sessions conducted by experienced proponents are not that different from those used in the federal process. Government involvement may not be as great, but wise proponents ensure adequate involvement of relevant government regulators.

The most important difference between the federal and Alberta EA processes is that the proponent following the provincial procedures is responsible for two conceptually distinct but closely related tasks. Firstly, it must identify the issues to be studied in the environmental review and secondly it must conduct the studies and prepare the environmental impact assessment report. In undertaking scoping, the proponent will combine the two tasks and determine the issues to be addressed at the same time as it determines how they will be studied. This makes for a somewhat different scoping exercise from that used in the federal process where the environmental assessment panel is responsible for issue identification and the proponent is responsible for deciding how to study the issues.

During consultations conducted for this study, two observations were made that applied directly to situations where the proponent is responsible for scoping. The first observation, made by a project proponent, noted that guidance regarding what is expected of a proponent was badly needed to help proponents to undertake issue identification effectively. The second suggestion, made by an environmentalist, noted that having proponents undertake scoping was counterproductive because it involved a conflict of interest. Because of a lack of trust in the proponent's willingness to identify all issues, the first task that the informant envisaged was to review the terms of reference prepared by a proponent to find what important issues had been left out or down-played, thereby leading to duplication.

The first of these observations is potentially important to the federal government in the context of joint reviews; it is important to have scoping conducted effectively. Harmonised guidance for effective scoping could facilitate this need. The second observation relates to the credibility of the scoping process and is embodied in one of the principles of scoping practice discussed below.’

Principles of Scoping Practice

Scoping is a shared responsibility. All participants, the proponent, government agencies, the public and the environmental assessment panel (or equivalent)⁹ have a role to play. The following principles of scoping practice have been developed based on the work undertaken for this study. The same principles were found to apply to scoping for environmental reviews under the Act and to scoping for area wide studies, although there are some modest differences in how the principles could be applied.. The following have been identified in this study as the fundamental principles of scoping practice:

- * The mandate of the review must be broad enough to address a full range of issues (both biophysical and socioeconomic) but focused enough to allow a meaningful review;

Early and sufficient information must be made available about the project under review;

Participants must be identified and involved in the scoping exercise as early as possible;

⁹ This is not to suggest that having the proponent responsible for scoping is inherently wrong, only that care must be taken to address the importance of a credible process.

³ Much of the emphasis in this report has been put on environmental reviews by a federal environmental assessment panel. For **convenience**, therefore, **in this** section, the term “panel” is used to refer to the body responsible for scoping.

- * Both public input and scientific and technical input are essential for effective scoping;
- * An open and publicly credible process must be used;
- * There must be real opportunities for participants to exchange views with others on which issues are important and to rank those issues;
- * Existing information on potential impacts should be used to help in issue identification; and,
- *

For each of these principles, it is important to elaborate on why they are fundamental to effective scoping. The following provides the reader with a further explanation.

Need for a Suitably Broad Mandate

The terms of reference given to a panel must be broad enough to allow it to investigate the wide range of impacts relevant to the development projects being considered (including applicable cumulative effects). The public expects EA reviews to consider all consequences of developments and will generally not accept explanations relying on lack of jurisdiction, on coverage of some issues in other review processes, or on other bureaucratic, political or legal explanations. Thus, failure to allow a very wide range of issues to be dealt with can seriously compromise the credibility of the review. This is one of the important reasons for recent support of joint federal provincial reviews. By combining the jurisdictions, the responsibilities of the two governments can be combined and matters over which both federal and provincial governments have jurisdiction can be included in the mandate of the review.

The mandate given to review panels should not be unconstrained. Having the panel investigate the environmental effects of a project does not mean that the panel should investigate the underlying government policies, even if some members of the public would like

it to do so. Terms of reference are in fact provided to define and set limits on the matters before the panels.

Early and Sufficient Information

It is important to get early and sufficient information about the project to participants. People need to understand the project being reviewed if they are to comment meaningfully on its likely impacts. This information must include a project description so that participants can understand what is proposed. The project description should provide a complete explanation of the project including its location (suitable scale maps are helpful), the physical layout and design, construction plans and schedules, operating procedures, including resources required and effluent to be released (a basic description of materials used, materials and byproducts produced, and all materials released to the environment), and decommissioning plans.”

Project descriptions must be simple and clear, so members of the public can understand it. In fact, any information circulated to the general public should avoid technical jargon. Project descriptions are almost always obtained from the project proponent and approved by the responsible authority, panel or mediator (or whoever is conducting the scoping exercise). If the project description is lacking in detail or is too technical, it should be revised and made satisfactory before proceeding with scoping for the review.

While a project description is necessary, it is not sufficient. At least for the public review phase of the EA process, it is important to have some preliminary indication of what the environmental impacts are likely to be. Such information assists the public in indicating which impacts are most important to them, and suggests what scientific and technical expertise may be helpful in scoping the review.

A preliminary outline of expected impacts should usually be obtained from the proponent (although for projects undergoing public reviews, it is often prepared by a

¹⁰ These categories apply most readily to projects that involve a “physical work”. For projects that are not so related, yet are covered by the Act, an equivalent project description should be provided.

consultant). Some proponents, especially those without previous public review experience, may be unwilling or unable to provide an adequate outline of expected impacts that would stimulate discussion in a scoping process. If this situation arises, the institution conducting the scoping exercise must ensure that such a document is satisfactory.

The purpose of a preliminary outline of expected impacts of a proposed project is primarily to stimulate discussion. In order to do this, it need not be polished, but should identify all of the major impacts anticipated. Follow-up studies of similar projects should be referenced when preparing this outline.

Project information should be made available in a timely manner so that scoping is undertaken at an early stage. Material about the project (the description and expected impacts) should be made available to participants well in advance of the scoping stage so that they can use the information to prepare and present useful ideas.

