

**COMPARING THE VANCOUVER
INTERNATIONAL AIRPORT AUTHORITY'S
ENVIRONMENTAL ASSESSMENT PROCESS WITH
PROPOSED FEDERAL REGULATIONS FOR
AIRPORT AUTHORITIES UNDER THE CANADIAN
ENVIRONMENTAL ASSESSMENT ACT**

by

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ABSTRACT

One of the 2003 amendments to the Canadian Environmental Assessment Act (CEAA) enabled the federal government to pass regulations requiring prescribed authorities to conduct environmental impact assessments (EIAs) of projects carried out on federal lands. In 2005, federal legislators proposed regulations for one such prescribed authority – airport authorities. However, the Vancouver International Airport Authority (VIAA) already had its own EIA process in place. This study evaluates and compares the EIA process for the VIAA with that proposed under the CEAA to determine whether changing EIA practices at the Vancouver International Airport would improve overall environmental management. The International Association for Impact Assessment’s (IAIA) Principles for EIA Best Practice are used as a framework for the evaluation. Results indicate that the VIAA process better meets the IAIA Principles in fifteen instances. Thus, some areas of the VIAA EIA process may be diminished if the proposed CEAA regulations come into force.

Keywords: Environmental impact assessment; best practice principles; International Association for Impact Assessment; Vancouver International Airport Authority; Canadian Environmental Assessment Act

Subject Terms: Environmental impact analysis – Best practice – Law and legislation – Airports – British Columbia – Vancouver

DEDICATION

*To the memory of my grandfather, Carson “Pete” Johns,
who believed in me before I believed in myself.*

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LIST OF ACRONYMS AND ABBREVIATIONS

AEC	Approved Environmental Consultant
CEAA	Canadian Environmental Assessment Act
EIA	Environmental Impact Assessment <i>or</i> Environmental Assessment
IAIA	International Association for Impact Assessment
IAIA Principles	Principles of EIA Best Practice developed by the IAIA
VIAA	Vancouver International Airport Authority
YVR	Vancouver International Airport

1. INTRODUCTION

1.1 Background

In October of 2003, several amendments were made to the *Canadian Environmental Assessment Act* (S.C. 1992, c. 37) (CEAA). One such amendment allowed the federal government to pass regulations requiring “prescribed authorities” to conduct CEAA assessments of projects carried out on federal lands. An airport authority (AA) is one example of a prescribed authority. The federal government passed these amendments with the intention of ensuring that all appropriate projects are covered by the Act (CEA Agency 2003). In addition, the amendments are designed to ensure that environmental impact assessment (EIA) processes are consistent for all airports on federal lands in Canada (A. Murray, VIAA, pers. comm. 2005).

However, there is presently a gap in federal legislation and regulations that sometimes leaves airport authorities and other entities outside of the federal EIA process. Specifically, since regulations have yet to pass which outline an EIA system for airport authorities, such authorities are not legally bound to conduct environmental assessments of projects completed on federally-leased airport lands. All of the triggers identified in the CEAA would still require an EIA to be initiated. For example, if the Department of Fisheries and Oceans issued a license to alter fish habitat, or if Transport Canada provided financial assistance enabling a project to proceed, a federal EIA would be triggered under the CEAA. However, if a project carried out on airport lands does not necessitate granting a permit, providing financial assistance, or triggering the Act in some other fashion, no federal assessment is required (A. Murray, VIAA, pers. comm. 2008). This legislative gap will remain until federal regulations have been passed outlining requirements for completion of environmental assessments by a prescribed authority. For the purposes of this paper, I will use the abbreviation of EIA for both environmental impact assessment and environmental assessment.

The Vancouver International Airport Authority (VIAA) has had its own environmental assessment process in place since 1992 (A. Murray, VIAA, pers. comm. 2005). However, if the proposed regulations for environmental impact assessment of Canadian airports are enacted, the Vancouver International Airport Authority will be required to change its present EIA processes to match those required by the CEAA. As such, the amendments raise important questions for the Airport Authority, such as how would they need to change their current environmental impact assessment process in order to meet new federal requirements, and would this be an improvement? Furthermore, if areas can be identified in which the VIAA process is superior to that of the CEAA, the AA may be able to justify maintaining some aspects of their present system. These issues will be dealt with by meeting several research objectives.

1.2 Research Objectives

The objectives of this research are as follows:

1. Compare the current EIA process for the VIAA with the EIA process for airport authorities proposed under the CEAA and identify the significant differences.
2. Evaluate the current EIA process for the VIAA and the EIA process for airport authorities proposed under the CEAA using international standards for EIA “Best Practices,” to determine:
 - a) Which (if any) aspects of the CEAA process are better than the current VIAA process (based on international standards);
 - b) Which (if any) aspects of the current VIAA process are better than the CEAA process (based on international standards).
3. Make recommendations for improving the VIAA process.

1.3 Methods

I employed several methods in this research. First, I conducted an extensive review of various literature sources. I examined literature on evaluation techniques,

environmental impact assessments, and “Best Practice” assessment models, including those of André, Delisle and Revéret (2004), Boyd (2003), Georgison (1992), Hanna (2005), Hébert (2001), IAIA (1999), Noble (2006), Tippet (1992), Wood (2003), and Wozniak (2007).

During the literature review process, I identified the Principles of EIA Best Practice (IAIA 1999) developed by the International Association for Impact Assessment (IAIA) as the most suitable framework for comparing and evaluating the proposed EIA process under the amended federal legislation and the existing VIAA EIA process. The IAIA is an organization founded in 1980 that brings together researchers, practitioners, and users of various types of impact assessment from around the world. The IAIA consists of people from various disciplines and professions, and considers itself to be the leading global authority on best practices in the use of impact assessment (IAIA n.d.). The Principles of EIA Best Practice are comprehensive and internationally recognized, and given that the Vancouver International Airport (YVR) operates in the international realm, the use of these principles is appropriate. For convenience, I refer to these principles as the IAIA Principles.

The IAIA Principles are designed for “reference and use by those professionally involved in environmental impact assessment. [Their] aim is to promote the effective practice of environmental impact assessment consistent with the institutional and process arrangements that are in force in different countries” (IAIA 1999, 2). According to the IAIA, there are two tiers of EIA principles: basic and operating. Basic principles apply to all stages of EIA, while operating principles describe how the basic principles should be applied to the main steps and specific activities of the environmental impact assessment process (IAIA 1999). A complete list of these basic and operating principles is set out in Table 1.1.

Table 1.1 IAIA Principles of EIA Best Practice

Basic Principles – An EIA should be	
Purposive	The process should inform decision making and result in appropriate levels of environmental protection and community

	well-being.
Rigorous	The process should apply “best practicable” science, employing methodologies and techniques appropriate to address the problems being investigated.
Practical	The process should result in information and outputs which assist with problem solving and are acceptable to and able to be implemented by proponents.
Relevant	The process should provide sufficient, reliable and usable information for development planning and decision making.
Cost-effective	The process should achieve the objectives of EIA within the limits of available information, time, resources and methodology.
Efficient	The process should impose the minimum cost burdens in terms of time and finance on proponents and participants consistent with meeting accepted requirements and objectives of EIA.
Focused	The process should concentrate on significant environmental effects and key issues; i.e., the matters that need to be taken into account in making decisions.
Adaptive	The process should be adjusted to the realities, issues and circumstances of the proposals under review without compromising the integrity of the process, and be iterative, incorporating lessons learned throughout the proposal's life cycle.
Participative	The process should provide appropriate opportunities to inform and involve the interested and affected publics, and their inputs and concerns should be addressed explicitly in the documentation and decision making.
Interdisciplinary	The process should ensure that the appropriate techniques and experts in the relevant biophysical and socioeconomic disciplines are employed, including use of traditional knowledge as relevant.
Credible	The process should be carried out with professionalism, rigor, fairness, objectivity, impartiality and balance, and be subject to independent checks and verification.
Integrated	The process should address the interrelationships of social, economic and biophysical aspects.
Transparent	The process should have clear, easily understood requirements for EIA content; ensure public access to information; identify the factors that are to be taken into account in decision making; and acknowledge limitations and difficulties.
Systematic	The process should result in full consideration of all relevant information on the affected environment, of proposed alternatives and their impacts, and of the measures necessary to monitor and investigate residual effects.
Operating Principles – An EIA should be applied under certain conditions and provide for various practices as described below	
Application of EIA Process	<ul style="list-style-type: none"> • As early as possible in decision making and throughout the life cycle of the proposed activity;

	<ul style="list-style-type: none"> • To all development proposals that may cause potentially significant effects; • To biophysical impacts and relevant socioeconomic factors, including health, culture, gender, lifestyle, age, and cumulative effects consistent with the concept and principles of sustainable development; • To provide for the involvement and input of communities and industries affected by a proposal, as well as the interested public; • In accordance with internationally agreed measures and activities.
Screening	To determine whether or not a proposal should be subject to EIA and, if so, at what level of detail.
Scoping	To identify the issues and impacts that are likely to be important and to establish terms of reference for EIA.
Examination of Alternatives	To establish the preferred or most environmentally sound and benign option for achieving proposal objectives.
Impact Analysis	To identify and predict the likely environmental, social and other related effects of the proposal.
Mitigation and Impact Management	To establish the measures that are necessary to avoid, minimize or offset predicted adverse impacts and, where appropriate, to incorporate these into an environmental management plan or system.
Evaluation of Significance	To determine the relative importance and acceptability of residual impacts (i.e., impacts that cannot be mitigated).
Preparation of Environmental Impact Statement or Report	To document clearly and impartially impacts of the proposal, the proposed measures for mitigation, the significance of effects, and the concerns of the interested public and the communities affected by the proposal.
Review of the Environmental Impact Statement	To determine whether the report meets its terms of reference, provides a satisfactory assessment of the proposal(s) and contains the information required for decision making.
Decision Making	To approve or reject the proposal and to establish the terms and conditions for its implementation.
Follow-up	To ensure that the terms and condition of approval are met; to monitor the impacts of development and the effectiveness of mitigation measures; to strengthen future EIA applications and mitigation measures; and, where required, to undertake environmental audit and process evaluation to optimize environmental management.

Source: IAIA 1999

I used the IAIA Principles as an evaluation framework to examine the legislation, regulations and draft regulations for the proposed CEAA assessment process, and the

relevant VIAA documentation pertaining to environmental impact assessment. Each of the IAIA Principles is a criterion that I used to evaluate the two EIA systems. Further, each criterion provided a valuable comparison point between the VIAA and proposed CEAA EIA processes. Specifically, I developed a set of questions based on each IAIA Principle, using these questions to evaluate and compare the two EIA processes. I identified the applicable CEAA and VIAA documents for evaluation through web searches and preliminary discussions with Anne Murray, Vice President of Community and Environmental Affairs at YVR.

Following the literature review, I conducted an interview with Simon Robinson, a VIAA official in the organization's Environment Department. This interview focused on research gaps identified during the literature review. In addition, follow-up questions were submitted to Mr. Robinson to clarify any remaining information gaps.

After all data were gathered through literature reviews and the VIAA interview, I completed the evaluation of the VIAA and CEAA EIA processes. For each criterion, I first rated the VIAA process according to how well it met the criterion standards. I then compared the VIAA system and its CEAA counterpart to determine relative strengths and weaknesses. Based on these evaluations and comparisons, I developed recommendations for both processes.

1.4 Structure of the Report

This report consists of five chapters, including this introductory chapter. Chapter two examines the formation of the Vancouver International Airport Authority and how its EIA process was developed. As well, a detailed review of the VIAA EIA process is provided. Chapter three takes a similar look at the CEAA EIA process, including how it was developed, its evolution to date, and the various levels of assessment possible under the Act and proposed airport regulations. Chapter four consists of the complete evaluation of the VIAA EIA process and the comparison between the VIAA and CEAA EIA processes. Chapter five concludes the report, identifying lessons for both EIA

processes, as well as recommendations for future research. The appendices to this report include the proposed federal regulations for airport authorities, the set of questions I developed based on the IAIA Principles, and a descriptive summary of the VAA documentation assessed under each of the IAIA Principles.

2. THE VIAA ENVIRONMENTAL ASSESSMENT PROCESS

2.1 Introduction

The Vancouver International Airport (YVR) is located on federally owned land on Sea Island in the City of Richmond, British Columbia. Land uses in the airport's general vicinity include residential, industrial, commercial, agricultural and recreational. In addition, the airport is located near the Fraser River estuary and the Pacific Flyway for migratory birds. Careful environmental management is necessary for all airport operations, as the surrounding area is sensitive to ecological degradation (VIAA 1998). An aerial view of the Vancouver International Airport is provided in Figure 2.1 below.

Figure 2.1 Vancouver International Airport



Source: VIAA 2007a

YVR was operated by Transport Canada until July of 1992, when the federal government implemented a strategy to transfer the operations of airports to local authorities. As a result, the Vancouver International Airport Authority was formed and assumed management of airport operations and facilities (VIAA 1998). The VIAA is a not-for-profit, community-based organization. It is controlled by a board of directors composed of members appointed by nominating entities. These nominating entities include: the Association of Professional Engineers and Geoscientists of British Columbia; the City of Richmond; the City of Vancouver; the Government of Canada; the Greater Vancouver Regional District; the Institute of Chartered Accountants of British Columbia; the Law Society of British Columbia; and the Vancouver Board of Trade. Additional members are appointed by the board from the community at large (VIAA 2007a).

2.2 Development of the VIAA Environmental Assessment Process

Prior to the transfer of authority over YVR from Transport Canada to the VIAA, the federal government changed the legislation regulating federal environmental assessments in Canada. In June of 1992, the Canadian Environmental Assessment Act was passed to replace the federal Environmental Assessment and Review Process Guidelines Order. Although the CEAA did not come into force until January of 1995 (Hébert 2001), the implications of the new legislation had a significant effect on the environmental assessment processes developed by newly formed airport authorities.

Under the Environmental Assessment and Review Process Guidelines Order, environmental assessments were automatically triggered whenever projects were conducted on federally administered land (*Environmental Assessment and Review Process Guidelines Order*, SOR/84-467, s. 6.). However, once CEAA and associated regulations came into effect, airport authorities were no longer automatically required to conduct federal environmental impact assessments. Since the VIAA was not a federal authority under the CEAA, and no regulations had been developed designating it as a prescribed authority, EIAs became a voluntary process for the organization, except when

required because of other CEAA triggers such as when federal funds are provided to a project. Nevertheless, the Airport Authority still considered completion of environmental assessments to be a responsible business and management practice (A. Murray, VIAA, pers. comm. 2005).

The VIAA developed its own EIA process, modelled after the old Environmental Assessment and Review Process Guidelines Order, the new CEAA and regulations, and a set of voluntary standards specifically designed for airport authorities by the Canadian Airports Council. Ever since, the VIAA has been using and adapting its environmental assessment process (A. Murray, VIAA, pers. comm. 2005). Of note, the Canadian Airports Council is an amalgamated group of Canadian airport authority executives whose aim is to advocate for Canadian airports, as well as to facilitate and promote the sharing of ideas and best practices between council members (CAC n.d.).

According to the VIAA, the Airport Authority's environmental impact assessment program strives to integrate environmental management measures into the planning, design, construction and operation of all new projects (VIAA 2007a). The objective is to ensure that all potential environmental impacts are identified, avoided or mitigated (VIAA 2007a). Accordingly, whenever a new construction project is considered, the environmental assessment process is triggered upon initiation of the facility permit process (A. Murray, VIAA, pers. comm. 2005).

2.3 The Facility Permit Process

As one might expect, the facility permit process is used to review and monitor new construction activities (VIAA 2007a), and is part of the overarching VIAA *Development Rules*. Essentially, a facility permit is equivalent to a building permit. When an applicant or project proponent introduces a project to the VIAA, one of the first steps is to apply for preliminary approval. At this stage, if the Environment Department of the VIAA is of the opinion that the proposed construction activity has the potential to adversely impact the

environment, the department may deem it necessary for the applicant to hire an Approved Environmental Consultant (AEC) (VIAA 1996).

If environmental concerns are present for a given project, the AEC must conduct an EIA prior to issuance of preliminary approval. This EIA must be submitted to the Engineering Services Department of the VIAA. All preliminary approval application documents are then forwarded on to the Environment Department for review and comment. The AEC may also be required to review the design and proposed operation of the project to ensure compliance with the set of environmental standards determined by the Airport Authority (VIAA 1996).

The environmental standards are a compilation of various standards assembled by the Environment Department and Senior Management Committee of the VIAA. Some standards are specific legal requirements (i.e., federal legislation). Others are non-binding guidelines and best management practices that go well beyond legislated requirements. Provincial legislative standards are sometimes considered, but are not legally binding since airport lands are under federal jurisdiction. Also included are the VIAA-developed environmental construction standards which apply to all construction activities, including facility alterations. There is no single document that lists all of the environmental standards to which a project is subject (S. Robinson, VIAA, pers. comm. 2008).

If preliminary approval is granted, the AEC must submit Letters of Commitment and Assurance to the Engineering Services Department, as part of the application for a facility permit, which set out the AEC duties and obligations with regards to environmental matters (VIAA 1996). The actual facility permit application also includes an environmental checklist questioning what types of environmental effects may result from the proposed development (VIAA 2000). Again, the application is forwarded to the Environment Department for review and comment (VIAA 1996).

Once a facility permit has been issued and construction has commenced, the Environment Department may require the AEC to conduct field reviews as part of an

environmental monitoring program. These reviews ensure construction of the project is in compliance with the environmental standards determined by the Airport Authority. Corresponding field review reports may also be required by the Environment Department (VIAA 1996). All of the AEC services required by the VIAA are described in the organization's Scope of Environmental Services (VIAA 2004).

2.3.1 The Scope of Environmental Services

The Scope of Environmental Services acts as the terms of reference and sole scoping document for all dealings between the AEC, a project applicant, and the Environment Department of the VIAA. For projects carried out by the VIAA itself, a request is made for proposals from environmental consultants with reference to the Scope of Environmental Services. Likewise, for any project proposed by an external applicant, the project proponent is responsible for retaining an environmental consultant to conduct an EIA. Before an AEC can be approved, the consultant retained by either the VIAA or the project applicant must first meet with the Environment Department to demonstrate their experience in conducting EIAs. At this meeting, the VIAA ensures that the AEC fully understands the terms of reference document (S. Robinson, VIAA, pers. comm. 2008).