Early Identification and Involvement of Participants

The need for early identification and involvement of participants follows from the purpose and objectives of scoping. It is very important to have issues raised early in the process. If they are not raised until a later stage, addressing them may be much more difficult or expensive because unplanned revisions to project design and impact studies may be required. A widely representative group of participants must be involved in scoping. Should a critical group be missing and, as a result, important issues are raised later in the review process, the proponent, regulators and the public may become frustrated.

Use Both Public Input and Scientific and Technical Input

In obtaining advice regarding issues to be studied, it is important to get a balance between input from the public and input from scientific and technical specialists. Members of the public provide an essential contribution, giving information on local values, and other local information not readily available to technical specialists. A broad range of ideas from the

people most affected by the project is a necessity. The concept of VEC's can be particularly important to people and can only be determined by asking people what they value. Obtaining this input is one of the important means by which the Act meets its objective of ensuring an opportunity for public involvement. As noted earlier, certain specialist knowledge, like traditional ecological knowledge (TEK), can be an important source of information within public consultation.

The advice provided by scientists and technical specialists is also essential to a good scoping exercise. These participants may have a good understanding of ecosystems, social systems or economic systems. As such, they can identify likely impacts, including impacts and natural linkages that others may overlook.

Technical specialists can also provide other useful information. They are often aware of existing studies that may be of value in the environmental review, which could lead to significant cost reductions through minimizing duplication. Similarly, scientific and technical expertise can be of great value in identifying the studies required to gain the information desired. In this respect, scientists and technical specialists contribute not only information about what issues should be studied, but also what studies to undertake and how to undertake them.

Use an Open and Publicly Credible Process

Of all the scoping principles, informants were most emphatic about the need for a publicly credible process. It was observed that members of the public today are well educated and have become very sophisticated in their expectations for involvement in environmental reviews. Failure to employ a publicly credible process results in unsatisfactory issue identification and ineffective scoping. Moreover, public credibility in the 1990s is harder to achieve than it was in the 1970s and the 1980s. Transparency builds public confidence in the process which results in better information from the public. People expect to be heard and to have their views considered; this is essential if scoping exercises are to be taken seriously.

There are many important consequences of this principle. First, the environmental assessment panel (or its equivalent) must be independent, as recommended by the United Nations Environment Program and incorporated into the Act. Federal panels are independent of the proponent, of governments that will decide on their recommendations, and of the people potentially affected by the project. Independence creates considerable credibility in the process and leads public participants to contribute effectively. The lack of public confidence in government and in bureaucracies of the 1990s does not generally extend to a lack of confidence in independent panels.

Another aspect of a credible EA process involves the need to ensure that the public has access to the panel (or equivalent). This opportunity should be provided in the area where the people are likely to be affected, usually where the project is proposed. People have an active distrust of “made in Ottawa” policies that are made where the bureaucrats work rather than where the people live. Going to the people is essential for credibility.

Holding confidential meetings with selected participants (such as industry or governments) is often viewed as trying to keep secrets from the public and will greatly reduce the acceptability of the process. Such meetings are likely to be exceedingly rare under the Act¹¹.

The final aspect of the requirement for an open and credible process relates to the product of the scoping exercise. The decision about what needs to be studied (the EIS guidelines) must be based on the information provided during the scoping process. The public expects to see their views, as expressed during the scoping exercise, incorporated into the information requirements.

Opportunities for Participants to Exchange Information

¹¹ Confidential meetings were precluded under the EARP Guidelines Order. The Order stipulates that “all hearings of a panel shall be public hearings” and “all information submitted to a panel shall become public information”. While the Act allows for panels to receive privileged information, it is expected that the tradition of open meetings will continue.

Having various stakeholders in a review present their respective views in the presence of others usually facilitates a productive exchange of concerns. The purpose is to allow a consensus to be reached by the participants, if possible. Even if a consensus is not reached, participants will have had an opportunity to benefit from the views of others, and the panel will have an opportunity to seek clarification when conflicting views are expressed.

During public exchanges, it is important that issues be identified as well as ranked. It is also important to eliminate those concerns that will ultimately not affect the decisions to be taken about the project under review.

One of the most significant fringe benefits of scoping is the exchange of ideas among participants. Participants can come to understand the views of others and, even if they do not agree, may gain more respect for, and understanding of, those views. It is also possible that participants will learn new ideas and facts from others that will influence their views. One of the informants described an example where people, who were very concerned about a proposed development, obtained an explanation from a credible (independent) scientist that led to a complete resolution of their concerns. The scientist was able to explain why the concerns were unfounded and did so in a controlled and non-emotional manner. The benefit of the scoping exercise was that the issue did not have to be studied. The benefit for the participants was a better understanding of the-development.

Use of Existing: Information

Making maximum use of existing information is essential for good scoping. Often, good information describing the surrounding environment will exist. This information may not be easily obtainable, but finding it through university or consultant studies, for example, and using it for issue identification, can make the scoping task much easier. Access should be granted to participants and to the panel prior to (or as soon as possible during) the scoping exercise.

Another source of valuable information is follow-up studies (or post-project analyses) of similar projects in the same area. Such studies have been used to determine the accuracy of previous impact predictions and the effectiveness of mitigation measures with a view to transferring the experience from the project to future activities of a similar type. Because such studies involve observations of real projects rather than predictions based on professional judgement, they are credible, and useful for identifying important issues in an objective manner.

All Participants Have Scoping: Responsibilities

The final principle is that all review participants have an important role to play in scoping. The success of the scoping exercise is dependent upon the role that each participant plays.

The role of the EA panel (and especially its secretariat) is to implement a scoping process that will allow all participants to raise the issues and identify the important issues that warrant further study. Based on this information, the panel must decide on the issues that require further study and instruct the proponent to prepare an Environmental Impact Statement addressing these issues.¹²

The role of the public is to review information about a project and to provide input to the panel. This input can consist of specialist knowledge, local knowledge, local values, and concerns about the environmental effects of the project.