The Scope of Environmental Services and overall EIA process was developed by VIAA with assistance from an environmental consultant. It is meant to be part of a system similar to that of a screening-level CEAA process (see the description of the CEAA which follows). However, the Scope of Environmental Services is somewhat simplified to allow for flexibility and professional discretion (S. Robinson, VIAA, pers. comm. 2008). The document provides guidance on how the VIAA defines various environmental terms (i.e., environment, environmental assessment, environmental effect, mitigation), the required services of an AEC, and what must be included in an EIA report (VIAA 2004).

2.3.2 Letters of Commitment, Assurance and Compliance

The Letters of Commitment, Assurance, and Compliance provide commitments from the AEC that the project under review complies with the environmental standards. The letters are directly modelled on corresponding letters for registered professionals commonly used in municipal and other building permit processes, including building permits at the airport (S. Robinson, VIAA, pers. comm. 2008).

The Letter of Commitment identifies the Approved Environmental Consultant hired by the proponent to ensure the project meets the VIAA's environmental standards, with duties including completion of an EIA (VIAA 1999a). The proponent could be the VIAA or a tenant on airport property (S. Robinson, VIAA, pers. comm. 2008). The Letter of Assurance indicates that the EIA has been completed in compliance with the VIAA's requirements and that there are no significant adverse environmental effects that cannot be mitigated (VIAA 1999b). The Letter of Compliance is issued at the end of the construction phase and denotes that the AEC has fulfilled its obligations under the previous letters (S. Robinson, VIAA, pers. comm. 2008). Further, the letter indicates the project substantially complies with the environmental standards, and that all potentially adverse environmental effects have been mitigated (VIAA 1999c).

2.3.3 Levels of Assessment

As mentioned previously, the VIAA EIA process is designed to follow the intent of the CEAA. The Airport Authority is open to using any of the levels of assessment noted in the CEAA, but has developed no written documentation outlining the different levels of assessment possible (S. Robinson, VIAA, pers. comm. 2008). That said, projects carried out on YVR lands have almost exclusively been of a scale requiring only the EIA screening level. This is consistent with the VIAA's Scope of Environmental Services document, which was developed to be similar to that of a screening-level CEAA process (S. Robinson, VIAA, pers. comm. 2008). Furthermore, the types of projects generally evaluated by the VIAA are smaller than those evaluated by the CEAA, with many projects being of a scale normally excluded under the *Exclusion List Regulations, 2007*

(A. Murray, VIAA, pers. comm. 2008). There have not been any EIA comprehensive studies or review panel assessments conducted since the transfer of authority over YVR from Transport Canada to the VIAA, but the option for such assessments does exist (S. Robinson, VIAA, pers. comm. 2008).

When projects are introduced through the initial preliminary approval procedures, the Environment Department considers the scope of the work involved and determines whether a formal EIA is required. If Environment Department specialists determine that environmental concerns are evident for a given project, an AEC is often retained. In some cases where a minor project has the potential to result in adverse environmental impacts, the Environment Department may use its own judgment to decide whether an EIA can be completed in-house (S. Robinson, VIAA, pers. comm. 2008). In determining the level of assessment required, the Scope of Environmental Services calls for an environmental assessment “appropriate for the scale of the project” (VIAA 2004, 2). CEAA guidelines are used as a measure to determine an appropriate scale of assessment (i.e., whether to conduct an assessment at screening or comprehensive study level). An example of a CEAA guideline considered for this purpose would be the Comprehensive Study List (S. Robinson, VIAA, pers. comm. 2008).

Once the type of assessment necessary has been determined, the Environment Department consults the CEAA and its regulations to establish the level of detail required for the given assessment. The VIAA has also established the practice of using past experience to gauge the level of detail necessary in assessing a project, while trying to maintain consistency with what other airport authorities and environmental impact assessors have done. Consequently, there is some variability in how much detail is required from assessment to assessment. For instance, a larger project still within a screening-level study would require a more rigorous analysis than would a more minor project (S. Robinson, VIAA, pers. comm. 2008).

It should be noted that projects completed on YVR lands are similar to those projects completed at other major airports across Canada in terms of size and potential impacts.

Similarly, the predominance of screening-assessments is shared by all Canadian airports (S. Robinson, VIAA, pers. comm. 2008).

3. THE CEAA AND PROPOSED AIRPORT AUTHORITY REGULATIONS

3.1 Introduction

The *Canadian Environmental Assessment Act*, henceforth referred to as the CEAA or the Act, directs all EIA procedures at the federal level. The Act was developed in 1992 to replace the preceding Environmental Assessment and Review Process Guidelines Order. A replacement for the Guidelines Order was needed since the system had proven to be inconsistent and was an increasing source of controversy (Noble 2006). The failure to conduct formal impact assessments for the Oldman River Dam in Alberta and the Rafferty-Alameda Dam in Saskatchewan caused significant public discontent, with eventual court decisions finding the Environmental Assessment and Review Process Guidelines Order to be mandatory. Thus, the federal government found itself compelled to introduce the CEAA (Boyd 2003). The Act was proclaimed and came into force in 1995, along with a set of regulations governing its application (Hanna 2005).

The new Act is more rigorous and systematic than the Guidelines Order, with specific legislated responsibilities and procedures for EIA. The EIA process is to be applied as early as possible in the planning stages of a proposed project (Noble 2006), thereby helping to improve overall planning and to avoid expensive corrective action (Hanna 2005). The purposes and objectives of the Act are six-fold:

- to ensure projects are considered in a precautionary manner before proceeding;
- to encourage the promotion of sustainable development;
- to promote co-operation and co-ordination between federal and provincial governments when conducting EIAs;
- to promote co-operation and communication between federal authorities and First Nations groups;
- to ensure development on federal lands doesn't cause significant adverse environmental effects in surrounding jurisdictions; and,

- to ensure the public has an opportunity to participate in the EIA process (Noble 2006).

The CEAA requires an EIA to be conducted whenever a federal authority is involved with a project in a manner and to an extent specified in the Act. A federal authority is a ministry or agency of the federal government (Noble 2006). Once the CEAA has been triggered, a federal authority is referred to under the Act as a responsible authority (Hanna 2005). In addition, EIAs can be conducted by what is known as a prescribed authority. This is a class of authorities, separate from federal authorities, which may be required to carry out environmental assessments as per regulations specifically developed for them (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 9.1(1).). Further, these authorities are bodies which operate primarily on federal lands, but have not been classified as being federal authorities, and are not otherwise covered by comparable provisions developed for Canada Port Authorities. Airport Authorities are an example of a prescribed authority (CEA Agency 2003).

Under the Act, there are four primary stages to an EIA. These include the Act being triggered and assessment start-up; the development of the environmental assessment; the decision on whether the proposed project should be allowed to proceed; and, any post-decision activities, such as implementation and follow-up procedures (Hanna 2005).

An environmental assessment is triggered whenever a federal authority proposes a project; imparts some level of financial assistance enabling a project to be carried out; transfers the administration or control of federal lands enabling a project to proceed; or, grants specific licences or permits facilitating a project to be carried out (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 5.(1)(a-d).). In addition, an EIA may be triggered when a project is to be carried out on federal lands over which a prescribed authority has administration or management (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 9.1(2)(e).). A project is defined as a proposed physical work, and any related construction, operation, modification, decommissioning or abandonment, or a

proposed physical activity that is prescribed by regulations known as the Inclusion List Regulations (Hanna 2005).

Once an EIA has been triggered under the Act, there are four methods by which a proposed project can be assessed: screening; comprehensive study; mediation; or, panel review. Depending on the authority administering the EIA, either the responsible authority or the prescribed authority determines which of the four assessment methods should be pursued. Screenings and comprehensive studies are known as self-assessments since the responsible authority or prescribed authority determines the scope of the environmental assessment and directly manages the EIA process in compliance with the CEAA. Mediations and panel reviews are considered independent assessments, as they are conducted independently from any government agencies (Hanna 2005).

Regardless of the assessment method chosen, the central purpose is always to determine whether the project is likely to result in significant adverse environmental effects, taking into account the use of appropriate mitigation measures (André, Delisle and Revéret 2004). Further, the CEAA defines “environmental effect” to include socioeconomic, heritage and cultural effects that arise from project-caused changes to the environment (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1).). As such, the “environmental effect” definition broadens the scope of those effects considered in an EIA.

To facilitate participation in the EIA process, the federal government has created the Participant Funding Program for parties wanting to be involved in comprehensive studies, mediation, and panel review assessments (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 58.(1.1).). This program provides money to concerned citizens and non-profit organizations, enabling them to participate in the EIA process. The funds are made available to any member of the public that applies and meets the prerequisites (Hanna 2005).

3.2 Screenings and Class Screenings

Screenings are the most basic level of assessment and provide the least amount of scrutiny (Boyd 2003). Historically, the majority of environmental assessments conducted under the CEAA have been self-directed screenings (Hanna 2005). For instance, over 99.9 per cent of the twenty-five thousand federal EIAs completed between 1995 and 2000 were of the screening-level variety (Boyd 2003).

A screening assessment is a systematic approach to documenting the potential environmental effects associated with a proposed project. Screening assessments must also determine whether identified impacts need to be eliminated or mitigated; whether a project plan should be modified; and whether further assessment studies are necessary, such as mediation or a panel review (André, Delisle and Revéret 2004).

A screening must consider the potential adverse environmental effects of a project; the significance of the potential effects; the mitigation measures necessary to alleviate any adverse effects; and related public comments and concerns. Specific focus must be given to cumulative effects and the effects of possible accidents and malfunctions. Upon completion of the screening process, the responsible authority or prescribed authority must determine whether action should be taken to enable the proposed project to proceed (Hanna 2005). If potentially significant adverse effects are likely or there is significant public concern because of the potential environmental effects, a request should be made to the Minister of the Environment to refer the project to a panel review or mediation (Wood 2003).

Class screenings may be used for routine and repetitive projects where the environmental effects and mitigation measures are well known. However, it is important to take into consideration any site-specific circumstances and conditions when using a class screening report (Hanna 2005). These reports can act as a model for future projects by presenting a thorough review of the generic environmental effects of a class or type of project and identifying known mitigation measures (Wood 2003).

If the assessment of a particular project has been approved by the Canadian Environmental Assessment Agency as a class screening, the report can be used by a responsible authority or prescribed authority in conducting screenings of other projects that are in the same class (Hanna 2005). The Canadian Environmental Assessment Agency administers the CEAA and is a federal body accountable to the Minister of the Environment. Among other duties, the Canadian Environmental Assessment Agency provides EIA training and guidance, as well as administrative and advisory support for all levels of assessment (CEA Agency n.d.).

3.3 Comprehensive Studies

Some projects require a more thorough assessment, at least to the level of a comprehensive study. These projects are described in the Comprehensive Study List regulation. Examples include certain water management projects, oil and natural gas developments, and large industrial plants (Hanna 2005). Often, projects subject to comprehensive studies are large-scale, complex, and environmentally sensitive, with a greater potential for adverse environmental effects (André, Delisle and Revéret 2004). Comprehensive studies must not only consider environmental and cumulative effects of a project, but must also take into account a project's purpose, alternative means of carrying out the project, and the necessity of developing a follow-up monitoring program (Boyd 2003).

If a project is described in the Comprehensive Study List regulation, public consultation is required with respect to the proposed scope of the project, the factors proposed to be considered and the scope of those factors, as well as the ability of the comprehensive study to address the issues relating to the project. After public consultation, a responsible authority or prescribed authority must recommend to the Minister of the Environment whether the EIA should continue at the comprehensive study level or be referred to a mediator or a review panel. The final decision on referral is made by the Minister of the Environment (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 21.(1), 21.(2), 21.1(1)).

If a project is to continue at the comprehensive study level, a responsible authority or prescribed authority must submit a comprehensive study report to the Canadian Environmental Assessment Agency prior to making any final decision. The Canadian Environmental Assessment Agency then publishes a notice to the public seeking comment (Hanna 2005). Following the comment period, and taking into account the comprehensive study report and any public comments, the Minister of the Environment issues a decision statement specifying whether the proposed project is likely to result in adverse environmental effects (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 23.(1).).

Based on the Minister of the Environment's decision statement, if the project is not likely to cause significant adverse environmental effects and there is a low level of public concern, the responsible authority or prescribed authority can allow the project to proceed and ensure all mitigation measures are implemented (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 37.(1)(a).). If significant adverse environmental effects are likely to result from carrying out a proposed project and those effects cannot be justified, the responsible authority or prescribed authority must not exercise any power or perform any duty or function that would allow the project to be carried out in whole or in part (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 37.(1)(b).).

3.4 Mediation and Panel Reviews

Mediation, the first type of independent EIA, is a voluntary process of negotiation in which an independent mediator attempts to resolve differences between various interested parties (Hanna 2005). It is intended as an alternative to a CEAA panel review (Boyd 2003), but at the time of this research had never been used. After consultation with responsible authorities and various interested parties, the Minister of the Environment has the power to appoint a mediator for a given project assessment (André, Delisle and Revéret 2004). Mediation is most effective when there are only a few interested parties and issues surrounding a project, and consensus appears to be attainable. The public may

not usually have access to the mediation sessions, but the information is to be made available. The mediator can refer the EIA to the Minister of the Environment for a panel review if a resolution does not appear to be forthcoming (Hanna 2005).

The panel review is the strongest of the four assessment methods, allowing for public participation directly in the EIA process. The Minister of the Environment can only request a panel review at specific times during a screening or comprehensive study. The Minister can refer a project to a panel review following completion of a screening report, or prior to completion of a comprehensive study (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 20.(1)(c), 21.1(1)(b)). The panel review is often ordered in instances where there is significant uncertainty regarding the potential adverse environmental effects or where significant public concern is present. A panel review can only be ordered by the Minister of the Environment, but can be recommended by a responsible authority or prescribed authority (Hanna 2005).

A panel review involves the appointment of independent experts to hold public hearings and make recommendations to government (Boyd 2003). The panel members are selected from a roster of candidates established by the Minister of the Environment, and must be unbiased and free from conflicts of interest (Hanna 2005). Panel reviews have the unique ability to encourage open discussions, and allow individuals and groups the opportunity to present evidence, concerns and recommendations at public hearings (André, Delisle and Revéret 2004). Further, the panel has legislated authority to summon any person to provide evidence deemed necessary for completing the review (Hanna 2005).

3.5 Application of the Proposed Airport Authority Regulations

In October 2003, a revised and amended CEAA became law following significant public consultation. The revised Act made various commitments, one of which allowed the federal government to make regulations requiring prescribed authorities to conduct EIAs on projects carried out on federal lands as per CEAA requirements. As mentioned

previously, an airport authority is one example of a prescribed authority under the amendments to the CEAA (CEA Agency 2003). With regards to national airports, these amendments are designed to ensure EIA processes are consistent for all airports on federal lands in Canada. However, the CEAA process is not automatically triggered for all projects at YVR, since regulations which govern environmental impact assessments on federal lands controlled by airport authorities have yet to pass (A. Murray, VIAA, pers. comm. 2005).

The most recent set of draft regulations aimed at EIAs on federal airport lands was released in June of 2005. Known as the *Proposed Airport Authority Environmental Assessment Regulations*, these legislative requirements would govern projects and environmental impact assessments conducted on federal lands managed by airport authorities. Similar to the Act itself, the regulations spell out the methods for determining the scale and scope of the assessment, the factors to be considered in assessing a given project, and the procedures to follow when completing a screening, class screening, comprehensive study, or panel review. Unlike other EIAs under the current CEAA, however, the draft regulations do not include procedures for carrying out mediation assessments. Of further note, in addition to the traditional involvement of the Minister of the Environment, the Minister of Transport must also be consulted prior to making key decisions associated with an airport EIA (CEA Agency 2005a).

4. EVALUATION

4.1 Introduction

As outlined in chapter one, if the proposed new regulations governing EIA processes for airport authorities across Canada are adopted, the VIAA may have to change its current practices to comply with the CEAA. In this chapter I evaluate the existing VIAA EIA system and compare it with the proposed CEAA EIA system for airports. I use the IAIA Principles of Best Practice (IAIA Principles) described in chapter one as criteria for this evaluation. I first define each criterion, and then provide an analysis of the VIAA EIA system with respect to the criterion. The following ratings are used to indicate whether the process meets a given criterion:

- Met = no major deficiencies
- Partially met = one or two major deficiencies
- Not met = more than two major deficiencies

After rating the VIAA process for a criterion, I compare the VIAA process to the proposed CEAA process to determine relative strengths and weaknesses for that criterion.

When comparing the VIAA process to the proposed CEAA process, I made one important assumption. Since the proposed airport authority regulations have not come into effect, there are still uncertainties as to how the regulations will apply in combination with the CEAA. If a section of the CEAA refers only to “responsible” authorities, without explicit reference to “prescribed” authorities, and the section is not explicitly referred to in the proposed airport regulations, I assumed that the section would not apply to an airport authority. Section 24.(1) of the CEAA is one example of a legislated ability that applies only to a responsible authority. Specifically, a responsible authority may use previously conducted environmental assessments to whatever extent appropriate when conducting a comprehensive study (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 24.(1)). However, there is no such documented ability written in the proposed regulations for airport authorities. As such, I assume that a prescribed authority does not have the authority to use assessments that have been previously completed.

Another issue I encountered in conducting this evaluation is that for some aspects of its EIA process the VIAA relies on informal practices rather than formally documented policies. Depending on the nature of a particular criterion I made a judgement call as to whether or not having informal practices would satisfy the requirements of the criterion. For some criteria it is more important to have formally documented policies, while for others the use of informal practices may be sufficient. I justify my reasoning for each of these decisions.

4.2 Basic Principles

The IAIA basic principles should be applied at all stages of an EIA as a single package, recognizing that the principles are interdependent. A balanced approach is essential when applying the principles to ensure that an EIA fulfills its ultimate purpose and objectives, thereby producing both comprehensive analyses and the ability to reconcile competing principles (IAIA 1999).

4.2.1 Purposive

The process should inform decision making and result in appropriate levels of environmental protection and community well-being.

The VIAA process has several means in which decision making is informed by an EIA. As mentioned in chapter two, prior to any decision on whether a proposed project should receive preliminary approval for a facility permit that would enable construction to proceed, the project proponent may be required by the VIAA Environment Department to hire an AEC to complete an environmental assessment (VIAA 1996). The Environment Department uses professional judgement and considers the scope of the work involved in the project proposal to decide whether an AEC is required. For an AEC to be employed, it should be a qualified registered professional in a field related to EIA, and should have experience in completing impact assessments (S. Robinson, VIAA, pers.

comm. 2008). As such, the professional training and qualifications of an AEC contribute to the completion of an EIA having appropriate levels of protection.

Throughout the EIA process and subsequent report, several factors must be considered by the AEC, including comments from the public (VIAA 2004). As such, the EIA report and factors considered would be used in informing a decision by the AEC about whether the project is likely to cause significant adverse environmental effects. Further, consideration of public comments helps to ensure the environment and community well-being are being protected appropriately.

The AEC is also responsible for identifying and making recommendations “with respect to any new research, technology or standards pertaining to the project” (VIAA 2004, 3). Any new information revealed by the AEC is likely to inform decisions as well. Of note, the VIAA process does not specifically document how information is to be used when making decisions, but the use of such information appears to be implied by its inclusion in EIA reports completed by the AEC and provided to the Environment Department.

Another measure adopted by the VIAA to ensure environment and community well-being is protected at an appropriate level is that representatives from the Environment Department will sometimes meet with a project proponent and its AEC to discuss the Scope of Environmental Services and its particular application to the project (VIAA 2004). Professional judgement is used to decide whether this type of scoping meeting is necessary, with the idea being to keep the EIA process from becoming redundant. If a project is of a type that the VIAA has seen before, and with which the AEC is familiar, then a meeting isn't necessary. If the proposed project introduces new stakeholders, issues and possible effects, then a scoping meeting is necessary (S. Robinson, VIAA, pers. comm. 2008). When this meeting is held, projects that pose a greater level of uncertainty can be handled on an individual level, thereby allowing for an EIA to be tailored to the specific needs of a given project.

The Scope of Environmental Services also provides comprehensive definitions for “environment”, “environmental assessment”, “environmental effect”, and “mitigation”. These definitions, listed in Table 4.1, identify what aspects of the physical environment must be considered in an EIA, as well as requiring consideration of effects on community well-being which result from project-caused changes to the environment (VIAA 2004). Defining these terms ensures that the AEC is aware of the specific physical and cultural aspects the Airport Authority deems significant. Consequently, the interpretation of these terms helps to inform decisions in an appropriate manner.

Table 4.1 The VIAA EIA Process Definitions

Term	Definition
Environment	<p>“Environment” means the components of the Earth, and includes:</p> <ul style="list-style-type: none"> a. land, water and air, including all layers of the atmosphere; b. all organic and inorganic matter and living organisms; and c. the interacting natural systems that include components referred to in paragraphs a) and b)
Environmental Assessment	<p>“Environmental Assessment” means, in respect of a project, an assessment of the environmental effects of the Project</p>
Environmental Effect	<p>“Environmental Effect” means, in respect of a project:</p> <ul style="list-style-type: none"> a. any changes that the project may cause in the environment, including any effect of any such change on health and socioeconomic conditions, on physical and cultural heritage, on the current use of lands and resources for traditional purposes by aboriginal persons, or on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance; and b. any change of the project that may be caused by the environment
Mitigation	<p>“Mitigation” means, in respect of a project, the elimination, reduction or control of the adverse environmental effects of the Project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means</p>

One of the factors that must be considered when conducting an EIA under the VIAA process is whether the project will comply with the environmental standards (VIAA 2004). An AEC must ensure that a proposed project complies with all standards that are legally binding (i.e., federally legislated standards). Of course, a proposed project is not bound by provincial standards since YVR operates on federal lands. Hence, a project can be carried out without achieving compliance with non-binding standards, but the AEC would need to adequately justify to the Environment Department this failure to comply. The Environment Department specialists then use their professional judgement in determining whether the project may proceed (S. Robinson, VIAA, pers. comm. 2008). Thus, the combination of requiring compliance with legally-binding environmental standards and using professional discretion in cases of non-compliance with non-binding standards helps to ensure that environment and community well-being is protected at an appropriate level.

Following issuance of a facility permit, a project is still subject to follow-up programs. For instance, periodic field reviews are sometimes required during construction to ensure mitigation measures are properly implemented and the environmental standards are being met (VIAA 2004). Field reviews are necessary for projects that are particularly complex and possess an element of risk. Further, the frequency of field reviews conducted is determined on a project-by-project basis depending on the scope of the project (S. Robinson, VIAA, pers. comm. 2008).

When an environmental risk, incident or emergency occurs during construction, the project proponent and the AEC must ensure that any environmental effect is mitigated (VIAA 2004). Both the field reviews and proponent actions following an environmental incident help to ensure the environment and community well-being are being protected at an appropriate level.

Overall, the principal requirements of being purposive are met. The VIAA environmental assessment process informs decision making through the development of a comprehensive EIA report and requisite consideration of new research and standards.

Further, the EIA process ensures environment and community well-being are being protected appropriately by holding meetings between instrumental parties to discuss scoping, developing comprehensive definitions, compiling applicable environmental standards, and creating follow-up programs.

Comparison to the CEAA

The CEAA and proposed regulations also have many measures aimed at ensuring the environmental assessment process is purposive. The Act includes definitions for “environment”, “environmental assessment”, “environmental effect”, and “mitigation” that are nearly identical to those listed in VIAA policy documents (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1).), similarly providing the context in which the terms are used to make decisions. These CEAA definitions are listed below in Table 4.2.

Table 4.2 The CEAA EIA Process Definitions

Term	Definition
Environment	<p>“Environment” means the components of the Earth, and includes</p> <ul style="list-style-type: none"> a) land, water and air, including all layers of the atmosphere, b) all organic and inorganic matter and living organisms, and c) the interacting natural systems that include components referred to in paragraphs (a) and (b)
Environmental Assessment	<p>“Environmental Assessment” means, in respect of a project, an assessment of the environmental effects of the project that is conducted in accordance with this Act and the regulations</p>
Environmental Effect	<p>“Environmental Effect” means, in respect of a project,</p> <ul style="list-style-type: none"> a) any change that the project may cause in the environment, including any change it may cause to a listed wildlife species, its critical habitat or the residences of individuals of that species, as those terms are defined in subsection 2(1) of the Species at Risk Act, b) any effect of any change referred to in paragraph (a) on

<ul style="list-style-type: none"> i) health and socioeconomic conditions, ii) physical and cultural heritage, iii) the current use of lands and resources for traditional purposes by aboriginal persons, or iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, or 	<ul style="list-style-type: none"> c) any change to the project that may be caused by the environment,
whether any such change or effect occurs within or outside Canada	

Mitigation	“Mitigation” means, in respect of a project, the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means
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The draft airport authority regulations also have explicit requirements for the prescribed authority to consider EIA reports and various factors when making decisions in screening, comprehensive study, and panel review project assessments. Furthermore, when necessary, the prescribed authority must develop a follow-up program to ensure mitigation measures are effective and the environment is not adversely impacted (CEA Agency 2005a).

A key difference between the CEAA and the VIAA EIA processes is that the VIAA process has documented measures to allow a project proponent, its AEC and the Airport Authority to meet and discuss the specific application of the Scope of Environmental Services to a particular project. As such, an assessment can be tailored to meet the individual needs of a project, thereby better informing decisions. The CEAA process has no such measures formally in place.

Instead of requiring compliance with a prescribed set of environmental standards, the Minister of the Environment can “issue guidelines and codes of practice respecting the application of [the] Act and the regulations and ... establish criteria to determine whether a project ... is likely to cause significant adverse environmental effects or whether such effects are justified in the circumstances” (*Canadian Environmental Assessment Act*, S.C.

1992, c. 37, s. 58.(1)(a).). Already, there are a significant number of guidance documents to aid prescribed and responsible authorities in conducting EIAs. These documents are part of the overall CEAA EIA process, and thus, their use informs decision making practices. Further, the guidance documents are an effective tool in establishing how to appropriately protect the environment and community well-being. Their inclusion in the CEAA EIA process is an important improvement on that of the VIAA, since they provide documented instruction and procedures for evaluating a proposed project.

There are several other aspects to the CEAA system that are indicative of a purposive process and are not part of the VIAA EIA process. Some of these additional measures include the required application of the precautionary principle by any body administering an EIA under the Act (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 4.(2).), documented requirements allowing for the possibility of public participation throughout all levels of an impact assessment, and requiring public participation for a comprehensive study or panel review (CEA Agency 2005a), specific obligations to provide EIA information for the purpose of quality assurance (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 56.1.), and prescribed measures to identify the level of assessment required (CEA Agency 2005a).

In addition, the role of the Canadian Environmental Assessment Agency to provide training and other aid to federal EIA practitioners is a valuable means to improve their impact assessments (CEA Agency n.d.). These documented elements of the CEAA EIA process are all measures that further inform decisions and enhance the level of protection for environmental and community well-being. Thus, although the VIAA EIA system meets the general requirements of being purposive, its CEAA counterpart has more documented and prescriptive measures that address the essence of these requirements.

4.2.2 Rigorous

The process should apply “best practicable” science, employing methodologies and techniques appropriate to address the problems being investigated.

As part of the Scope of Environmental Services, the VIAA requires an AEC to conduct the EIA of a project at a level of assessment appropriate for the scale of the project (VIAA 2004). Consequently, an AEC is required to use the science, methodologies and techniques that best suit a given project. This aspect of the VIAA EIA process enables the AEC to use professional discretion when determining what science, methods, and techniques are most appropriate for a given project. Further, the AEC may act as a coordinating professional by recruiting other experts to do field work or provide specialist information. The VIAA expects and requires an AEC to enlist these experts when appropriate to the scale and complexity of a proposed project (A. Murray, VIAA, pers. comm. 2008). Upon review of an EIA report, the Airport Authority may also use its own judgement in determining whether the science, methodologies, and techniques applied were adequate.

In addition, the EIA report must consider mitigation measures that are technically and economically feasible (VIAA 2004). By implementing technically and economically feasible methods of mitigation, an AEC helps to ensure the application of best practicable science to address any environmental issues posed by a proposed project. Again, the Airport Authority has the opportunity to review the mitigation measures chosen by an AEC before a facility permit is granted. This extra level of oversight helps to ensure that the best science is used.

Throughout the EIA process, an AEC must identify and make recommendations pertaining to new research, technology or standards (VIAA 2004). The use of new information enables the EIA process to use the science, methodologies, and techniques that are appropriate for the specific environmental issues associated with each individual project.

By requiring the level of assessment to be appropriate for the scale of the project, recruiting experts from various disciplines when necessary, ensuring implementation of adequate mitigation measures, and identifying new research, technology and standards, the VIAA EIA process addresses all of the necessary features of this principle.

Comparison to the CEAA

There are key differences between the VIAA process and the proposed CEAA process for this principle. First, the VIAA process requires that the level of assessment for a given project is appropriate for the scale of the project, but the CEAA EIA process does not have any such express provision. As such, the VIAA process may be better equipped to employ the “best practicable” science, methods and techniques that are most appropriate for dealing with the problems associated with individual project assessments.

Nevertheless, the CEAA process has other documented measures enabling the use of best science. When necessary, the Minister of the Environment has the power to establish research and advisory bodies to facilitate environmental assessments (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 58.(1)(b).). Such bodies could help to identify what is the “best practicable” science, and which methodologies and techniques should be employed. However, these research and advisory bodies are discretionary, and not necessarily established for environmental assessments of all proposed projects.

For a project that includes participation from authorities in addition to a prescribed authority, a federal environmental assessment coordinator has the role of identifying and coordinating the involvement of those parties “in possession of specialist or expert information or knowledge with respect to the project” (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 12.2(a).). The involvement of such parties may be another means of identifying the “best practicable” science, and which methodologies and techniques should be employed.

Although these CEAA policies imply that expert information and knowledge specific to a proposed project may be used to identify the “best practicable” science, the Act and its proposed regulations do not have prescribed means of ensuring the science, methods and techniques employed are appropriate for a project. Furthermore, critics of the CEAA argue that the federal assessment process has sometimes failed to use the best available science (e.g., Nikiforuk 1997, Lynch-Stewart and Borg 2002). According to these critics, assessments are not always bound by clear standards and criteria, resulting in lengthy reports having little focus. As such, some past assessments have hidden unbalanced science with significant data deficiencies in these lengthy documents.

If the proposed regulations are to come into effect, it would be unfair to assume the VIAA would apply the CEAA process without continuing to emphasize the use of best science. That said, it is important to recognize that there has been concern regarding the science used in previous applications of the CEAA.

4.2.3 Practical

The process should result in information and outputs which assist with problem solving and are acceptable to and able to be implemented by proponents.

The VIAA environmental assessment process employs various methods to solve problems. Here, problem solving refers to problems associated with a given project (i.e., the potential environmental effects of a proposed project). For instance, the purpose of requiring a project proponent to hire an AEC is to assure the VIAA that all aspects of the project are in compliance with the environmental standards, all mitigation measures are implemented and that they are effective in eliminating all significant adverse environmental effects (VIAA 2004). These requirements are partially addressed through the completion of an EIA report. Additional measures in the Scope of Environmental Services compel the use of technically and economically feasible mitigation methods (VIAA 2004). Requiring an EIA report to be completed, environmental standards to be met and mitigation measures to be effective are examples of EIA process information and

outputs that help in alleviating adverse environmental effects, thereby assisting problem solving.

Since the information and outputs of an EIA process are submitted by the proponent through the AEC, and are often developed in communication with the proponent, it is the responsibility of the AEC and the proponent to ensure such outputs are usable and can be implemented. The VIAA does not attempt to directly prescribe how work is to be done. Instead, the Airport Authority requires the proponent to establish how it wants to develop, and then determines whether the development plan is a reasonable approach considering the results of an AEC-conducted environmental assessment (S. Robinson, VIAA, pers. comm. 2008). Having information and outputs developed in communication with the project proponent ensures that any actions taken to assist in problem solving are acceptable to and able to be implemented by the proponent.

By requiring an EIA report to assure environmental standards are met, ensuring mitigation measures are implemented and effective, and relying on project proponents and their AEC to develop acceptable and implementable methods of problem solving, the VIAA EIA process adequately addresses the needs of a practical environmental assessment system. Thus, the Airport Authority's EIA process has met the basic requirements of being practical.

Comparison to the CEAA

The CEAA EIA process is similar in many ways to that employed by the VIAA. For instance, the CEAA calls for preparation of an EIA report, no matter what level of assessment is triggered (CEA Agency 2005a). The recommendations from such reports can be considered as outputs that assist with problem solving. As with the VIAA process, the draft regulations for airport authorities under the CEAA also require consideration of “technically and economically feasible measures that would mitigate any significant adverse environmental effects of the project” (CEA Agency 2005a, 2). Having measures

that are both technically and economically feasible helps to ensure methods of problem solving are acceptable to and able to be implemented by project proponents.

However, consideration of such mitigation measures appears to be the only explicit means of ensuring EIA process outputs are acceptable and implementable to proponents. Thus, the VIAA process' use of an AEC to ensure EIA information and outputs are satisfactory to project proponents indicates that the Airport Authority system better accommodates the requirements of being practical.

4.2.4 Relevant

The process should provide sufficient, reliable and usable information for development planning and decision making.

In undertaking an EIA of a given project at YVR, an AEC must identify the “potential effects associated with the design, construction, and operation of the project on the environment, ... define measures to mitigate these effects, and ... assess whether the project will comply with the environmental standards” (VIAA 2004, 2). In addition, the AEC must complete an EIA report that considers the environmental effects of the project, including those that are cumulative or are caused by accidents or malfunctions, the significance of those effects, technically and economically feasible mitigation measures, and any other relevant matter, such as public comments and the overall need for the project (VIAA 2004). All of these necessary actions, especially the factors to be considered in an EIA report, help to satisfy the requirement of having sufficient information for development planning and decision making. Specifically, the inclusion of a blanket statement that says “any other relevant matter” signifies that any aspect of a project that justifies additional investigation should be considered in the EIA report.

The VIAA EIA process does not have any documented policies ensuring reliable and usable information is provided to aid in development planning and decision making. However, when making the final decision on whether project development should

proceed, the Environment Department cannot approve the development until it has been approved by the AEC by way of an EIA. As such, the Environment Department would consider the EIA outputs, and use professional judgement in determining whether to issue a Letter of Assurance (S. Robinson, VIAA, pers. comm. 2008). This ad-hoc process whereby the VIAA uses professional judgment to assess whether a project should proceed signifies that the process must provide reliable and usable information when making decisions. If the Environment Department did not think that the information was reliable or usable, it would not issue a Letter of Assurance, thus preventing development from proceeding.

The use of an AEC also helps to ensure that sufficient, reliable and usable information is employed, since the AEC must be approved by the VIAA. There are no documented policies for what qualifications an AEC must possess, but the Environment Department accepts only qualified registered professionals in a field related to environmental assessment. The potential AEC must have an understanding of how the VIAA EIA process works, have demonstrated previous experience in conducting environmental assessments, and have membership with a recognized professional organization that has a code of conduct or ethics, such as a biologist, engineer, geoscientist or planner. There have been cases when an AEC is not a member of a professional organization, but has demonstrated a high level of experience (S. Robinson, VIAA, pers. comm. 2008).

The VIAA EIA process also addresses the requirement of being relevant in practice, through the hiring of a qualified AEC who must complete a thorough environmental assessment considering various factors, and the process whereby the Environment Department reviews an EIA prior to issuance of a Letter of Assurance. However, one major deficiency is that there are no documented policies that set out the specific information to be provided by the EIA process. Further, the VIAA has no documented list of criteria for assessing the qualifications of an AEC.