The role of government agencies is to provide on request whatever specialist or expert information or knowledge is relevant to the project. The panel will rely on its own technical expertise and that of the government departments that have specialist knowledge or responsibilities relevant to the project.

¹² The panel may also request additional information from government agencies. Generally, however, the EIS guidelines given to the proponent will deal with the information required.

The panel will hire technical experts from outside the government where advice from such experts is regarded as essential in responding to its terms of reference and where it is satisfied that the required expertise cannot be obtained within the public service.

The role of the proponent is somewhat more complex. In the scoping process, it is responsible for providing project information in a form that will allow effective issue identification, including both public distribution of project documentation and appropriate explanations of the project at scoping sessions. In addition, the proponent is a participant in the review process, and, as such, may wish to express its own views on the issues raised and their relative importance.

In general, the proponent will prepare the EIS, based on the guidelines that follow from the scoping process. Thus, it behooves the proponent to listen very carefully to the public concerns expressed during scoping and to understand them fully. By doing so, the proponent can understand, far better than by reading the resulting EIS guidelines, what the details of issues are, who is concerned about the issues and how the issues might be studied or resolved.

Scoping Practice for Federal Panels

The use of scoping meetings has become a standard practice in federal EA panels. While the approach has varied, some panels have prepared information requirements in draft form, published them and then held meetings to discuss the requirements. Others have held meetings at which participants were asked to help identify issues that the panel then used to prepare draft information requirements; these were circulated publicly for written comment before being finalized. Other panels have used informal workshops run by consultants as a means of encouraging informal exchanges, while the panel members simply observe. Such workshops have often focused on a draft issues document prepared by consultants or the panel secretariat - in effect, something for participants to shoot at. Other approaches have also been used.

Scoping sessions can range from informal to formal; unstructured to structured. Circumstances that influence the type of scoping sessions to be used include the level of understanding of the project among the participants, budget, and time requirements. A workshop style of meeting involves more exchanges among the participants and is more flexible for a public unaccustomed to more formal public meetings, while scoping meetings tend to be less expensive but work well for a public familiar with the project and EA processes. Public meetings are always conducted in proximity to the proposed project site and may be extended to large cities nearby, depending on the level of public interest.

Along with any scoping process, there are many requirements of the EA panel secretariat. The secretariat (formally under the direction of the panel) must obtain the project information from the proponent and ensure that it is satisfactory for scoping purposes. This may involve explaining the requirements to the proponent, helping the proponent rewrite portions of the material, or even writing some material with the help of the proponent and the responsible authority. The panel secretariat must also identify the likely participants in the review process and encourage their involvement in the scoping exercise, including contacting environmental groups and industry organisations likely to be interested in the review, consulting local governments, assembling the names of persons on mailing lists related to the project under review, reading newspaper articles for the names of persons interested in the project, and talking to as many of these people as possible for other names of prospective review participants. The panel secretariat will also contact the relevant government specialists to ensure their participation in the scoping exercise. In addition to these approaches, advertising and promotions in local media, and direct mailings to those most likely to be affected by the project are all techniques used to encourage early involvement by the public.

The secretariat is also likely to be involved in assembling documentation related to the project that the panel may wish to use to help it in scoping. (Such documentation is also made available to the public in viewing centres in the area affected.) A particular example of this was identified by an individual involved in the Halifax Harbour Cleanup Panel. Just prior to panel referral, a high level scientific task force had made recommendations regarding potential project impacts and the report of that task force played a major role in shaping the panel's

initial views on important issues. In preparing for scoping sessions, extensive use was made of this material.

There is another aspect of these scoping processes used in federal environmental reviews that is worth noting. The panel and its secretariat attempt to identify and involve all participants early in the scoping process. On occasion, it becomes clear that a group is inadequately represented or has not even been approached. In that situation, panels have been known to add extra scoping sessions to ensure that the ideas of these groups are heard. This happened recently to the panel reviewing the High Level Radioactive Waste Concept. After the panel had completed a long set of cross country scoping sessions, it chose to add two more sessions, one with aboriginals and one with youth, in order to get a wider spectrum of public input. The same sort of sessions were added by the Halifax Harbour Cleanup Panel. It scheduled scoping meetings with a few select groups who had useful information that was initially introduced during the scoping sessions.

Two significant concerns have been raised about the effectiveness of scoping efforts by federal EA panels. The first concern is that panels seem unwilling to eliminate concerns, preferring to include more material in the review than is really needed. The second concern is that panels tend to produce EIS guidelines that are excessively detailed and prescriptive. These guidelines virtually tell the proponent the issues to examine in the EIS and often how the studies should be undertaken. It is, in the view of some people interviewed, fundamentally wrong for a panel to be so prescriptive. Panels should, according to this view, merely identify issues, leaving it up to the proponent (most likely in consultation with the proponent's consultants) to determine how best to address the issues. This idea was not supported by all informants. The contrary view is that, for some proponents, it is better to spell out every detail, otherwise the EIS will not be as good as it could be, which would force the panel to issue a request for additional information and lead to delays.

Of these two concerns, the first is more serious, suggesting a need for greater scoping discipline by panels. The second leads to questions about how detailed the EIS guidelines

ought to be. Certainly an interdisciplinary approach to EIS preparation is required, but the detail required in methods specification is debatable.

Scoping-A State of the Art Example

The following case study represents an innovative approach to issues scoping. The exercise was conducted for the OSLO oil sands project, a project now on hold pending better economic circumstances. The scoping and EIS preparation stages have, however, been completed. The EIS was prepared in anticipation of a joint provincial federal review conducted essentially as a provincial review by the Alberta Energy Resources Conservation Board.¹³

Figure 3 illustrates the focused EA process used for the OSLO project. It includes both scoping and EIS preparation because scoping in Alberta is best understood in the context of the entire EA process.