Documentation is a critical aspect in ensuring the effectiveness of environmental management processes. Scarce documentation of EIA procedures can make impact identification and assessment processes inconsistent and person-dependent, thereby undermining the credibility of an EIA. Furthermore, insufficient documentation highlights a lack of transparency and stringency in the assessment process, thus inhibiting reproducibility and overall efficiency (Zobel et al. 2002). By developing written procedures and guidance materials, an environmental assessment process can be completed in a more orderly and structured way, efficiently using time, money and other resources. Systemizing an EIA process ensures that nothing important is left out and that all parties have a clear understanding of roles and responsibilities (ISO n.d.).

By failing to document a comprehensive set of policies governing the overall VIAA EIA process, the Airport Authority has not succeeded in developing adequate institutional memory. If, and when, there are personnel changes in the Environment Department, the Airport Authority may not be adequately prepared to make appropriate decisions concerning potential development. It is not enough to rely primarily on informal practices. Documented policies and procedures are the only way of ensuring institutional memory is present. Thus, the VIAA EIA process has only partially met the basic requirements of being relevant.

Comparison to the CEAA

The CEAA and draft regulations also have measures to ensure that environmental assessments are relevant. The Act gives the Minister of the Environment the power to establish research and advisory bodies, when necessary, to aid in the collection and analysis of information (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 58.(1)(b).). The Minister of the Environment may also enter into agreements and arrangements with other jurisdictions, when appropriate (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 58.(1)(d).). Such agreements and arrangements would be valuable tools in exchanging information to ensure the information used in planning and decision making is sufficient, reliable and usable. However, these tools available to

the Minister of the Environment are only employed under certain conditions, and would not apply to all projects undergoing an EIA.

Similar to the VIAA process, the CEAA proposed regulations have several factors that require consideration when conducting an EIA. At a minimum, all assessments must consider the environmental effects of a project; the significance of those effects; public comments; technically and economically feasible mitigation measures; and any other relevant matter. Further, all assessments may consider community and aboriginal traditional knowledge, as well as the effects of possible future projects that may influence the proposed project. Comprehensive studies and review panels are additionally required to consider alternative means of carrying out the project; the need for and requirements of a follow-up program; and, the capacity of renewable resources likely to be significantly affected by the project to meet the needs of present and future. Comprehensive studies also must consider the purpose of the project (CEA Agency 2005a). As with the VIAA process, these factors to be considered help to satisfy the requirements of having sufficient information for development planning and decision making.

For projects subject to a class screening assessment, adjustments to the report must be made to account for local circumstances and any cumulative effects that may result from the project in combination with other projects or activities that have been or will be carried out (CEA Agency 2005a). As such, any adjustments made would help to address a need for sufficient information for development planning and decision making. However, there are not any explicit measures to ensure the use of sufficient, reliable and usable information in planning and decision making processes within the construct of a traditional screening-level assessment.

When a project is subject to a comprehensive study assessment, an airport authority is to report to the Minister of Transport (who then reports to the Minister of the Environment) with respect to the project scope, the factors to be considered and the scope of those factors, public concerns, the potential for the project to cause adverse environmental effects, and the ability of a comprehensive study to address the project

issues once there is sufficient information to do so (CEA Agency 2005a). This requirement is the only explicit description in the proposed regulations of what will be considered sufficient EIA information for decision making. Unfortunately, the requirement is only relevant to assessments at the comprehensive study level.

In cases where additional information is necessary during a comprehensive study assessment, the Minister of the Environment shall request that the airport authority or project proponent ensure the required information is provided before issuing an environmental assessment decision statement (CEA Agency 2005a). This proposed measure would be another means to ensure that there is sufficient information before making a decision, but again, this measure is only relevant to comprehensive study assessments.

When projects are referred to a panel review, the Minister of the Environment appoints members of the panel who “are unbiased and free from any conflict of interest relative to the project and who have knowledge or experience relevant to the anticipated environmental effects of the project” (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 33.(1)(a).). By appointing unbiased experts in relevant fields to the review panel, the CEAA EIA process depends on the panel to collect all sufficient, reliable and usable information in order to make educated decisions.

Of particular note, the proposed regulations appear to provide a means by which the VIAA could maintain use of an AEC. Specifically, an airport authority would be able to request that any person or body carry out any part of the screening or comprehensive study of a project, including preparation of a report and follow-up program (CEA Agency 2005a). Thus, under CEAA the VIAA would be able to make a request enabling a qualified professional to conduct the assessment.

Although the process differs in that an airport authority would have to request that a person or body complete the assessment instead of making such a determination on its own, this CEAA measure would allow the VIAA to make use of one of the best aspects

in its own EIA process – the use of an AEC. However, as with the VIAA process, the CEAA process has a major deficiency in that it does not document a set of criteria to determine the acceptability of a person or body that may conduct an EIA. This is a significant fault in both processes, since the field of environmental assessment has been criticized for providing assessments that side with those paying the fees, the project proponents (Nikiforuk 1997).

Overall, the Act and proposed regulations employ different methods for ensuring the use of sufficient information for each type of assessment. The Minister of the Environment’s ability to establish research and advisory bodies and enter into agreements and arrangements with other jurisdictions helps to meet the need for information to be reliable and usable, but not all projects are subject to these discretionary measures. The level of assessment at which information is most likely be reliable and usable is when a panel review is triggered.

Since most assessments conducted at airports are of a screening-level variety, there is a need for the CEAA to adapt its EIA process to ensure all levels of assessment have measures to ensure reliable and usable information. Nevertheless, for airport authorities, the inclusion in the proposed regulations of the possibility of hiring outside parties to conduct an EIA would allow for the employ of an AEC, thereby continuing the process established by the VIAA to develop sufficient, reliable and usable information. Since the CEAA EIA process has specific measures to address the information necessary for development planning and decision making for each of the types of assessment, and also has provisions that would allow an airport authority to use of an AEC, I consider the proposed CEAA process to be stronger than its VIAA counterpart for this principle.

4.2.5 Cost-effective

The process should achieve the objectives of EIA within the limits of available information, time, resources and methodology.

There is no VIAA documentation or guidance to aid in specifically establishing the limits of available information, time, resources and methodology. In practice, these variables are often determined through discussions between the proponent and the AEC on a project-by-project basis (S. Robinson, VIAA, pers. comm. 2008). The Scope of Environmental Services calls for a level of assessment that is appropriate for the scale of the project (VIAA 2004), which implies that limits will be appropriate for the EIA being conducted.

Initially, the AEC makes the decision on the level of information necessary for an EIA. If the VIAA is of the opinion that information is lacking after submission of the draft EIA report, it can request that additional detail be provided. With regards to limits of time, there are prescribed response timelines in the Facility Permit process for the VIAA when handling project proposals. Responses must be provided within two weeks, but the Environment Department often requests further information. In such cases, the project proponent has no specific time limits in which it must submit the additional information, but it is in their own interests to receive environmental approval as quickly as possible (S. Robinson, VIAA, pers. comm. 2008).

Financial resource limits are at the discretion of the proponent. Yet, regardless of the financial costs, the proponent must ensure significant impacts are mitigated to the satisfaction of the VIAA (S. Robinson, VIAA, pers. comm. 2008). The Scope of Environmental Services does call for an EIA report to consider mitigation measures that are technically and economically feasible (VIAA 2004), but as with other variable limits, the extent of economic feasibility is determined by the proponent and its AEC subject to review by the VIAA (S. Robinson, VIAA, pers. comm. 2008).

Typically, the AEC first proposes a range of mitigation measures to the project proponent. If the proponent deems that one or more of the recommended mitigation measures is not economically feasible, negotiations between the AEC, proponent and VIAA are held focusing on finding alternatives or revising project design to improve economic feasibility, while still mitigating any adverse impacts. A great amount of professional judgement is required when holding negotiations of this nature. Similarly, the other resources, methods and techniques employed in an EIA are initially proposed by the AEC, but can be further negotiated with the proponent and VIAA if necessary (S. Robinson, VIAA, pers. comm. 2008).

Although the VIAA does not have prescriptive requirements for determining the levels of information, time, resources and methods employed, in practice, the organization relies on the project proponent and its AEC to establish these levels. As such, the EIA process does achieve its objectives within the limits set by the project proponent. In terms of institutional memory, the VIAA EIA process could benefit from including some sort of procedural guidelines for ascertaining the limits of information, time, resources and methodology, but overall, the absence of documented guidelines is only a minor deficiency since the responsibility to determine the indicators of cost-effectiveness lies with the project proponent and is subject to review and approval by the VIAA. Thus, the airport's environmental assessment process has met the requirements of being cost-effective by putting the onus on proponents to determine their own limits while still meeting EIA objectives.

Comparison to the CEAA

In comparison, the CEAA process is primarily focused on ensuring EIA objectives are met within prescribed time limits. For instance, when authorities additional to a prescribed authority are involved in a proposed project, a federal environmental assessment coordinator may establish time lines in relation to an assessment so as to ensure EIA obligations are fulfilled in a timely manner (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 12.2.(d), 12.3.(b).). In addition, the Governor in

Council may make regulations pertaining to the time limits for environmental assessments and follow-up programs (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 59.(a).) Time constraints are also evident in regards to the Canadian Environmental Assessment Registry. Specifically, this registry is aimed at facilitating public access to EIA records and providing notice of assessments in a timely manner (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 55.(1)). Public comment periods extend for 15 days for a screening assessment, and 30 days for comprehensive studies (CEA Agency 2005a).

The only explicit CEAA measures aimed at ensuring EIA objectives are met within limits of information, resources and methodology are in regards to the consideration of mitigation measures. For example, the proposed regulations require an EIA of a project to consider technically and economically feasible measures to mitigate significant adverse environmental effects of a project (CEA Agency 2005a). This is a measure shared with the VIAA process. However, unlike the VIAA process which depends on the proponent and AEC to determine what is feasible, the CEAA process does not have formal or informal measures to determine technical and economic feasibility.

Thus, the CEAA process has no explicit measures to specifically identify the limits of available information, resources and methodology in which EIA objectives should be met. Consequently, the VIAA process is superior to its CEAA counterpart for this principle.

4.2.6 Efficient

The process should impose the minimum cost burdens in terms of time and finance on proponents and participants consistent with meeting accepted requirements and objectives of EIA.

Similar to being cost-effective, the VIAA EIA process has no specific measures ensuring an environmental assessment imposes the minimum cost burden on proponents

and participants in terms of time and finance. Again, the Airport Authority relies on the AEC and project proponent to determine the level of financial and time commitment required when conducting an EIA, while still assuring that all adverse environmental impacts are adequately mitigated (S. Robinson, VIAA, pers. comm. 2008). Essentially, the minimum time and financial costs are established by the project proponent and its AEC, so long as they ensure the appropriate mitigation of any environmental effect to the satisfaction of the VIAA.

Further, the Scope of Environmental Services calls for an assessment level to correlate with the scale of a project (VIAA 2004). Adjusting the scale of the assessment to the scale of each individual project helps to minimize the financial and chronological burden on proponents and participants. Section 4.2.5 alludes to specific time constraints on the role played by the VIAA, but these timelines only address the maximum time allowed for response (S. Robinson, VIAA, pers. comm. 2008), not the need for a minimum time burden. In addition, the VIAA EIA process does not impose a minimum burden of time or finance on any participant other than the Airport Authority, a project proponent, and its AEC.

The absence of any specific constraints that would limit the cost burden for third-party participants (i.e., participants other than the project proponent, the AEC and the VIAA) is a major deficiency in the Airport Authority's assessment system. Specifically, there should be financial and chronological constraints that govern the involvement of these third-party participants in an EIA. Although the VIAA relies on the AEC and proponent to establish the minimum cost burden of an EIA on themselves, there should still be documented measures outlining the minimum burden on all active participants, including those third-party groups interested in becoming involved. Without such measures, and in the absence of documentation to support the establishment of minimum cost burdens, the VIAA EIA process has only partially met the efficiency principle.

Comparison to the CEAA

The CEAA process differs from its VIAA counterpart in several ways. First, as noted with cost-effectiveness, when authorities additional to a prescribed authority are involved in a proposed project, a federal environmental assessment coordinator may establish time lines in relation to an assessment (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 12.3(b)). In addition, the Governor in Council may make regulations that set time limits for environmental assessments and follow-up programs (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 59.(a)). The Canadian Environmental Assessment Registry is also aimed at facilitating public access to EIA records and providing notice of assessments in a timely manner (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 55.(1)). All of these measures are means of limiting the time burden on proponents and participants consistent with meeting EIA objectives and requirements.

Consideration of mitigation measures is the only legislated CEAA measure to explicitly ensure EIA objectives and requirements are met within a minimum financial burden on participants. There are no other sections that specifically address financial burdens on a participant. In regards to mitigation, the proposed regulations require an EIA of a project to consider technically and economically feasible measures to mitigate significant adverse environmental effects of a project (CEA Agency 2005a). This is a measure shared with the VIAA process, but as noted previously, the CEAA system does not specify any means of determining technical and economic feasibility. As such, it is not evident how the minimum financial burden on participants is determined in regards to mitigation.

As noted in section 3.1, the CEAA Participant Funding Program enables parties to receive financial assistance when involved in comprehensive studies and panel review assessments (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 58.(1.1)). As such, the CEAA EIA process has an effective means to reduce the financial burden on assessment participants other than the project proponent.

4.2.7 Focused

The process should concentrate on significant environmental effects and key issues; i.e., the matters that need to be taken into account in making decisions.

When completion of an EIA is necessary, the project proponent must hire an AEC for the purpose of assuring the Airport Authority that the design, construction and operation of the project has no significant adverse environmental impacts, and is in compliance with the environmental standards (VIAA 2004). The environmental standards are the sole documented measures used to determine whether the impacts of a project are significant (S. Robinson, VIAA, pers. comm. 2008). By requiring a project to meet the Airport Authority's compiled environmental standards, the VIAA EIA system helps to focus the assessment scope on the significant environmental effects requiring consideration in decision making processes.

Defining the terms "environment", "environmental assessment", "environmental effect" and "mitigation" aids in identifying what aspects of the physical environment must be considered in an EIA, as well as ensuring consideration of various social and cultural effects that may result from project-caused changes to the environment. Hence, the definitions help to ensure the EIA scope focuses on significant environmental effects and key issues. However, some key issues may be ignored since social and cultural effects not specifically related to changes in the environment are not considered within the EIA process (VIAA 2004). The VIAA does assess some social effects that result from airport operations, such as impacts of aircraft noise on the surrounding community, but these activities are not specifically tied to the EIA program (A. Murray, VIAA, pers. comm. 2008).

To determine which environmental effects and key issues may be important, a meeting may be required between the Environment Department, the AEC, and project proponent to discuss the Scope of Environmental Services (VIAA 2004). Such a meeting may help in determining which environmental effects and key issues are significant enough to be considered in an environmental assessment. In addition, once an EIA has

been initiated, an AEC has the role of identifying potential environmental effects that may occur at any stage of the project, determining the significance of those effects with aid from the environmental standards, and establishing the mitigation measures necessary to eliminate the effects, all while considering any relevant comments received from the public (VIAA 2004).

In practice, a good measure of professional judgement is used to gauge significance, since the environmental standards are not overly detailed and prescriptive. Furthermore, if a proposed project is similar in nature to a previously assessed project, the Environment Department may suggest the AEC use the previous assessment as a precedent in determining an appropriate focus (S. Robinson, VIAA, pers. comm. 2008). By using previous assessments, as well as considering effects, significance, mitigation methods and public comments, the AEC helps to ensure the assessment scope concentrates on those impacts and key issues that are important.

There is also an Environmental Advisory Committee that meets quarterly to hold open discussions with all stakeholders about the environmental aspects of operations and developments (VIAA 1998). This committee has representatives from community and environmental groups, industry, government, citizens and the Musqueam Indian Band, and provides input on the Airport Authority's Environmental Management Program (VIAA 2007a). In some cases, the views and advice of the Environmental Advisory Committee are solicited to aid in determining significant effects and key issues. Such cases could include a project that poses an issue of uncertainty, or a new variety of project with which the VIAA does not have any direct experience. The advice of other agencies may also be sought, including Environment Canada and the Department of Fisheries and Oceans (S. Robinson, VIAA, pers. comm. 2008). When seeking internal and external advice on which impacts and issues are of importance, the VIAA EIA process aids in establishing what matters should be considered when making decisions.

Overall, the VIAA EIA process employs many methods to determine which environmental effects and issues are significant. The role and duties of the AEC help to

identify and evaluate the environmental effects and key issues through use of the environmental standards and consideration of public comments. Defining terms of specific value to the EIA process aids in establishing what environmental attributes must be considered. Holding meetings to discuss the application of the scoping document helps to ensure the appropriate effects and issues to be considered in decision making are identified. Seeking advice from internal and external sources can provide a more thorough and detailed analysis of what impacts and issues are significant. A minor deficiency does exist in that social and cultural effects not specifically related to project-caused changes in the environment are not considered at all. Nevertheless, the VIAA EIA process has generally met the requirements of being focused.

Comparison to the CEAA

The CEAA EIA process is similar to that of the VIAA in many ways. For instance, the two processes both have a set of comprehensive definitions with which to assess what environmental changes caused by a project will result in important environmental effects. As with the VIAA process, the Act shares the minor deficiency of not considering those social and cultural effects that are not specifically related to project-caused changes in the environment (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1).).

The CEAA process also identifies various factors to be considered in an EIA, including the environmental effects of a project; the significance of those effects; comments received from the public; and, technically and economically feasible mitigation measures (CEA Agency 2005a). However, in comprehensive study and panel review assessments, as well as some screening-level assessments, the CEAA process expands the list of factors to consider more than what is explicitly detailed in VIAA policy. Specifically in the above-mentioned cases, the CEAA process may call for consideration of community and aboriginal traditional knowledge; the effects of possible future projects in the region that may influence the effects of the proposed project; the overall purpose of the project; the need for and the requirements of a follow-up program; and the capacity of renewable resources likely to be significantly affected by the project

to meet present and future needs (CEA Agency 2005a). Of course, all of these factors could be considered by the VIAA process, since it has measures requiring consideration of any matter that is relevant to the assessment (VIAA 2004). However, it is better to explicitly document a broad range of factors that could be relevant in assessing a proposed project.

The CEAA process also has more prescribed requirements for public involvement in the EIA process than does its VIAA counterpart. The CEAA process explicitly documents measures allowing for public participation in a screening assessment under certain circumstances, and requiring public participation in comprehensive study and panel review assessments in all cases (CEA Agency 2005a). Conversely, the VIAA process has only one documented measure requiring consideration of public comments in an EIA report, with informal policies in place for overall public involvement (see section 4.2.9 for further detail). As such, the CEAA process better employs methods of public involvement to identify the key issues associated with proposed projects.

The CEAA process also incorporates a range of guidance documents to aid in conducting an EIA. One of these documents, a reference guide to determine whether significant environmental effects are likely to be caused by a project, is of particular value in identifying which environmental effects may be significant (FEARO 1994a). Conversely, the VIAA process has not developed any guidance document to aid in identifying significant effects. However, as mentioned previously, the Airport Authority EIA process does use the set of environmental standards in a similar role, and the VIAA also relies on the experience and judgement of the AEC and members of the Environment Department.

Although the VIAA EIA process has limited prescriptive requirements for public involvement, and has not explicitly documented a broader range of factors to be considered in an assessment, it does implement other means of identifying significant effects and key issues. These methods include holding scoping meetings and soliciting advice from internal and external sources.

4.2.8 Adaptive

The process should be adjusted to the realities, issues and circumstances of the proposals under review without compromising the integrity of the process, and be iterative, incorporating lessons learned throughout the proposal's life cycle.

The role of the AEC is the primary adaptive tool in the VIAA EIA process. As noted previously, when an AEC is required to undertake an EIA, the level of assessment must be appropriate for the scale of the project (VIAA 2004). As such, the AEC would have to adjust the necessary level of assessment to any changed realities, issues and circumstances that influence the scale of the proposal under review.

If the VIAA identifies a need for additional adaptation, it would communicate such desires to the AEC (S. Robinson, VIAA, pers. comm. 2008). The AEC is then responsible for addressing the needs for adaptation before the proposed project can be carried out. The AEC must also identify and make recommendations pertaining to new research, technology or standards (VIAA 2004). By considering new information, the AEC helps the EIA process in adjusting to any new circumstances of a proposal.

There are no documented measures to ensure the EIA process is iterative and incorporates lessons learned throughout a proposal's life cycle. However, the Environmental Advisory Committee may provide some role in this regard for long-term project proposals. The VIAA provides the Environmental Advisory Committee with regular updates at each quarterly meeting. For issues regarding a specific project to be included on an Environmental Advisory Committee meeting agenda, the project would have to be in some stage of progress at the time of the meeting (S. Robinson, VIAA, pers. comm. 2008). The VIAA provides a list of projects to the committee at each meeting (A. Murray, VIAA, pers. comm. 2008). If a project continues for a long enough duration, iterative feedback would be provided by the Committee (S. Robinson, VIAA, pers. comm. 2008). Presumably, the Environmental Advisory Committee would be able to comment on projects that have already been approved and are in some stage of

construction or operation. If such projects posed issues of environmental concern, the Environmental Advisory Committee would have a role in providing feedback.

After a project has been approved, there are other opportunities for iterative feedback. Specifically, the VIAA develops follow-up practices, including construction and operational monitoring programs, to ensure any mitigation measures implemented are effective and operations are not environmentally damaging. For projects that proceed with some level of uncertainty and potentially have greater risks, a more rigorous follow-up program is designed. If the program identifies that mitigation measures are not effective and need to be changed after a permit has already been issued, the VIAA will ensure such changes are carried out (S. Robinson, VIAA, pers. comm. 2008). Such measures are an indication that the VIAA follow-up practices can provide some level of iteration by incorporating lessons learned after development has commenced or been completed. Further, the VIAA has considerable control over ongoing project operations because of its role as landlord. As such, the VIAA may be able to exercise this control to ensure that project operators deal with unanticipated environmental effects in an iterative manner (S. Robinson, VIAA, pers. comm. 2008).

In summary, the VIAA EIA process relies on the AEC, with feedback from the Environment Department, to adjust an assessment to any new realities, issues and circumstances. The AEC is required to ensure the level of assessment for a project is appropriate for its scale, and to identify any new information of pertinence to the proposal. In doing so, the AEC is supposed to assure the integrity of the EIA process is not compromised. With regards to incorporating lessons throughout a project's life cycle, the VIAA EIA process relies on the Environmental Advisory Committee, follow-up programs, and its authoritative role as landlord to provide iterative feedback. Hence, the VIAA EIA process has met the requirements of being adaptive.

Comparison to the CEAA

The CEAA process is quite different from the VIAA in its approach to being adaptive. Presumably, it is the role of a prescribed authority to identify any realities, issues, and circumstances of a proposal under review, and make appropriate adjustments when necessary. However, no such prescribed authority role is specifically documented in the Act or proposed regulations, other than for a class screening. If a proposed project falls within the realm in which a class screening report has been completed, then the prescribed authority must ensure “any adjustments are made to the report that are necessary to take into account local circumstances and any cumulative effects that may result from the project in combination with other projects or activities that have been or will be carried out” (CEA Agency 2005a, 6). Thus, the process must adjust to the realities, issues and circumstances of the proposal subject to a class screening assessment.

The CEAA process explicitly requires the development of a follow-up program when the potential effects and proposed mitigation measures deem such actions as being necessary (CEA Agency 2005a). In addition, the Canadian Environmental Assessment Agency has developed a guidance document to aid in understanding and developing follow-up programs (CEA Agency 2007a). According to the Act, the results of a follow-up program “may be used for implementing adaptive management measures or for improving the quality of future environmental assessments” (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 38.(5)). As such, the follow-up program outputs can be seen as iterative in facilitating procedures for adaptive management.

When looking at both EIA processes, however, it is evident that the VIAA process is more adaptive than that of the CEAA. Both processes have procedures allowing for iterative feedback, whether it’s the development of follow-up programs or feedback from the Environmental Advisory Committee. However, it is the documented role of the AEC to conduct an environmental assessment that is appropriate for the scale of the project that is most important. Under this role, the AEC has to adjust the required level of

assessment to any realities, issues and circumstances that influence the scale of the proposal under review.

4.2.9 Participative

The process should provide appropriate opportunities to inform and involve the interested and affected publics, and their inputs and concerns should be addressed explicitly in the documentation and decision making.

The VIAA EIA process does not appear to include any documented policies that specifically detail how interested and affected publics are provided with appropriate opportunities to be informed and involved, other than an EIA report requirement to consider “any other matter relevant to the assessment such as comments received from the public” (VIAA 2004, 3). There is documented involvement from members of the Environmental Advisory Committee on a quarterly basis (VIAA 2007a), but the Committee does not necessarily include or represent every party having an interest or that may be affected by a proposed project.

In practice, there are two ways in which the VIAA may inform and involve the interested and affected publics. First, the Airport Authority relies heavily on the rigorous consultation program completed during the master planning process for YVR. The YVR Master Plan establishes the types of development expected over the next five years (S. Robinson, VIAA, pers. comm. 2008), and can identify projects that may arise as far as twenty years ahead (A. Murray, VIAA, pers. comm. 2008). This consultation process does not always deal with the details of specific projects, but instead addresses the issues associated with the types of projects anticipated to begin development in the coming years. As such, it is not directly tied to the EIA process. The information gained during these consultations would only be used indirectly when completing environmental assessments, but the Master Plan does establish a planning framework which constrains the development of individual projects.

The second method of public participation takes place as part of the facility permit process. After an environmental assessment has been triggered for an application for preliminary approval, the VIAA uses professional judgment to decide whether to inform and involve the public on a project-by-project basis. There are no formal requirements for when consultation is required, but if a proposed project has elements of uncertainty or introduces issues of public concern, the VIAA initiates some level of public consultation. The level of public consultation varies depending on the proposed project, and should be appropriate to the scale of the project and its inherent issues (S. Robinson, VIAA, pers. comm. 2008). Neither the decision on whether to consult interested and affected parties, nor the decision on the nature of public involvement, are documented in VIAA policy.

Formal notification of a project may be given through news outlets and websites, while consultation may be attained through open houses and workshops with stakeholders. Since there is not an opportunity for public participation with all new projects, there is no publicly available list of all projects that have been proposed or approved (S. Robinson, VIAA, pers. comm. 2008). As such, the public may not be aware of every project. That said, the VIAA does provide greater notice and opportunity for comment on projects of a larger scale, especially those projects that have an element of uncertainty or that the Environment Department identifies as raising issues of particular concern to the public (S. Robinson, VIAA, pers. comm. 2008).

There are no policies that specifically document the need for public access to EIA information. In practice, the VIAA has an informal policy to make EIA information available, but the organization is not subject to provincial or federal legislation dealing with freedom of information. VIAA EIA reports are generally available to the public. However, the VIAA does not advertise the availability of such assessment outputs. For those who want access to a project's EIA outputs, a request for the information must be made with the VIAA, after which the parties can go into the Environment Department offices to review the documents (S. Robinson, VIAA, pers. comm. 2008). As a result, it could be difficult for all parties having an interest in proposed projects at YVR to have adequate access to EIA outputs. By requiring requests for information and subsequent

attendance at Environment Department offices to view the information, the VIAA EIA process may be dissuading some parties from participating.

In regards to addressing public input and concern, the Airport Authority does not specifically document a need to address public inputs and concerns when making decisions and reporting. However, in practice the Environment Department requires the AEC to address in the EIA report all applicable comments and concerns raised through public consultation processes. If the VIAA determines any public comments are not addressed adequately, then the AEC must remedy this prior to project approval (S. Robinson, VIAA, pers. comm. 2008). Thus, the VIAA EIA process attempts to ensure that relevant public concerns are explicitly addressed if a project is to proceed past preliminary approval.

Public participation is a critical element of modern EIA practice, and it is important to document policies and procedures for public participation in an EIA process. As such, it is a major deficiency that the VIAA assessment process has only minimal prescriptive policies addressing public input. Specifically, the Airport Authority's process calls for an AEC to consider public comments when preparing an EIA report. In practice, many other participation methods are in place. Interested and affected publics may be involved in the master planning process, individual project proposals, and the Environmental Advisory Committee. Additionally, the public has means of accessing EIA documents, albeit with some difficulty. But without explicitly documenting policies that address public participation, the VIAA runs the risk of not fully disclosing how interested and affected parties can become involved. Thus, the VIAA EIA process has only partially met the principle of being participative.

Comparison to the CEAA

The most glaring and important difference between the public participation provisions under the CEAA and VIAA processes is that public participation measures are explicitly prescribed in the CEAA and proposed regulations. As noted above, the VIAA

process applies various methods of informing and involving the interested and affected publics, and addressing their inputs and concerns when making decisions. However, almost all of these methods are informal, while the CEAA measures are specifically documented. In addition, the CEAA process includes a *Public Participation Guide* to aid authorities in determining how best to inform and involve the interested and affected publics in an environmental assessment (CEA Agency 2008).

The Canadian Environmental Assessment Registry is an important CEAA tool for informing people of EIA procedures, time lines, decisions and other information relevant to a proposed project. Throughout all levels of assessment, public participation is contemplated, whether it is discretionary in cases of screening-level assessments, or mandatory in class screenings, comprehensive studies (CEA Agency 2005a) and panel reviews (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 34.(b).). In cases where a screening-level assessment is conducted, the CEAA process has a guidance document to ascertain whether public participation is necessary, and if so, at what level (CEA Agency 2006). Furthermore, public involvement in a comprehensive study or panel review assessment can be subsidized by the Participant Funding Program (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 58.(1.1).).

It is important to note that the CEAA has been criticized for not making public participation mandatory for screening-level assessments. The decision on whether to involve the public is at the discretion of the prescribed authority, with historical public participation levels between 10 and 15 percent of screenings (Boyd 2003). Given that over 99 percent of EIAs conducted at the federal level have been screenings (Hanna 2005), it is clear that a significant number of projects are not scrutinized publicly. When public involvement has been solicited for screening assessments, community and environmental groups have consistently indicated dissatisfaction with the level of notification and allotted preparation time. Insufficient opportunities to express their views have also been a source of contention (Hanna 2005).

As with the VIAA EIA process, an EIA carried out under the CEAA and proposed regulations would have to consider comments received from the public (CEA Agency). Presumably, any comments of importance would have to be adequately addressed in the EIA, as is the case with a VIAA assessment. However, there is no specific documentation that requires public inputs and concerns to be explicitly addressed in EIA outputs and decision making. That said, by incorporating prescribed requirements for informing and involving the interested and affected public, the CEAA process addresses the major deficiency evident in its VIAA counterpart.

4.2.10 Interdisciplinary

The process should ensure that the appropriate techniques and experts in the relevant biophysical and socioeconomic disciplines are employed, including use of traditional knowledge as relevant.

Whenever an EIA is required for a given project, an AEC must be retained by the project proponent (VIAA 2004). Since the AEC is considered to be an expert in conducting environmental assessments, the AEC should be aware of the appropriate techniques associated with completing a thorough EIA. In addition, the AEC is responsible for identifying any new research, technology or standards (VIAA 2004). Any consideration of new information helps to ensure appropriate techniques are employed during the EIA process. The AEC may also act as a coordinating professional, bringing in other experts to do field work or provide specialist information on biophysical and socioeconomic factors. These experts must be recruited when appropriate to the scale and complexity of a proposed project (A. Murray, VIAA, pers. comm. 2008). Further, in cases where a panel review assessment is necessary, experts in multiple disciplines would be employed. However, there have been no review panel assessments completed at YVR in recent history (S. Robinson, VIAA, pers. comm. 2008).

Traditional knowledge is solicited by way of the Environmental Advisory Committee, which includes members from the Musqueam Indian Band (VIAA 2007a).

However, the use of First Nations traditional knowledge is not explicitly documented in VIAA EIA policy and is not specific to individual projects. As the Airport Authority is not a government body, it does not have a direct legal “duty to consult”. However, the VIAA does attempt to work cooperatively with First Nations groups. If in the judgement of the Environment Department a proposed project warrants public consultation, then First Nations groups would be approached for input (S. Robinson, VIAA, pers. comm. 2008). Any relevant input from First Nations consultations would be employed as part of the overall EIA and decision making processes. However, such actions are not explicitly documented in VIAA policy.

First Nations are not often involved in specific EIA studies at YVR, but instead through YVR’s overall planning processes, as well as through regular meetings between the airport’s Executive Committee and the Musqueam Indian Band Council. For any projects having potential effects on areas of archaeological interest, the VIAA practices formal consultation with appropriate First Nations groups throughout the EIA process (S. Robinson, VIAA, pers. comm. 2008). In such cases, a VIAA-approved archaeologist would work under the approval of the Musqueam Indian Band.

Since the VIAA EIA process requires the employment of an expert (i.e., the AEC) to conduct environmental assessments, expects the AEC to bring in relevant experts from multiple disciplines when necessary, and calls for the use of traditional knowledge whenever relevant, the principle requirements of being interdisciplinary have been met. Of note, although the VIAA is not bound by a duty to consult, its EIA process would benefit from explicitly documenting the need to cooperate with First Nations groups whenever a project may have an influence on their interests.

Comparison to the CEAA

As mentioned before, under the CEAA the Minister of the Environment has powers to establish research and advisory bodies (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 58.(1)(b).), which would assist in ensuring an EIA is interdisciplinary in its

approach. However, these research and advisory bodies are discretionary, with no documentation detailing under what conditions such bodies would be required. Even if a research and advisory body is not established, the proposed regulations enable an airport authority to make a request for an outside party to carry out a screening or comprehensive study level EIA with subsequent report and follow-up. Only when making decisions would an airport authority itself be specifically required to participate in the process (CEA Agency 2005a). Thus, under these conditions, an airport authority could hire a qualified expert with knowledge in various disciplines to complete an assessment. Presumably, any person or body hired to carry out an EIA would have to identify and use the appropriate techniques relevant to a proposed project.

However, it is only when a panel review is required that experts from multiple disciplines must become involved. When a panel review is found to be necessary, members who are appointed must be free of conflicts and bias, and have knowledge or experience relevant to the potential environmental effects of a project (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 33.(1)(a).). As a result, members of a review panel are intended to represent the disciplines relevant to the anticipated effects of a proposed project. In addition, it is common for expert witnesses from multiple disciplines to present evidence in a panel review.

Unlike the VIAA EIA process, traditional knowledge is explicitly addressed in the CEAA and draft regulations. Specifically, consideration must be given to community and aboriginal traditional knowledge on projects undergoing comprehensive studies and panel reviews, and such consideration is discretionary for assessments at a screening level (CEA Agency 2005a). Furthermore, the CEAA process includes a guide to the use of aboriginal traditional knowledge (CEA Agency 2004).

Overall, both EIA processes possess minor deficiencies. While the VIAA process does not explicitly document requirements for consideration of traditional knowledge in its EIA literature, the CEAA process does not always involve experts from multiple

disciplines in an assessment, except when completed by panel review. Nevertheless, both processes have adequate measures for being interdisciplinary in place.

4.2.11 Credible

The process should be carried out with professionalism, rigor, fairness, objectivity, impartiality and balance, and be subject to independent checks and verification.

Before making a decision on whether a proposed project should receive preliminary approval for a facility permit, the project proponent must hire an AEC to complete an environmental assessment if so required by the Environment Department (VIAA 1996). In requiring an AEC to be hired upon initiation of any EIA process, the Airport Authority is attempting to ensure that the environmental assessment is carried out with professionalism, rigor, fairness, objectivity, impartiality and balance. The AEC is usually required to be professionally designated and bound by a code of conduct or ethics. If improper bias is evident, the AEC could lose its professional designation (S. Robinson, VIAA, pers. comm. 2008).