The focused EA process encourages the early identification of impacts through three stages of impact documentation and review. The first stage is the impact identification stage and is the major scoping effort in focused EA (dark shading). All concerns raised are initially screened during this stage. The second stage is the impact assessment phase, still partly scoping (grey shading) and partly impact assessment. In this stage the impacts are organised into impact hypotheses, a technique for applying a systems approach to impact assessment. These hypotheses include an explicit statement about the impacts as well as pathway diagrams (discussed shortly) to clearly link the impacts to parts of the project. Validating the legitimacy of the impacts and pathways, as well as determining the significance of the impacts, both take place in this phase. The third stage is the impact management planning phase. Primarily, it involves planning for impact monitoring and mitigation and has a limited scoping function

¹³ More details on this scoping process are contained in Kennedy and Ross (1992). It is described fully in Kennedy (1992), a PhD thesis for which the scoping process was developed. The description provided here is based on Kennedy and Ross (1992). Indeed, much of the description that follows involves material taken directly from that article.

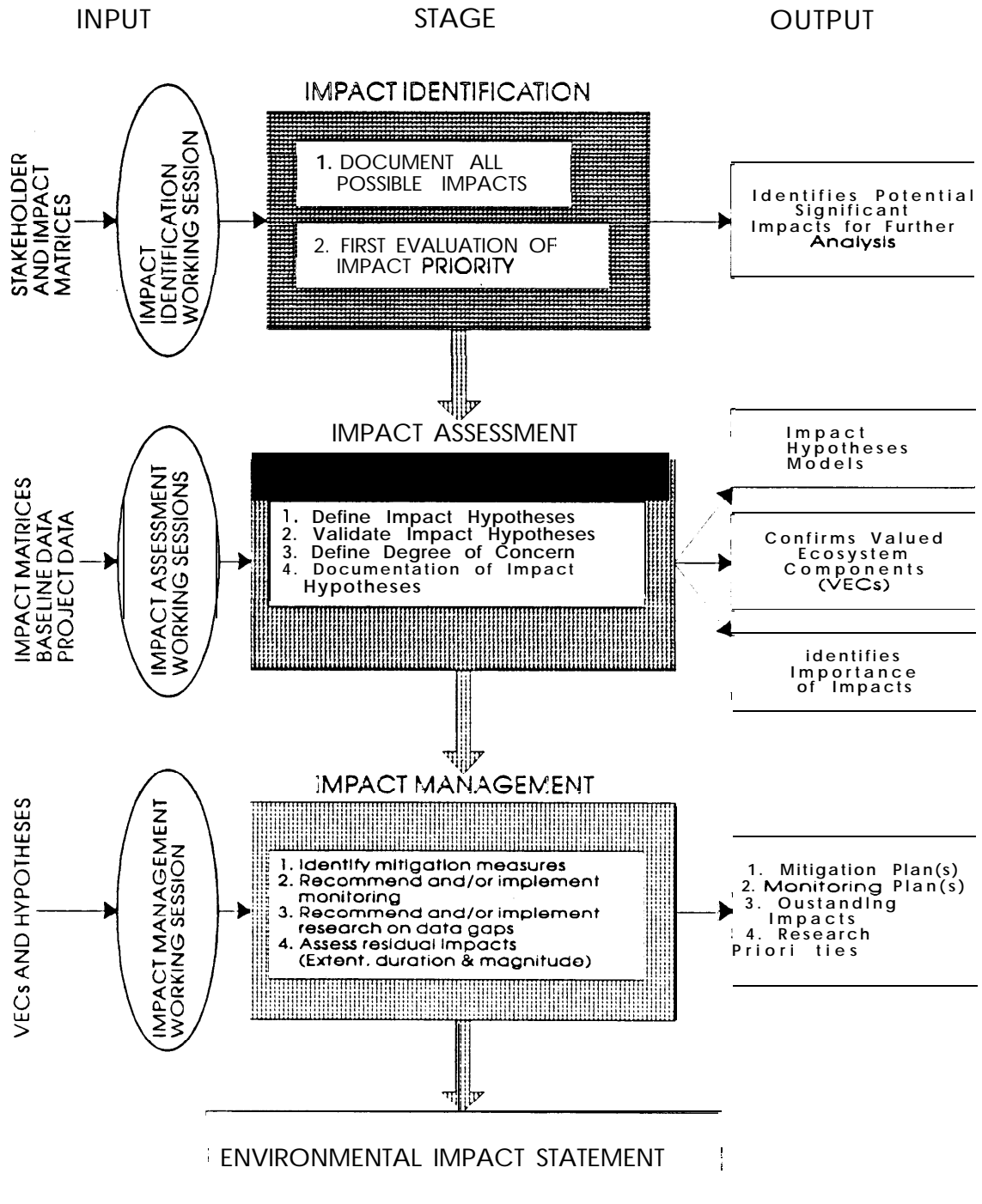


Figure 3. Example of a focussed environmental assessment process, as conducted for the Other Six lease Options (OSLO) project in Alberta. Figure courtesy of Dr. Alan Kennedy, Imperial Oil Resources.

(light shading).

The impact identification stage involves identifying the stakeholders, compiling the project description and baseline biophysical information, and summarising the real and perceived environmental issues. Key stakeholders include federal, provincial and local government agencies; industrial groups; non-government organisations; aboriginal groups; and the proponent of the project. The impact identification stage is used to determine the concerns of key stakeholders. This allows those preparing the EIS to know the impacts about which particular stakeholders have concerns and to understand what further public input may be required. Public input into the focused EA and updating the key stakeholder list goes on throughout the whole process.