Public consultation, when deemed necessary, is another measure used by the Airport Authority to ensure its EIA process meets the requirements of being credible (S. Robinson, VIAA, pers. comm. 2008). Put simply, by soliciting input and explicitly addressing comments from interested stakeholders, the EIA process should be more credible to interested and affected parties. Once an AEC has completed an impact assessment, its report and recommendations must be submitted for review by the Environment Department (S. Robinson, VIAA, pers. comm. 2008). Having the Airport Authority review the work of the AEC is one way in which the VIAA EIA process independently verifies the overall assessment is credible.

When the AEC completes the required field reviews as part of the follow-up program for a project, the reviews must be submitted to the Environment Department and an independent professional (VIAA 2004). Independent professionals are usually in fields

such as engineering or architecture. They are hired by the VIAA, must be qualified building code experts, and be independent of all parties (S. Robinson, VIAA, pers. comm. 2008). Transport Canada also regularly reviews the VIAA environmental management programs. As part of the process, Transport Canada reviews the EIA program, sometimes evaluating completed environmental assessments. Again, this is another means of independent check or verification (A. Murray, VIAA, pers. comm. 2005). Having field review reports examined by an independent professional and completed assessments examined by Transport Canada helps to assure the VIAA EIA process remains professional, rigorous, fair, objective, impartial and balanced.

In general, the VIAA environmental assessment process meets the indicators of credibility at various stages of a given assessment. The Airport Authority assures credibility by relying on the qualifications and designation of an AEC, the input received from public consultation, and the checks and verification from the Environment Department, an independent professional, and Transport Canada. It is important to note, the AEC is often formally independent from the proponent and the VIAA, but its wages are still paid by the proponent. As such, there is the possibility of some level of bias in the EIA process, regardless of an AEC being bound by a code of conduct or ethics. Further, although the Airport Authority reviews the work of the AEC following an EIA, the VIAA cannot be considered an independent party when it is the project proponent. Nevertheless, the VIAA EIA process has sufficient measures to meet the requirements of being credible.

Comparison to the CEAA

Like its VIAA counterpart, the CEAA process enables an airport authority to request that a third party conduct the bulk of an assessment (CEA Agency 2005a). Presumably, any person or body that carries out the EIA of a proposed project would have to have qualifications similar to those informally required under the VIAA process. Thus, a qualified third party would help to assure an EIA is carried out with professionalism, rigor, fairness, objectivity, impartiality and balance. However, the Act and proposed

regulations provide no other means with which to ensure credibility. As such, other airport authorities in Canada subject to the federal process might assess the qualifications of a third party differently from the VIAA. Essentially, the CEAA process might not be applied consistently from airport to airport.

Public involvement procedures also help to ensure the indicators of credibility are met. As mentioned previously, the CEAA process has extensive requirements for public participation in an EIA, discretionary at a screening level, but mandatory for comprehensive studies (CEA Agency 2005a) and panel reviews (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 33.(1)(a).). By including public parties in an EIA, both the CEAA and the VIAA processes increase their credibility.

In cases where a review panel is appointed under the CEAA and proposed regulations, all members must be free of bias and conflicts of interest (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 33.(1)(a).) A documented requirement such as this further supports the credibility of the CEAA EIA process for those assessments in need of enhanced review.

The Canadian Environmental Assessment Agency ability to request information on an assessment in support of a quality assurance program (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 56.1.) is one measure employed by the CEAA process which differs from that of the VIAA. Requests of this kind act as an independent check and verification of the overall EIA process. The Canadian Environmental Assessment Agency may not be fully independent from the federal government, but is largely independent from those parties that would apply the proposed regulations for airport authorities. However, it is unclear during what stages of an assessment these types of requests for information would be made. As such, it seems as though the major deficiency evident in the VIAA EIA process largely remains for assessments conducted under the CEAA.

Clearly, the CEAA and VIAA assessment processes use similar measures to meet the indicators of credibility, but neither process addresses the major deficiency of having independent checks and verification throughout each stage of an assessment.

4.2.12 Integrated

The process should address the interrelationships of social, economic and biophysical aspects.

The VIAA EIA process addresses the interrelationships of social, economic and biophysical aspects evident in a given project primarily through its definitions of the terms “environment” and “environmental effect.” The “environment” definition identifies the components of the physical environment that must be considered in an EIA. An “environmental effect” refers to any project-caused change in the environment, or the effect(s) any such change has on health and socioeconomic conditions, on physical and cultural heritage, on traditional land and resource use by First Nations, or on any structure, site or thing of historical, archaeological, paleontological or architectural significance (VIAA 2004). These comprehensive definitions are essential to understanding how an EIA is to be conducted under the VIAA process. Any decision made in the EIA process is bound by how the potential environmental effects of a project are interpreted in relation to these defined terms.

However, some interrelationships may be ignored since those social and economic effects that are not specifically related to changes in the environment would not require consideration in an EIA. Such interrelationships are not addressed in the terms defined by the VIAA, nor do they require evaluation as part of a broader social impact assessment process. Although neglecting to consider social and economic effects not related to environmental changes may only be a minor fault for other principles, it is a major deficiency under the principle of integration. For an EIA process to be fully integrated, it must consider the interrelationships between all social, economic and biophysical

aspects; not just those interrelationships exclusively relating to biophysical changes. Thus, the requirement of being integrated is only partially met by the VIAA EIA process.

Comparison to the CEAA

The CEAA process also comes short of requiring full consideration of social and economic effects associated with a project. Like the VIAA EIA system, there are no specific measures calling for a more inclusive social impact assessment. Further, the definitions for “environment” and “environmental effect” similarly address only those social, economic and biophysical interrelationships that are specifically linked to changes in the environment caused by a project (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1)). Hence, the same major deficiency seen in the VIAA process is evident in that of the CEAA.

4.2.13 Transparent

The process should have clear, easily understood requirements for EIA content; ensure public access to information; identify the factors that are to be taken into account in decision making; and acknowledge limitations and difficulties.

As noted in the evaluations of previous criteria, an AEC is hired to complete an EIA of a project with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, defining measures to mitigate these effects, and assessing whether the project will comply with the environmental standards. In addition, the AEC must complete an EIA report that considers the environmental effects of the project, including those that are cumulative or are resulting from malfunctions or accidents that may occur in connection with the project, the significance of the potential environmental effects, technically and economically feasible mitigation measures to address any effects deemed significant, and any other relevant matter, such as public comments and the overall need for the project (VIAA 2004). These

requirements are explicitly documented in the Scope of Environmental Services, which binds all dealings between the AEC and the VIAA.

The list of factors to be considered in an EIA report helps delineate exactly what content is required in an impact assessment, making it clear and easily understood. The factors can also help to acknowledge any limitations and difficulties associated with the project by identifying potentially adverse effects. In practice, it is reasonable to assume that any factor to be considered in the EIA report will at least be considered in decision making. However, there are no documented weighting criteria with which these factors can be evaluated for relative importance. Such decisions are made using the professional judgement of the AEC (S. Robinson, VIAA, pers. comm. 2008). As such, it can be assumed that each AEC develops informally weighted criteria to gauge significance of a particular project, and that these weightings may vary across AECs.

Acknowledging particular limitations and difficulties associated with the project is the responsibility of the AEC (S. Robinson, VIAA, pers. comm. 2008). For instance, the AEC must identify and make recommendations pertaining to new research, technology or standards (VIAA 2004). The identification and use of new information can help the EIA process to adapt to changing conditions that may pose difficulties. Simply put, such new information may be identified as a response to limitations and difficulties evident in a proposed project.

Public access to EIA information, as discussed in section 4.2.9, is managed informally by the VIAA and is not explicitly documented. EIA outputs are available to the public, but must be requested prior to release. Further, the availability of EIA outputs is not advertised (S. Robinson, VIAA, pers. comm. 2008). As such, the Airport Authority EIA process is not particularly user friendly when it comes to accessing information dealing with the environmental assessments of proposed projects.

Overall, the VIAA EIA process meets many of the indicators of transparency. The intent and factors to be considered in an EIA make the process clear and easily

understood, while identifying what should be taken into account when making decisions. Acknowledging limitations and difficulties is addressed by identifying potentially adverse environmental effects, as well as using new information to respond to such issues. However, as with the participative criterion, there is a lack of documentation regarding public access to EIA information. This is a critical aspect in being transparent, and the absence of adequate documentation signals a major deficiency. In addition, although the VIAA process identifies the factors to be considered when making decisions, these factors are not evaluated using specified criteria. This is another major deficiency since project applicants, assessment participants and the general public have no transparent means of identifying why a decision was made. A process cannot be justified as being transparent without having prescriptive public access measures in place and clear criteria for making decisions. Consequently, the VIAA EIA process has only partially met the principle of transparency.

Comparison to the CEAA

The CEAA process also includes many measures to address the need for an EIA to be transparent. Requirements for EIA content are explicitly documented in the Act and draft regulations. As noted previously, the Act requires that various factors must be considered when completing an EIA, with the scope of those factors depending on the level of assessment being conducted (CEA Agency 2005a). Similar to the VIAA, these factors help clearly define the content necessary in an environmental assessment, making such required content easily understood. Further, by identifying potentially adverse effects as part of the EIA process, any limitations and difficulties associated with a project should be acknowledged.

These same factors are also considered when making decisions on whether a project should proceed with development. However, unlike its VIAA counterpart, the CEAA EIA process provides guidance materials to determine if a project is likely to cause significant adverse environmental effects. Such guidance materials direct an assessment to consider the magnitude, geographic extent, frequency, duration, degree of reversibility,

ecological context, probability of occurrence, and scientific uncertainty associated with the potential adverse effects of a project (FEARO 1994a). These CEAA documents are an important tool when making decisions. Essentially, they are a set of criteria by which the significance of an adverse effect can be gauged, thereby addressing one of the major deficiencies evident in the VIAA EIA process.

As noted in section 4.2.9, the Canadian Environmental Assessment Registry is the primary tool in the CEAA to ensure public access to information. The Registry enables public access to EIA procedures, time lines, decisions and other relevant information (CEA Agency 2005a). Furthermore, the CEAA process includes comprehensive guidance materials to aid in understanding how the Registry works (CEA Agency 2005b). By providing the public with a means of accessing EIA information, the CEAA process also addresses the other major deficiency present in its VIAA counterpart.

4.2.14 Systematic

The process should result in full consideration of all relevant information on the affected environment, of proposed alternatives and their impacts, and of the measures necessary to monitor and investigate residual effects.

The VIAA environmental assessment process has several measures in place that meet the requirements of being systematic. The definitions for “environment” and “environmental effect” aid in establishing the interpretation of an affected environment and determining which information is relevant. As was noted for previous criteria, the AEC must undertake an EIA of a project in order to identify potential environmental effects associated with its design, construction and operation, establish the mitigation measures necessary to alleviate such effects, and evaluate whether the project will comply with the environmental standards. Further, the AEC must consider the significance of potential effects and any other matter relevant to the proposed project in an EIA report (VIAA 2004). These requirements are explicitly documented in the Scope of Environmental Services. In essence, the intent of the EIA study and list of factors to be

considered helps to ensure all relevant information on the affected environment is adequately considered.

Other systematic measures include the potential for a scoping meeting to be held between the VIAA, project proponent and its AEC to discuss how the Scope of Environmental Services should apply for a given project (VIAA 2004). This type of meeting, if held, may help to ensure all relevant information is appropriately considered. The AEC is also responsible for identifying and making recommendations pertaining to new research, technology or standards (VIAA 2004). Any use of new information can further aid in ensuring all relevant information is properly evaluated.

The AEC may be required to consider the overall need for the project and alternatives to the project (VIAA 2004), depending on the project's scope. If a need for a project is evident, but adverse environmental effects may result, alternative methods are considered. Such methods include looking at alternatives in the project design or considering alternative means of meeting the project needs (S. Robinson, VIAA, pers. comm. 2008).

Although it is not documented, the VIAA does have a practice in place to evaluate project alternatives. To determine which option is "best" for achieving proposal objectives, an individual analysis of each alternative is necessary. The AEC is expected to consider options across the spectrum when looking at the alternative methods of meeting proposal objectives. Examples of what should be considered include options having the least environmental effects, the lowest economic costs, and the smallest operational interference. When necessary, input from interested and affected publics should also be considered in evaluating the options. Professional judgement is used to decide which option is best (S. Robinson, VIAA, pers. comm. 2008).

With respect to residual effects, the AEC must provide a "description of any residual effects (i.e., effects that cannot be mitigated)" (VIAA 2004, 3). However, there is no documented criteria used to evaluate residual effects, nor are there documented measures

to monitor or investigate such effects (S. Robinson, VIAA, pers. comm. 2008). The AEC is only required to list what they are. Informally, however, residual effects may be monitored as part of a follow-up program. If new residual effects are discovered during follow-up monitoring, then new mitigation measures must be implemented to address the impacts (S. Robinson, VIAA, pers. comm. 2008).

In practice, the Environment Department uses professional judgement to gauge the significance of a residual effect. If the effect in question is deemed to be significant, the project will not be given preliminary approval without a change in project design aimed at its elimination (S. Robinson, VIAA, pers. comm. 2008). If a significant residual effect was found during follow-up, and it was determined that the effect could not be adequately mitigated, the VIAA does have the authority to shut a project down if circumstances are justified (S. Robinson, VIAA, pers. comm. 2008).

In all, the VIAA EIA process is quite systematic in its approach. There are various documented measures ensuring consideration of all relevant information on the affected environment, including necessary factors to be considered, scoping meetings, and identification of new information. There are documented and informal measures to evaluate proposed alternatives and their impacts, and prescriptive requirements and informal practices to identify, monitor and investigate residual effects. Consequently, the requirement of being systematic has been met by the VIAA process.

Comparison to the CEAA

The CEAA EIA process also has various means of addressing the systematic indicators. As with the VIAA process, defined terms within the Act are used to frame interpretation of an affected environment, and the information relevant to an adverse effect (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1)). When a proposed project is subject to an EIA, the assessment must consider various factors depending on the level of assessment. No matter the type of EIA conducted, consideration must be provided for the environmental effects of a project, including those

that are cumulative or result from malfunctions or accidents, the significance of those environmental effects, and comments received from the public (CEA Agency 2005a). These factors to be considered further help to identify which information is relevant to the affected environment.

For those projects eligible as class screening assessments, adjustments must be made to take into account local circumstances. For comprehensive studies, if the Minister of the Environment feels that additional information is required after having reviewed the report, the airport authority or proponent must ensure the information is provided (CEA Agency 2005a). Both of these proposed regulatory measures help to make certain all relevant information on the affected environment is present and fully considered when completing an EIA.

If an airport authority or the Minister of the Environment determines it necessary, the EIA of a project may require consideration of the need for the project and alternatives to the project (CEA Agency 2005a). “Alternatives to the project” refers to consideration of those options that could be adopted instead of the project (Connelly n.d.). Comprehensive study and panel review assessments include mandatory consideration of alternative means to meet project objectives, and the environmental effects of those means (CEA Agency 2005a). “Alternative means to meet project objectives” includes such things as alternative sites, routes, and methods of construction, operation or mitigation (Connelly n.d.). The CEAA process also provides a guidance document to aid in evaluating alternative options, by establishing how an option is feasible, identifying the effects of the feasible options, and providing a rationale for the preferred alternative (CEA Agency 2007b). Thus, the federal EIA process has adequate measures to ensure proposed alternatives and their impacts are fully considered.

Unlike the VIAA process, neither the Act nor proposed regulations for airport authorities specifically address the concept of a residual effect. Under the regulatory sections for making decisions, a project can proceed while having significant adverse effects if those effects are justified (CEA Agency 2005a). Such adverse effects are

residual effects. Presumably, any project that causes significant adverse effects but is still allowed to proceed would require a follow-up program to be designed. A follow-up program, if implemented, would be an appropriate way in which to monitor and investigate residual effects.

Overall, the CEAA process is quite similar to that of the Airport Authority. Both processes use definitions and factors to be considered as a means of identifying relevant information about the affected environment that must be considered. Both processes have measures to ensure present circumstances and information gaps are addressed. Both processes include procedures for evaluating project alternatives and their associated impacts, although the CEAA process does incorporate guidance materials. The only substantial difference between the two processes is that the VIAA process explicitly defines “residual effect”, while the Act and proposed regulations do not. Nevertheless, the implementation of a follow-up program in both processes should address the need to monitor and investigate effects that cannot be mitigated.

4.3 Operating Principles

The IAIA operating principles “describe how the basic principles should be applied to the main steps and specific activities of the environmental impact assessment process” (IAIA 1999, 3). To elaborate, the EIA process should be applied under certain conditions (noted in 4.3.1 to 4.3.5), and should provide for various practices (noted in 4.3.6 to 4.3.15). The first of the operating principles, “Application of EIA Process”, has five components that I assess individually: timing, project inclusion, sustainability and the factors considered, involvement, and international standards.

4.3.1 Application of EIA Process – Timing

An EIA process should be applied as early as possible in decision making and throughout the life cycle of the proposed activity.

The VIAA EIA process is applied before granting preliminary approval for a project. To receive preliminary approval, a project proponent may be required by the Environment Department to submit an EIA report from an AEC (VIAA 1996). The AEC is responsible for identifying potential environmental effects associated with the project and ensuring the project is in compliance with the environmental standards throughout all design, construction and operation phases (VIAA 2004).

During construction activities, the VIAA requires that the AEC must conduct periodic field reviews as part of follow-up monitoring to ensure mitigation measures implemented are effective and the environmental standards continue to be met (VIAA 2004). Operational follow-up practices may also be developed to make certain any remaining mitigation measures that are necessary remain effective, and that procedures are in place in case of accidents or emergency. However, there is no documented process for establishing operational follow-up programs. Such plans are developed ad hoc on a project-by-project basis (S. Robinson, VIAA, pers. comm. 2008). The combination of all these documented and informal measures help to ensure the EIA process is applied from design through to the operation phase of a project, and prior to making any significant decisions.

The decommissioning or destruction of a facility is considered to be a project, and as such, requires a facility permit. Consequently, any decommissioning or destruction project initiates the facility permit process again and requires environmental approval (S. Robinson, VIAA, pers. comm. 2008). By having the phases of a project following operation considered as separate projects, the Airport Authority applies its EIA process throughout the entire life cycle of a project. Thus, the requirements governing the timing for application of an EIA process are met.

Comparison to the CEAA

Under the CEAA EIA process for prescribed authorities, there are several triggers for an environmental assessment. These triggers mandate an EIA to be completed when a project is carried out on federal lands and the prescribed authority is either the proponent or provides financial assistance to the proponent; when the prescribed authority sells, leases or otherwise disposes of federal lands or any interest in those lands to enable the project to be carried out; or, when the prescribed authority issues a permit or license granting approval for a project to proceed (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 9.1(2)). In addition, the proposed regulations require an impact assessment to be completed when an airport authority issues a facility permit or building permit allowing a project to be carried out by a third party on federal lands controlled by the airport authority (CEA Agency 2005a).

Once an EIA is triggered under the CEAA, it “shall be conducted in respect of every construction, operation, modification, decommissioning, abandonment or other undertaking in relation to” a proposed project (CEA Agency 2005a, 2). It is important to note that, unlike the VIAA process, the CEAA system does not specifically call for an assessment during the design phase. Instead, the Act requires an environmental assessment conducted by a prescribed authority to be initiated “as early as is practicable in the planning stages of the project and before irrevocable decisions are made” (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 9.1(1)). Thus, both systems have measures to ensure the process is applied before decisions are made and throughout the life cycle of the proposed activity. However, the Airport Authority process explicitly requires a project to comply with the environmental standards in the design phase, while the Act and draft regulations do not document any explicit requirements to assess a project’s design. By ensuring an EIA appropriately considers a project during design, the VIAA process can better evaluate the key issues and impacts associated with the specific activities involved.

4.3.2 Application of EIA Process – Project Inclusion

An EIA process should be applied to all development proposals that may cause potentially significant effects.

Whenever a facility permit application is submitted, the Environment Department looks at the scope of work involved to determine whether a formal EIA is required. The decision on whether a project must undergo an EIA is made by the VIAA based on the professional judgment of its environmental specialists, as well as the completed environmental checklist included in the facility permit application (S. Robinson, VIAA, pers. comm. 2008). The environmental checklist is a formal document aimed at helping to screen projects for those that may result in potentially adverse environmental effects (VIAA 2000). As such, the VIAA EIA process is applied to all development proposals that specialists in the Environment Department believe may cause adverse environmental effects based on information supplied in environmental checklists. Thus, the VIAA process meets the principle requirements of project inclusion.

Comparison to the CEAA

The CEAA process involves a series of decisions to determine whether an EIA is required. First, a proposed activity must fall within the defined requirements of a project under the Act. A “project” is defined as any proposed undertaking in relation to a physical work, or any proposed physical activity not relating to a physical work but contained in the *Inclusion List Regulations (Canadian Environmental Assessment Act, S.C. 1992, c. 37, s. 2.(1).)*

If a proposed activity does meet the requirements of being a project under the CEAA, it must be determined whether the activity triggers an EIA. As mentioned in the previous section, the CEAA process has several means in which to trigger an environmental assessment. Again, an EIA is required when a project is carried out on federal lands and the prescribed authority is either the proponent or provides financial assistance for the proponent; when the prescribed authority disposes of federal lands or

an interest in those lands in any way to enable construction of the project; or, when the prescribed authority issues a permit or license granting approval for a project to proceed (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 9.1(2)). Further, the proposed regulations require an EIA to be completed when an airport authority issues a facility permit or building permit allowing a project to be carried out by a third party on federal lands controlled by the airport authority (CEA Agency 2005a).

However, there are numerous physical works and activities that are excluded from environmental assessments. These activities are outlined in the *Exclusion List Regulations, 2007* (CEA Agency 2007c). A project may also be excluded from requiring an EIA if it is in response to an emergency where immediate action is necessary to protect the environment and human health (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 7.1(c)). To help determine whether the Act applies to a proposed project, the CEAA process includes a guidance document explaining how an activity would qualify as a project, information on the inclusion and exclusion lists, details of EIA triggering process, as well as the different levels of assessment possible (CEA Agency 2007d).

Although the CEAA exclusion list is designed to exempt projects that are unlikely to have significant adverse environmental effects, it is possible that an exempt project could have such effects. By allowing some projects to be excluded from the EIA process, the CEAA system falls short of considering all activities that may adversely impact the environment. So in this case, the VIAA model of reliance on professional judgement, past experience and environmental checklists is better suited to ensure all development proposals with the potential to adversely influence the environment are subject to an EIA.

4.3.3 Application of EIA Process – Sustainability and the Factors Considered

An EIA process should be applied to biophysical impacts and relevant socioeconomic factors, including health, culture, gender, lifestyle, age, and cumulative effects consistent with the concept and principles of sustainable development.

As noted in previous sections, the VIAA has developed a set of comprehensive definitions to aid in interpreting the application of the assessment process. In defining the “environment”, the Airport Authority identifies the biophysical aspects that must be considered in an EIA. An “environmental effect” refers to any project-caused change in the environment, or the effect(s) any such change has on health and socioeconomic conditions, on physical and cultural heritage, on traditional land and resource use by First Nations, or on any structure, site or thing of historical, archaeological, paleontological or architectural significance (VIAA 2004).

These definitions specify the biophysical and socioeconomic factors that must be considered when conducting an EIA, specifically noting issues of health and culture. Factors of gender, lifestyle and age are not specifically addressed in definitions, but if deemed relevant, could be covered under health and socioeconomic conditions. However, it is a major deficiency that socioeconomic factors require consideration only when related to changes in the environment caused by the project. Without fully considering all social and economic impacts associated with a project, an environmental assessment conducted by the VIAA may ignore impacts that could influence future community well-being and sustainability.

When considering environmental effects, the Scope of Environmental Services calls for the AEC to consider those that are cumulative or result from malfunctions or accidents. The significance of such effects must also be considered (VIAA 2004). Thus, the VIAA EIA process specifically documents the necessity to consider cumulative effects that result from proposed projects, as well as the significance of those effects.

Only two published documents that mention the VIAA environmental assessment process refer explicitly to the concept of sustainability: the *2007 Environmental Management Plan* and the *2007 Sustainability Report*. The Airport Authority's *Environmental Management Plan* outlines the overarching environmental management system at YVR and states that the VIAA "envisions a sustainable future for YVR and will advance this vision by increasing its contribution to the economic, social and environmental well-being of the Fraser River Estuary, British Columbia and Canada" (VIAA 2007a). The sustainability report takes a comprehensive look at all the economic, environmental and social aspects of management at YVR, setting targets and evaluating performance on an annual basis (VIAA 2007b). However, the concept of sustainable development is not explicitly referenced in any VIAA impact assessment documentation.

Nevertheless, the inclusion of sustainability in the *2007 Environmental Management Plan* implies all environmental business at YVR should be subject to the concept and its principles, including the completion of impact assessments. In addition, prior to approving an AEC, the VIAA typically communicates the Airport Authority's sustainability objectives to the proposed environmental consultant (S. Robinson, VIAA, pers. comm. 2008). However, the VIAA assessment process exhibits a major deficiency in failing to require full consideration of all socioeconomic factors. Therefore, the VIAA only partially meets the requirements of applying its EIA process to relevant impacts and factors consistent with the concept of sustainable development.

Comparison to the CEAA

Like the VIAA EIA process, the CEAA process defines the terms "environment" and "environmental effect" to frame the way in which biophysical impacts and relevant socioeconomic factors are considered in an EIA. Specifically, an "environmental effect" refers to any change in the environment resulting from project activities, or any effect such a change has on health and socioeconomic conditions, physical and cultural heritage, land and resource use for traditional purposes by aboriginal persons, or any structure, site or things of historical, archaeological, paleontological or architectural

significance (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1).). Any EIA conducted under the Act and proposed regulations would apply to factors such as health, culture, gender, lifestyle and age, as long as the effects were as a result of project-caused changes in the environment.

The CEAA EIA process also has several measures addressing the need to consider cumulative effects. Specifically, the factors to be considered in a screening, comprehensive study or panel review include “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” (CEA Agency 2005a, 2). Further, the significance of such cumulative effects must be evaluated. Class screening assessments must also be adjusted to take into account any cumulative effects that may result from the project in combination with other projects or activities (CEA Agency 2005a). In addition to the regulatory requirements, the CEAA process includes three guidance documents to aid in assessing cumulative effects (CEA Agency 2007e, CEAWG 1999, FEARO 1994b). These documents further enhance the process of evaluating cumulative effects associated with a project.

The CEAA process has at least two documented measures to ensure application of the concept and principles of sustainable development. Specifically, the Act states that the Government of Canada seeks to achieve sustainable development, and identifies environmental assessment as a way to provide “an effective means of integrating environmental factors into planning and decision-making processes in a manner that promotes sustainable development” (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, Preamble). Further, in describing the purpose of the Act, the CEAA process encourages those carrying out an assessment to promote sustainable development (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 4.(1)(b).). The proposed regulations also call for consideration of “the capacity of renewable resources that are likely to be significantly affected by [a] project to meet the needs of the present and those of the future” (CEA Agency 2005a, 7). Although this regulatory section does not

specifically reference sustainable development, it is clear the principles of the concept are prevalent.

However, in practice, history has shown that the CEAA process does not always live up to its promises of sustainability. Critics claim that frequently the EIA of a project focuses predominantly on finding means to avoid serious environmental damage, thereby allowing a project to be carried out (Gibson 2001). As a result, assessments may fail to consider options that would maximize long term gains. In addition, by defining “environment” and “environmental effect” to exclude direct socioeconomic and cultural aspects of a proposal not specifically related to project-caused changes in the environment, the CEAA process fails to consider all factors relevant to the concept of sustainable development (Gibson 2001). Nevertheless, this fault is shared by the VIAA EIA process.

4.3.4 Application of EIA Process – Involvement

An EIA process should be applied to provide for the involvement and input of communities and industries affected by a proposal, as well as the interested public.

One of the requirements of this operating principle, involvement from the interested public, has already been addressed in section 4.2.9. The VIAA EIA process calls for consideration of public comments in the EIA report (VIAA 2004), and practices various methods of public notification and consultation through the master planning process, individual project proposals, and the Environmental Advisory Committee (S. Robinson, VIAA, pers. comm. 2008). However, one major deficiency is still evident – an absence of specific policies documented to establish opportunities for public participation. Such measures may be achieved in practice, but are not adequately documented.

With regards to providing for the involvement and input of communities and industries affected by a project proposal, again the VIAA only employs measures in practice rather than in written documentation. Involvement and input from communities

would largely fall under the existing measures that apply to public participation. Industries and businesses on Sea Island receive notices of any projects that in the opinion of the Environment Department may have an effect on their operations. These are notices of a general nature, and are not specifically tied to the EIA process (S. Robinson, VIAA, pers. comm. 2008).

As with other stakeholders, the VIAA may solicit input from affected industries on and off of Sea Island if the Environment Department believes that the EIA of a proposed project warrants consultation. The decision on whether to consult industry is made on a project-by-project basis (S. Robinson, VIAA, pers. comm. 2008). However, in order to ensure an EIA process provides for adequate input and involvement from industry, documented procedures should be in place. Thus it is another major deficiency that the Airport Authority impact assessment process lacks documented rules for industry participation.

Overall, the VIAA EIA process does have non-documented measures in place to inform and involve communities and industries affected by a proposal, including the interested public. However, the absence of comprehensive and documented procedures to ensure industry involvement, and the limited inclusion of public involvement measures, are two major deficiencies. Thus, this principle is only partially met.

Comparison to the CEAA

The CEAA EIA process has several documented measures and guidance materials to address public involvement. Any project subject to an EIA must consider comments received from the public (CEA Agency 2005a). Although not specifically documented, it is conceivable that such input could be received from communities and industries affected by a proposal. Comprehensive studies and panel reviews are also required to consider community knowledge in an assessment. Screening assessments have the discretion to consider community knowledge (CEA Agency 2005a).

To facilitate involvement from parties external to the EIA process, the Act includes provisions for a Participant Funding Program which offers financial assistance for comprehensive studies, mediation and panel review assessments (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 58.(1.1)). To inform those seeking financial assistance from this program, the Canadian Environmental Assessment Agency has developed detailed guidance materials outlining the procedures involved to attain subsidies for their involvement (CEA Agency 2005c). Any member of the public or a non-profit organization is eligible to receive funds through the program (Hanna 2005). Thus, involvement of non-profit community groups could be subsidized. Conversely, funds would not be made available to for-profit industries affected by a proposed project.

There are no documented requirements listed in the Act and proposed regulations specifically referring to the involvement and input of industries. Presumably, many of the same involvement processes offered to the public would be available to industries affected by a proposal, but no specific measures are included. Comparatively, the VIAA process includes informal processes for involving and soliciting input from industries. Nevertheless, neither EIA process has formal measures in place, hence, they share the same deficiency.

Regarding the other major deficiency present in the VIAA system, the CEAA process is a substantial improvement in providing means for involvement and input from communities and the interested public. Specifically, the CEAA EIA process includes numerous legislated requirements for public and community involvement. Additional guidance documents further enhance assessments conducted under the CEAA and draft regulations.

4.3.5 Application of EIA Process – International Standards

An EIA process should be applied in accordance with internationally agreed measures and activities.

In practice, there is one international standard and two national standards from which the Airport Authority assessment process draws. Most notably, the VIAA's EIA process was initially developed using the old Environmental Assessment and Review Process Guidelines Order, as well as the CEAA and its regulations (A. Murray, VIAA, pers. comm. 2005). To this day, the VIAA still employs guidelines and standards present in the CEAA even though it is not legislatively required to do so (S. Robinson, VIAA, pers. comm. 2008).

The VIAA also makes use of the Canadian Airport Council's EIA standard developed in 2001. The standard is voluntary, but the Airport Authority has used it as a guide for some stages in its own EIA process. Internationally, the VIAA does refer to the U.S. Federal Aviation Authority EIA standard, but the American EIA structure is quite different from that present in Canada. Thus, the U.S. standard can only be used as a guide in some circumstances (S. Robinson, VIAA, pers. comm. 2008).

Overall, the VIAA EIA process does not explicitly identify internationally agreed measures and activities in its impact assessment documentation, which is a major deficiency. The principle of applying the EIA process in accordance with international standards is only partially met. The application of international measures that are employed is restricted, and the consideration of such measures is not documented in any EIA policy.

Comparison to the CEAA

Similar to the VIAA process, the CEAA EIA process also does not explicitly document whether it is to be applied in accordance with internationally agreed measures and activities. As noted in section 3.1, the Act was developed in 1992 to replace the

Environmental Assessment and Review Process Guidelines Order. The CEAA was intended to be a system with greater consistency and binding legislative requirements (Noble 2006). The Guidelines Order was used in part to develop the Act and its regulations. However, it is unclear whether international standards were also used.

Nevertheless, since there is no mention of internationally agreed measures and activities, the CEAA process is no better in this area than its VIAA counterpart. However, the VIAA process does have informal means by which it considers other national and international standards to varying degrees.

4.3.6 Screening

To determine whether or not a proposal should be subject to EIA and, if so, at what level of detail.

Many of the measures the VIAA has in place to address issues of project screening have been previously discussed in section 4.3.2. Essentially, a project must only undergo an EIA if so required by the Environment Department (VIAA 1996). Before granting preliminary approval to a proposed project, the Environment Department looks at the scope of the work involved to determine whether an EIA is required (S. Robinson, VIAA, pers. comm. 2008). In addition, the Environment Department uses the environmental checklist, included in the facility permit application, as a formal screening document (VIAA 2000). Hence, the decision to conduct an EIA is made by the Environment Department using the professional judgement of its staff, with consideration given to any information supplied in environmental checklists.

In determining what level of detail is necessary in assessing a given project, the Scope of Environmental Services calls for an assessment to be appropriate to the scale of the project (VIAA 2004). Additionally, the inclusion of specific factors to be considered helps to establish the minimum level of detail necessary to meet the requirements for an EIA report. There are no additional VIAA guidelines that aid in determining how much

detail is required when conducting an EIA, but CEAA guidelines are often used to determine whether an assessment at a screening or comprehensive study level is necessary. Examples include using the Comprehensive Study lists and established practices under the CEAA for the scope of a screening study (S. Robinson, VIAA, pers. comm. 2008). By determining the scale of the assessment required, the VIAA helps to ensure the appropriate level of detail is attained in the study. The VIAA has also established the practice of using past experience to gauge the level of detail required to assess a project, while trying to maintain consistency with what other organizations have done (S. Robinson, VIAA, pers. comm. 2008).

Overall, the VIAA EIA process employs several documented and informal means of screening. Professional judgement and consideration of environmental checklists are used on a project-by-project basis to determine whether an EIA is required. When an EIA is deemed necessary, the level of detail must be appropriate to the scale of the proposed project. Further, CEAA guidelines and past experience are also used to gauge how much detail is required for a given project. Thus, the requirements for screening are met by the Airport Authority's impact assessment system.

Comparison to the CEAA

By comparison, the CEAA process has several legislative measures aimed at helping determine whether a proposed project should be subject to an EIA. The various triggers for an assessment have been described in detail above.

As previously noted, there are some physical works and activities that are excluded from impact assessments, outlined in the *Exclusion List Regulations, 2007*. Projects completed in response to emergencies may also be excluded if immediate action is required to alleviate adverse effects to the environment and public health (*Canadian Environmental Assessment Act, S.C. 1992, c. 37, s. 7.(1)(c).*).

In addition to legislated requirements, the CEAA process also includes guidance materials to aid practitioners in determining whether a project should be subject to an EIA, and if so, what level of assessment would best suit the project (CEA Agency 2007d). As with the VIAA process, the level of detail required in an EIA should presumably correlate with the type of assessment being conducted. Thus, comprehensive studies and review panel assessments under the CEAA would require a more thorough review of a project than would a screening assessment. To aid in determining the level of detail necessary, the CEAA process also relies on the comprehensive set of guidance materials developed by the Canadian Environmental Assessment Agency.

Overall, both the Airport Authority system and the Act and proposed regulations employ adequate measures for determining whether a proposal should be subject to an EIA. Furthermore, both processes use different, but appropriate, means for determining the level of detail necessary in an assessment.