During the impact identification stage, an attempt is made to examine all possible impacts, while at the same time identifying:

- (1) those environmental or social components that could be significantly affected by the development;
- (2) those components that may interact with others in some manner but do not justify further examination in the impact assessment; and,
- (3) those components that will likely not be affected by the project.

This exercise is a fundamental early step in scoping for it facilitates the identification of the more important environmental attributes that may later be identified and documented as VEC's. This approach has proven to be more effective than examining in detail every possible interaction between the proposed development and the environment. It helps to achieve consensus to further consider some project activities and impacts, and to immediately exclude further study of the less important concerns. Information obtained and conclusions reached during this phase are reviewed and updated throughout the focused EA process as new

information becomes available on the project description, baseline biophysical resources and impacts, stakeholder concerns, and mitigation potential.

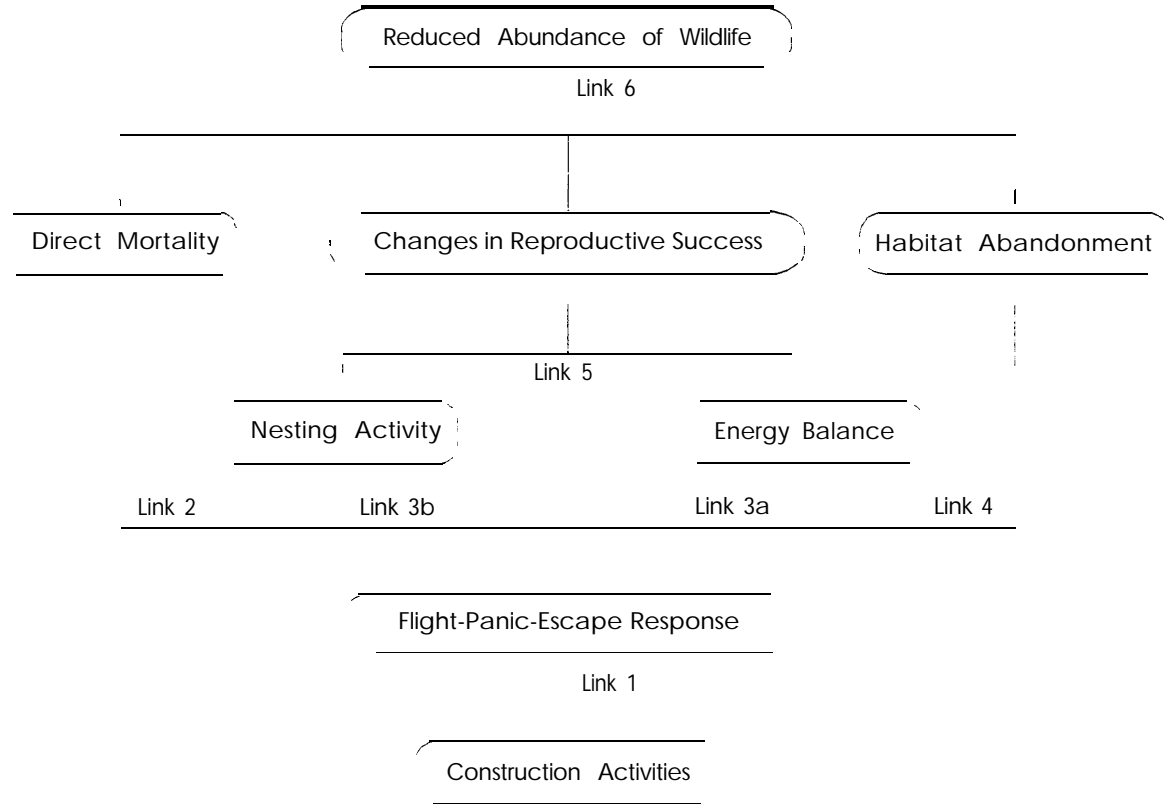
The objective of the impact assessment stage is to describe the major project impacts identified in the first stage regardless of their potential for mitigation, and to define the physical and ecological linkages between the project activities and the VEC's that result in the impacts.

The focused EA approach uses impact hypotheses during the assessment stage as a mechanism to depict impact integration. An example of a relatively simple impact hypothesis and pathways diagram, defining the generic impacts of development activities on wildlife, is illustrated in Figure 4. The bottom of the pathway diagram introduces the potential cause of the impact. The reader is then directed through a series of linkages to the impact scenarios. The impact hypothesis statement and diagram improve comprehension of impacts when development actions are assessed at focused EA working sessions because they explicitly state the predicted impact as well as diagrammatically represent it.

Some impact hypothesis pathways are quite straightforward, involving only one or two linkages, whereas others, such as those involving the transport and deposition of atmospheric emissions, are more complex, involving several major pathways and many linkages. The impact hypotheses are most effectively formulated by an interdisciplinary working team of technical specialists during working sessions held throughout the focused EA.

Another component of the impact assessment stage is the validation of the formulated impact hypotheses. This validation consists of evaluating each impact linkage in terms of uncertainties and necessary assumptions, evidence for and against the linkage, project design modifications that could eliminate or alter the linkage, and confidence in the information available for documenting the linkage. This validation process assists the interdisciplinary working team in eliminating all invalid hypotheses. Resources can then be concentrated on the significant environmental impacts during the remainder of the focused EA.

Impact Hypothesis: Construction activities for the development of the project facilities will disturb wildlife, resulting in decreased populations.



- LINK 1: Construction activities lead to flight-panic-escape response in wildlife.
- LINK 2: Flight-panic-escape behaviour leads to direct mortality of wildlife,
- LINK 3a: Flight-panic-escape behaviour will increase energy costs which, in turn, will result in the inability to reproduce successfully.
- LINK 3b: Flight-panic-escape behaviour will disrupt reproductive activity.
- LINK 4: Flight-panic-escape behaviour can alienate wildlife from critical habitat.
- LINK 5: A disruption of energy balances or nesting activities can result in changes in reproductive success.
- LINK 6: A change in reproductive success, alienation from critical habitat and indirect impact result in decreased abundance of wildlife.

Figure 4. An example of a wildlife impact hypothesis and pathway diagram. The impact scoping hypothesis and pathway diagrams are useful for focused EA teams as they integrate the often complex interactions of impacts through schematic documentation of linkages. Figure courtesy of Dr. Alan Kennedy, Imperial Oil Resources.

Once a hypothesis is judged to be valid, it is further evaluated to determine its importance. In general, impact importance is rated using the following three criteria:

- a) geographic extent -- the area affected
- b) duration -- the length of time the impact will be experienced, and
- c) magnitude -- the fraction of the population or resource base that will be affected.

Estimates of geographic extent, duration and magnitude are presented as a guideline and adjusted when appropriate. At the conclusion of the assessment stage, the impact hypotheses are collected into an impact forecast summary for use in the remainder of the focused EA process.

The impact management planning stage involves developing mitigation measures to deal with selected major impacts, undertaking studies to obtain more information about impacts if required, and developing plans for monitoring, evaluating and managing other appropriate impacts.

The focused EA involves the interdisciplinary working team with significant input from the project proponent, a socioeconomic impact assessment team, a variety of government agencies, non-government organisations and other affected stakeholders. Because of the need for expert input on a wide array of issues in the EIS, exchanges and integration of information among many members of the interdisciplinary working team are important in ensuring a sound and balanced document. To promote this exchange and integration of information, as well as to present opportunities for input from the public, focused EA includes a minimum of three integrated working sessions with members of all the groups mentioned above. Each of these three work sessions directly precedes a major stage of focused EA (Figure 3). Other ad hoc sessions are called when needed. The objectives and basic function of each work session are explain⁴ below.

The primary purpose of the issue identification work session is to identify and discuss potential interactions between project activities and important environmental resources. All such interactions are documented, discussed and ranked. Based on these judgements, the participants formulate impact matrices for all of the key interactions. At the conclusion of the session, technical experts review the findings based on current information about project design and environmental resources.

An impact assessment working session is conducted to develop and document impact hypotheses and to determine the validity of each hypothesis. Once a hypothesis is judged to be valid, it will then be evaluated to determine its importance (based on extent, duration and magnitude). Mitigation of valid impacts is discussed in a cursory manner at this time to assist in impact scoping. Participants will include all those from the issue identification session and may include others that have been added to the key stakeholder list.

The final working session on impact management planning focuses on a review of validated impact hypotheses and methods for managing significant project impacts. Participants include all those from previous workshops and any additional key stakeholders. The objective of the management planning session is to describe mitigation measures for all important impacts, to identify the residual impacts, to assign priority to these impacts, and to recommend additional research needs and monitoring protocols for impacts of concern. As with the two previous sessions, technical experts document and summarize management plans for each impact hypothesis model in a format that facilitates incorporation into the EIS.

Scoping Practice for Area Wide Studies - A Case Study

The case study presented here, called the Northern Rivers Basin Study, is being conducted under an agreement between the governments of Canada, Alberta and the Northwest Territories. The agreement involves an aquatic study of the Peace, Athabasca and Slave River basins and is carried out under the provisions of the Canada Water Act. Its plans are to gather comprehensive information on water quality, fish and fish habitat, riparian

vegetation and wildlife, hydrology and hydraulics, and use of aquatic resource use. This information will be used to develop the capability to predict and assess the cumulative effects of development within the basin? The study is expected to be completed in 1995.

The scoping exercise used in the Northern Rivers Study is not typical of area wide studies; it nevertheless provides several useful lessons. The individuals involved in the study feel very optimistic that such approaches will become widely accepted because of their anticipated success. It was the major case study selected for investigation and it ultimately conformed with most of the principles of scoping practice developed in this study.

The project was first contemplated in the late 1980s when northern Alberta was experiencing a surge of development. In 1989, a joint federal-provincial environmental review of the proposed Alberta-Pacific pulp mill was undertaken. The review board concluded that there was potential for very significant aquatic impacts on the Peace-Athabasca river system. It also recommended that “further scientific studies on the river systems be conducted . . . [and] managed by an inter-governmental committee with representation from all stakeholders”. Shortly after the release of the review board’s report, the Northern River Basins Study was announced and government employees began developing the terms of reference for the study.

The initial development of the terms of reference constituted the first scoping exercise for the study. It was founded on the previous work that had been undertaken, including the report based on the very extensive public hearings of the Alberta-Pacific review board which had 29 hearing days in eleven different communities in northern Alberta and the Northwest Territories. No significant outside consultation was undertaken in preparing these terms of reference. They were subsequently incorporated into the Northern River Basins Study Agreement.

A large (25 person) Study Board was created with the responsibility for overall direction of the study. The Board consisted of representatives from all three governments and

²⁴This descriptive material is largely taken from the Northern River Basins Study: Annual Report 1991/92 Fiscal Year, Northern River Basins Study, Edmonton, 1992.

many other stakeholders. Indeed, the Board appeared to be essentially what the Alberta-Pacific review board had in mind when it recommended that further river studies...

... be under the broad direction of a management team with representation from all major stakeholders. These would include the Alberta and other provincial governments, the federal government, Government of the Northwest Territories, downstream towns and cities, Aboriginal people and their governments, and the industry.

As soon as this largely independent Study Board was put in place, a renewed effort to determine the issues to be studied was started. The Board also made other decisions that influenced the nature of the scoping process used in determining the nature of the study. It chose to develop its own mission statement and a set of questions that should be answered in the study. Understandably, these were to be consistent with the study agreement so that the terms of reference for the study were basically followed. The Board also chose to hold public meetings throughout the study area.”

The development of questions and the public meetings in the study area together led to considerable new public input. The result was a set of sixteen questions which, the Board-felt, required answers for the fulfilment of the study mandate. The criteria for issue identification used by the Board were largely those identified in the study agreement. The studies had to be scientific, deal with the aquatic environment, and deal with the effects of development in the identified river basins. Other criteria that have clearly been included were based on the legitimate concerns raised by the public.

Before proceeding further with the description of the second scoping exercise, it is worthwhile to reflect upon the ways in which the public was involved in these Board meetings. At each meeting, time was allotted for presentations by local public representatives to suggest issues for study, and give reasons for their suggestions. These presentations, often followed by casual discussions with Board members, had a notable effect on the study. For example, presentations at Fort Chipewyan by native elders about their TEK of the river so

¹⁵ Apparently all Board meetings were public but one. It was closed only because it dealt with a personnel matter.

impressed Board members that the TEK component of the study was given funding and a much higher profile.

The local public can be notified about upcoming Board meetings in different ways. In Athabasca, for example, the approach was to contact the Chamber of Commerce, the mayor, environmental groups and other organisations. These sources would be both invited and asked for names of other sources that might be interested in attending the Board meeting. The list of all those who had contacted the Board was scanned to identify the people who resided in the area; they were then sent personal invitations from the study director. In addition, advertisements were placed in local newspapers and flyers were sent to every house within 150 km of Athabasca.

During these public consultations, members of the public noted that the agreement forced a relatively narrow study. The Board acknowledged this and argued that it was out of their hands; the public was not inclined to accept this explanation, even if they understood its legitimacy. In retrospect, Board members rationalized the high expectations the public had of this study and their intolerance of the narrowness of the study agreement. In effect, they said that the first scoping exercise (undertaken without direct public consultation by government staff) was unacceptable, while the second scoping effort (undertaken publicly by the Board) was much more acceptable.

As a continuation of the scoping exercise, a Science Advisory Committee was formed to perform the required studies. This Committee was given the responsibility for providing scientific advice to the Board and others with respect to the design and implementation of the study. It fulfils this responsibility by confirming the scientific soundness of the study program, monitoring study progress, reviewing the results of individual studies and reporting to the public on scientific matters.

Effectively, the Science Advisory Committee is to perform scientific scoping for the study. The Committee worked closely with the Board, constantly attempting to ask how the sixteen questions could be answered in a scientifically credible manner. One member of the

Science Advisory Committee wondered if the Committee could take the questions asked by the Board and, with the budget allotted, make a real and scientifically credible contribution to answering the questions, deal with the legitimate concerns of the people potentially affected by the existing and future projects in the river basins, and help the future management of the river. The conclusion was clearly positive; the need was so great that hundreds of millions of dollars could be spent productively. The questions addressed by the Scientific Advisory Committee focused primarily on what the priorities were. This was where a Science Advisory Committee could be most helpful.

The public communication responsibility of the Scientific Advisory Committee was addressed by having its available members meet publicly with the Board at its meetings as well as through a public science forum. The two day science forum was to encourage public discussion on the study design. Participants were involved in an exchange of ideas about the scientific plans to study the sixteen questions.

One of the concerns raised by both the Board and the Science Advisory Committee was the importance of excellence in scientific expertise that is used both on the Science Advisor) Committee and in performing the studies.

The major question about this area wide study is whether a study Board, as widely representative as this one, can come to a scientifically justifiable consensus about how the northern rivers being studied should be managed. If such a consensus could be reached, its acceptance by such a diverse group of stakeholders would make it difficult for governments to resist. Accordingly, this social experiment as it was described by several informants, is looked upon with great interest. It has the potential to affect significantly, and in a scientifically credible fashion, the management of developments in the northern river basins.

The reasons for the Boards credibility is the last observation of this case study. Its credibility is based in part on its openness and willingness to discuss difficult questions in public. Board members have very different views on these questions and argue freely, but respectfully, with one another. This willingness to be openly honest and direct created a

public trust in the Board. One Board member argued that there is much more to be gained by an independent open process than is lost by disagreeing openly in public.

One of the concerns raised by key informants about scoping for area wide studies, that could equally well have been raised for scoping in environmental reviews, is about the need for better integration of socioeconomic concerns, as well as human values, with the addressed biophysical impacts. The belief by too many EA review participants that panel reviews are mainly technical and do not effectively integrate this technical information with information on human values, concerns, or experiences is most unfortunate. This belief could be improved by better scoping efforts.

Conclusions and Recommendations for Further Research

The primary conclusions of this study have been reported as the basic principles of scoping practice. These principles will not be repeated here. In this section, attention will be paid to those aspects of scoping that need further study in order to improve scoping in Canadian EA reviews.

As noted earlier, scoping in EA consists, not only of determining the issues to be addressed and their importance, but also of eliminating those concerns that do not have the potential to affect decisions about the activity being reviewed. Federal EA panels still do the former much better than they do the latter. More effort is required to get panels to better focus their reviews. Peripheral issues should be eliminated from (or at least down-played in) EIS guidelines.

There are a number of new requirements under the Act that influence the application of scoping, particularly within self- assessment. These include a requirement to consider cumulative environmental effects, the formal possibility to use class screening, and new reporting requirements. While the advice on general scoping practises under the EARP found in the Initial Assessment Guide is still quite useful, new educational materials will be required.

Opportunities for scoping cumulative environmental effects issues is a topic that needs particular attention. While preliminary work commissioned by FEARO on cumulative effects has been constructive, case studies and practical advice regarding scoping for cumulative effects are still needed. An upcoming report by FEARO on cumulative effects assessment methodologies will hopefully address this topic.

The section of the Act indicating the need for a suitably broad mandate for a review has special significance. The Minister of the Environment, in consultation with the responsible authority, prepares the terms of reference for public reviews (mediations and panels). Under the EARP, FEARO has the responsibility for drafting the terms of reference. The Act does identify this as the responsibility of the Canadian Environmental Assessment Agency (the Agency). This could have the effect of putting the preparation of terms of reference outside the agency's mandate and far removed from the corporate EA knowledge that has been built up over the years. Vigilance is necessary to maintain the quality of the terms of reference so that they remain suitable for good scoping and good panel reviews.

In some provincial EA processes, the proponent is primarily responsible for scoping, while at the federal level, the Panel is responsible. When joint reviews are undertaken, there is clearly a need for harmonisation of EA processes.

One means of addressing concerns that some people have about scoping practice would be to disseminate information on scoping procedures in advance, including guiding principles.

Finally, there is a need for a better integration, in the scoping process, of information on the effects of the project on the environment, with information on the effects of such change on health and socioeconomic conditions, as required by the Act.

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Appendix 1 Methods Used to Undertake this Study

Study Approach

The first task undertaken for this study was a meeting with the study Steering Committee, consisting of representatives of Environment Canada and FEARO. Members are identified at the end of the study approach material. The Steering Committee meeting took place in Hull, Quebec on February 3, 1993. At that meeting suggestions were made about whom to contact and what area wide case studies would be most suitable. Some documentation (scoping literature and related materials) was provided and the wise suggestion was made not to try too much in a study of less than two months duration. It was agreed that the focus would be placed on scoping in panel reviews and in area wide studies, and that the Canadian Environmental Assessment Act (the Act), as opposed to the Environmental Assessment and Review Process (EARP) Guidelines Order, would be the focus of the study.

Consultation was undertaken with federal EA panel chairpersons and executive secretaries. These people have the most direct experience with scoping in panel reviews. I also relied significantly on my own panel experiences, having served on five panels and chaired one of those.

The Steering Committee identified suitable key informants for the area wide studies. I identified others through personal contacts and by consulting those suggested. In the end, the Northern River Basins Study was the primary case study used. Information was also obtained, mostly for comparative purposes, on the Red-Assiniboine Study and the Canada-Saskatchewan South Saskatchewan River Basin Study. The key informants interviewed for this study are listed at the end of this appendix.

In conducting these interviews, I attempted to obtain an understanding of the principles guiding the scoping process used in the case study being discussed the methods used in the scoping for the case study, and how successful the scoping process was. Because these questions are quite heroic, they invariably led to a prolonged discussion about scoping, the particular case study, and EA generally. Interviews were undertaken in Hull, Ottawa, Regina, Edmonton, Calgary and by phone from Calgary.

A project subjected to a joint Alberta-federal review was also selected for inclusion because it represented an EA process in which the primary responsibility for scoping lay with the proponent. The OSLO oil sands project was selected because of personal familiarity with the scoping process.

The remainder of the study approach consisted of reviewing documentation for the area wide case studies selected and interviewing key informants identified for the case studies to determine appropriate scoping principles and methods.

Scoping literature provided by Environment Canada and known to me because of my own previous work in the field was also reviewed. Based on this variety of input, a very rough draft outline was prepared and provided to the Steering Committee for comment on March 15, 1993. The final draft of this document was then prepared and submitted on March 30, 1993.

Members of the Study Steering Committee

Robert Baker (Chair)
Chief, Methods and Applications Division
Environmental Assessment Branch
Environment Canada
Place Vincent Massey, 9th Floor
Hull, Quebec

Colin Lachance (Scientific Authority)
Departmental EA Training Coordinator
Environmental Assessment Branch
Environment Canada
Place Vincent Massey, 9th Floor
Hull, Quebec

Jim Frehs
Environmental Economist
Economics and Conservation Branch
Environment Canada
Place Vincent Massey, 9th Floor
Hull, Quebec

Emily Hobby
Socio-Economic Risk Analyst
Economics and Conservation Branch
Environment Canada
Place Vincent Massey, 9th Floor
Hull, Quebec

Linda Jones
Director, Process Guidance
Policy and Regulatory Affairs
Federal Environmental Assessment Review Office
Fontaine Building, 14th Floor
Hull, Quebec

Key Informants Interviewed as Part of this Investigation

Derek Bjonback
Chief, Water Planning and Management
Inland Waters Directorate
Environment Canada
Regina, Saskatchewan

Bob Connelly
Director General, Public Review and Assessment
Federal Environmental Assessment Review Office
Hull, Quebec

Dr. Shirlev Conover
Panel Chairperson, Halifax Harbour Cleanup Panel
Federal Environmental Assessment Review Office
Hull, Quebec

Bill Gummer
Chief, Water Quality Branch
Inland Waters Directorate
Environment Canada
Regina, Saskatchewan

Irwin Huberman
Communications Director
Northern River Basins Study
Edmonton, Alberta

Dr. Alan Kennedy
Manager of Environmental Services
Imperial Oil Resources
Cold Lake, Alberta

Dr. Ellie Prepas
Professor, Department of Zoology
University of Alberta
A Member of the Science Advisory Committee
Northern River Basins Study
Edmonton, Alberta

Guy Riverin
Director, Central Region
Federal Environmental Assessment Review Office
Hull, Quebec

Dr. David Schindler
Killam Professor, Department of Zoology
University of Alberta
A Member of the Science Advisory Committee
Northern River Basins Study
Edmonton, Alberta

Paul Scott
Deputy Director
Federal Environmental Assessment Review Office
Vancouver, British Columbia

Blair Seaborn
Panel Chairperson, Radioactive Waste Management Panel
Federal Environmental Assessment Review Office
Hull, Quebec

Elizabeth Swanson
Staff Counsel, Environmental Law Centre
A Member of the Northern River Basins Study Board
Edmonton, Alberta

Dr. Ron Wallace
Hardy BBT Limited
A Member of the Northern River Basins Study Board
Calgary, Alberta