4.3.7 Scoping

To identify the issues and impacts that are likely to be important and to establish terms of reference for EIA.

Many of the measures present in the VIAA EIA process aimed at identifying issues and impacts likely to be important are discussed in section 4.2.7, which centres on the basic principle of being focused. As noted before, when an EIA is found to be necessary in evaluating a given project, the proponent must hire an AEC to perform a variety of services. These include identifying potential environmental effects that may occur at any stage of the project, and ensuring the project is in compliance with the environmental standards (VIAA 2004). These standards are the only documented measures used to evaluate whether the effects of a project are significant (S. Robinson, VIAA, pers. comm. 2008). Holding the AEC responsible for identifying effects and ensuring compliance with the environmental standards is a valuable means of identifying which issues and impacts may be important.

The definitions for “environment” and “environmental effect” also hold great value in the identification of important impacts and factors. By establishing the physical environmental aspects to be considered in an EIA, and distinguishing the social and cultural effects that may result from project-caused changes to the environment, the VIAA EIA process identifies which relevant impacts and factors must be covered in an environmental assessment. Without identifying such impacts and factors, it is impossible to evaluate those that have the most importance. However, it is important to note that some impacts and issues that are important may not be considered in a VIAA EIA if they do not specifically relate to changes in the environment caused by the proposed project.

In some cases, a meeting to discuss the terms of reference document (Scope of Environmental Services) may also be required if there are issues of uncertainty, public concern, or simply that the AEC is new to the VIAA EIA process (S. Robinson, VIAA, pers. comm. 2008). This meeting may help in determining which environmental effects and issues are important enough to be considered in an EIA. Advice may also be solicited from internal and external groups, such as the Environmental Advisory Committee, Environment Canada, and the Department of Fisheries and Oceans (S. Robinson, VIAA, pers. comm. 2008). By seeking counsel from groups outside of the EIA process, the VIAA helps to establish which issues and impacts are most important.

Thus, the VIAA EIA process employs a range of documented and informal means to identify important issues and impacts. Central to scoping is the role afforded to the AEC. One of the AEC’s principal goals is to identify potential effects and ascertain their importance using the environmental standards. Furthermore, advice solicited from groups internal and external to the VIAA, and meetings to discuss application of the Airport Authority’s terms of reference for EIA work further aid in establishing those issues and impacts of greatest significance. A minor deficiency exists in that not all issues and impacts of importance may be considered if they do not relate to project-caused changes to the environment. In addition, not all scoping measures have been formally

documented. Nevertheless, since the primary source of impact identification is prescribed through the use of an AEC, the Airport Authority meets the requirements for scoping.

Comparison to the CEAA

Similar to the VIAA EIA process, the CEAA process defines “environment” and “environmental effect” to frame the way in which the physical aspects of the environment are interpreted, and the way in which those aspects may influence social and economic factors as a result of a proposed project. As before, neither the Act nor the VIAA policies consider any effects that are not specifically related to project-caused changes in the environment (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1).).

The CEAA process requires environmental effects of a project, the significance of those effects, comments received from the public, and any other relevant matter to be considered in an EIA. The scope of these considered factors is determined either by the airport authority or the Environment Minister, depending on the assessment level (CEA Agency 2005a). Presumably, EIA practitioners are responsible for identifying the environmental effects of a particular project. The CEAA process also includes guidance materials to aid in determining which effects and issues are of greatest significance (FEARO 1994a), but no explicit means by which an EIA practitioner can determine the likely impacts and issues associated with a given project. By comparison, the VIAA process has better measures to identify issues and impacts since the Airport Authority specifically designates that role to an AEC.

In cases where public input is used to identify potential effects and issues associated with a proposed project, the CEAA process includes various documented measures enabling public participation in all levels of environmental assessment (CEA Agency 2005a). In contrast, the VIAA process only requires public comments to be considered in an EIA report (VIAA 2004). Consequently, the CEAA process has better means in which public input can be used to identify issues likely to be important.

Only during a panel review does the CEAA process require the development of terms of reference. After appointing members to the review panel, the Minister of the Environment is responsible for fixing the terms of reference to which the panel is subject (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 33.(1)(b).). Conversely, all levels of assessment in a VIAA assessment are bound by the Scope of Environmental Services, the terms of reference document for the Airport Authority EIA process (VIAA 2004). Therefore, the VIAA process has better measures to ensure there is an established term of reference for all types of EIA.

4.3.8 Examination of Alternatives

To establish the preferred or most environmentally sound and benign option for achieving proposal objectives.

The requirement for considering alternatives to the project is explicitly documented in the Scope of Environmental Services, as was noted in section 4.2.14. More specifically, an EIA report must consider “any other matter relevant to the assessment such as ... the need for the project and alternatives to the project” (VIAA 2004, 3). Whether project alternatives are fully considered depends on the scope of a project. If a project has a demonstrated need, but may result in adverse environmental effects, alternative methods of carrying out the project or meeting the needs of the project are considered (S. Robinson, VIAA, pers. comm. 2008).

In practice, the AEC evaluates each project alternative individually to determine which option is “best”. The AEC must consider a wide range of options that can meet proposal objectives. For instance, alternatives having the least environmental effects should be evaluated in comparison to those options that represent the lowest economic costs or the smallest operation interference. Public input may also be considered when evaluating alternatives if deemed necessary. A decision on which option is best is made using professional judgement (S. Robinson, VIAA, pers. comm. 2008). Thus, it can be

assumed that an AEC would develop criteria with which to evaluate project alternatives on a project-by-project basis.

Overall, the VIAA EIA process does have measures in place ensuring the assessment of project alternatives if called for by a given situation. A prescribed requirement to consider alternatives is documented in EIA policy, while informal procedures to complete the evaluation of alternatives are in practice. It would be advantageous to formally document the process for evaluating alternatives, but since the requirement to consider alternatives is recognized in VIAA policy, the lack of prescribed evaluation criteria is only a minor deficiency. Consequently, the Airport Authority meets the requirements for the examination of alternatives.

Comparison to the CEAA

As discussed earlier, the CEAA EIA process may require consideration of the need for a project, and alternatives to a project for all assessments levels (CEA Agency 2005a). When an airport authority or the Minister of the Environment feels such consideration is required, the EIA practitioner must look at alternatives to the project itself (Connelly n.d.). Comprehensive studies and panel reviews must also consider alternative means of meeting project objectives, and the environmental effects of those means (CEA Agency 2005a). Alternative means can include such things as alternative sites, routes, and methods of construction, operation or mitigation (Connelly n.d.).

The CEAA process also includes guidance materials that discuss procedures to help in evaluating alternative options. Options are assessed by identifying those that are economically and technically feasible, establishing the likely effects of those feasible options, and determining which option is preferred using satisfactory rationale (CEA Agency 2007b). Thus, the Act and proposed regulations have adequate measures to establish the best option for achieving proposal objectives.

4.3.9 Impact Analysis

To identify and predict the likely environmental, social and other related effects of the proposal.

This is another principle aimed at evaluating measures used to identify and predict the effects associated with a proposed project. As before, it is the primary role of an AEC to identify the potential environmental effects that may result from a project's development. Identifying and predicting such effects must be done in accordance with the defined terms "environment" and "environmental effect." These terms establish the physical aspects to be considered in an EIA, and distinguish how an environmental effect can represent a change to the environment, or a change in social and cultural aspects that is caused by a project-caused change in the environment (VIAA 2004). The AEC's duty to identify effects in the context of the VIAA-defined terms helps to ensure consideration of most environmental, social and other related effects of a project. However, some social and other related effects may be overlooked if they are not specifically tied to project-caused changes in the environment.

Meetings to discuss the Scope of Environmental Services, and solicitation for advice from internal and external sources (e.g., Environmental Advisory Committee, Environment Canada, Department of Fisheries and Oceans) may also help to identify and predict the effects associated with a proposed project. Although these measures are not employed in every instance, they are essential in cases where issues of uncertainty or significant public concern are evident (S. Robinson, VIAA, pers. comm. 2008).

Thus, the VIAA EIA process employs various documented and informal procedures for identifying and predicting environmental, social and other related effects of a proposal. Through the use of VIAA-defined terms, the AEC is bound to identify potentially adverse effects, including those of a social and cultural nature when caused by environmental changes. Meetings to discuss scope and advice solicited from sources external to the EIA process are also effective means of impact prediction. As noted in other criteria, it is a minor deficiency that not all social and other related effects require

consideration if not explicitly tied to project-cause changes in the environment. Even so, the requirements for impact analysis are met by the VIAA assessment system.

Comparison to the CEAA

As discussed for previous criteria, the CEAA EIA process similarly uses the definitions for “environment” and “environmental effect” to frame the context in which the environmental, social and other related effects are identified. Of note, based on the defined terms in both EIA processes, neither system considers social and other related effects that are associated with a proposed project, but are not a result of project-caused changes in the environment (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1).).

The federally proposed regulations for airport authorities require consideration of various factors in an EIA. These factors include the environmental effects of a project, and the significance of those effects (CEA Agency 2005a). Presumably, the environmental effects associated with a project would be identified by the prescribed authority or a third party conducting the EIA on behalf of the prescribed authority, but no such role is documented in the CEAA process. In comparison, the VIAA EIA process designates the role of identifying potential environmental effects to the AEC in the Scope of Environmental Services (VIAA 2004).

In general, both the CEAA and the VIAA EIA processes have measures to ensure impact analysis in an assessment. Both systems require consideration of environmental, social and other related effects in accordance with defined terms as part of their respective processes. However, only the VIAA process specifically identifies who should identify such effects. Further, the VIAA process may informally identify such effects through scoping meetings with a project applicant and its AEC, as well as through advice solicited from sources internal and external to the EIA process.

4.3.10 Mitigation and Impact Management

To establish the measures that are necessary to avoid, minimize or offset predicted adverse impacts and, where appropriate, to incorporate these into an environmental management plan or system.

One of the principal duties of an AEC is to assure the Airport Authority that all mitigation measures required during construction are implemented, and are effective in minimizing all significant adverse environmental effects (VIAA 2004). This documented role of the AEC helps to ensure any adverse environmental impact is adequately mitigated. When the AEC conducts an EIA on a proposed project, the level of assessment must be appropriate for the scale of the project (VIAA 2004). This correlation between assessment level and project scale helps to ensure the level of mitigation is appropriate for the project.

The AEC must also prepare an EIA report that includes mitigation measures that are technically and economically feasible (VIAA 2004). If an environmental risk, incident or emergency occurs during construction, the project applicant and its AEC are also bound to ensure any environmental effect is effectively mitigated (VIAA 2004). Having the use of mitigation measures triggered by environmental risks, incidents and emergencies can help to minimize any environmental impact.

Since the VIAA EIA process is listed as one of nine environmental programs in the organization's 2007 *Environmental Management Plan* (VIAA 2007a), any mitigation measures arising from the EIA process that are to be undertaken by the VIAA are implicitly incorporated in the Airport Authority's environmental management plan. Mitigation measures are developed on a project-by-project basis to address project-specific needs, and as such, are not directly incorporated into the environmental management plan. As part of the lease agreements between the VIAA and its tenants, any project proponent must have their own environmental management plan. However, the VIAA does not require project proponents to incorporate EIA mitigation measures into their environmental management plans (S. Robinson, VIAA, pers. comm. 2008).

There is no documented VIAA policy detailing how to choose an appropriate method of mitigation. Instead, the VIAA and the AEC primarily use professional judgement based on experience and past precedent to determine which methods are appropriate for a proposed project. If mitigation measures are found to be ineffective in subsequent follow-up monitoring, the measures employed are changed to address project and impact reduction needs (S. Robinson, VIAA, pers. comm. 2008). However, there is no documentation to guide an AEC and the VIAA in determining an appropriate method of mitigation.

In all, the VIAA EIA process has several documented triggers and policies to implement mitigation measures appropriate to the needs of a proposed project. The AEC must ensure the implementation and effectiveness of mitigation methods. Such methods must be feasible and correlate to the scale of the project. The AEC is further bound to ensure the environmental effects that result from any occurrence are adequately minimized. The VIAA also has informal practices in place for determining which mitigation measures will be most effective. Lastly, VIAA mitigation measures are indirectly incorporated into the environmental management plan as part of the EIA process. Thus, the Airport Authority EIA process meets the requirements for mitigation and impact management.

Comparison to the CEAA

The CEAA EIA process has many similar initiatives to establish measures which aim to avoid, minimize or offset predicted adverse impacts. As with the VIAA process, the Act and proposed regulations call for every environmental assessment to consider “technically and economically feasible measures that would mitigate any significant adverse environmental effects of [a] project” (CEA Agency 2005a, 2). Once a decision has been made on a given project, the CEAA process requires the Airport Authority to ensure mitigation measures are implemented and a follow-up program is designed to ensure the effectiveness of those measures (CEA Agency 2005a). The CEAA process

also includes guidance materials to aid in designing appropriate follow-up programs (CEA Agency 2007a).

However, there are two significant differences between the VIAA and the CEEA processes. First, while neither process specifically documents an evaluative framework with which to determine the mitigation measures that are most effective, only the VIAA process has informal practices for such evaluation in place. Second, neither the Act nor proposed regulations for airport authorities include procedures to incorporate mitigation measures into an environmental management plan or system. In fact, neither document makes any mention of an environmental management plan or system. Conversely, the VIAA process indirectly includes mitigation measures in their environmental management plan as part of their environmental assessment program. If the proposed regulations were to come into effect, presumably the VIAA would still incorporate the federal EIA process into their environmental management plan.

4.3.11 Evaluation of Significance

To determine the relative importance and acceptability of residual impacts (i.e., impacts that cannot be mitigated).

The issue of evaluating the significance of environmental effects and the acceptability of residual effects has been discussed in several sections of this evaluation, specifically in 4.2.7 and 4.2.14. The AEC is responsible for identifying potential environmental effects associated with the design, construction, and operation of a project, as well as to consider the significance of such effects with aid from the environmental standards (VIAA 2004). These standards are the sole documented measures used to determine whether the effects associated with a project are significant. However, a degree of professional judgement is necessary when gauging significance, since the environmental standards are not highly detailed and prescriptive (S. Robinson, VIAA, pers. comm. 2008).

In some cases, a meeting is required between the Environment Department, the AEC, and the project proponent to discuss application of the Scope of Environmental Services (VIAA 2004). If warranted, these meetings can occasionally be used to identify the environmental issues and impacts that are of greatest significance. Advice from parties external to the EIA process may also be solicited, including groups such as the Environmental Advisory Committee, Environment Canada, and the Department of Fisheries and Oceans (S. Robinson, VIAA, pers. comm. 2008). Such input can be valuable in evaluating impact significance.

In determining the acceptability of residual impacts, the Environment Department uses professional judgement (S. Robinson, VIAA, pers. comm. 2008). The VIAA only requires that a description of residual effects must be included in an EIA report; no evaluation is prescribed (VIAA 2004). In practice, if the EIA process identifies a residual effect that is of significance, the project will not be given preliminary approval by the Environment Department without a change in project design that would eliminate the effect (S. Robinson, VIAA, pers. comm. 2008). If previously undiscovered residual effects are identified during follow-up monitoring, then new mitigation measures must be implemented to address the impacts (S. Robinson, VIAA, pers. comm. 2008). If a residual effect of significance was found during follow-up, and it was determined that the effect could not be adequately mitigated, the VIAA would have authority to shut down a project if such an action was justified under the circumstances (S. Robinson, VIAA, pers. comm. 2008).

Nevertheless, the VIAA EIA system has documented several means of evaluating impact significance. The AEC has a duty to determine significance, and must use the environmental standards as a guide in measuring acceptability. Meetings between the central parties involved in development approval may also aid in evaluating those impacts which are of greatest importance. Further, the undocumented use of professional judgement and advice from groups outside of the EIA process is of great value when gauging the acceptability of effects that cannot be fully mitigated. If significant residual effects are identified, there are even informal measures in place to prevent approval for

development without addressing the effects. As such, the requirements for the evaluation of significance are met by the VIAA EIA process.

Comparison to the CEAA

The CEAA EIA process employs similar means to evaluate the significance of environmental effects. Every level of assessment must consider the environmental effects associated with a proposed project, as well as the significance of those effects (CEA Agency 2005a). Although the Act and draft regulations do not explicitly address the concept of a residual effect, a prescribed authority can decide that a project with significant adverse effects may be carried out if those effects can be justified (CEA Agency 2005a). Such adverse effects can be considered to be residual effects.

For the most part, the CEAA process does not define grounds for justification of adverse environmental effects caused by a proposed project (Gibson 2001). In fact, the definition of a justified circumstance is determined at the discretion of the responsible authority (Hanna 2005) or prescribed authority, with oversight from the Minister of the Environment and Governor in Council depending on the level of assessment (CEA Agency 2005a). However, CEAA guidance materials suggest that a cost-benefit analysis could be used to justify adverse environmental effects, but only after the likelihood of such effects is determined (FEARO 1994a). Unfortunately, there is no published guidance on the correct approach for conducting such a cost-benefit analysis. Conversely, the VIAA process has informal procedures in place to determine the acceptability of residual impacts.

4.3.12 Preparation of Environmental Impact Statement or Report

To document clearly and impartially impacts of the proposal, the proposed measures for mitigation, the significance of effects, and the concerns of the interested public and the communities affected by the proposal.

The VIAA-produced *Development Rules* explicitly document that an AEC must submit an environmental impact assessment report when applying for preliminary approval, if so required by the Environment Department (VIAA 1996). Determining whether an EIA is required for a given proposed project is at the professional discretion of the Environment Department specialists. Since the AEC is usually a member of a professional organization, and is bound by a code of ethics or conduct, the VIAA presumes any work completed by the approved consultant will be free of bias (S. Robinson, VIAA, pers. comm. 2008). As such, the EIA report should be reasonably impartial.

The Scope of Environmental Services specifically lays out the factors to be considered in an EIA report. These factors include: the environmental effects of the project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments, the need for the project and alternatives to the project. In addition, the AEC is required to provide a description of any residual effects (VIAA 2004).

Thus, when preparing the EIA report the Airport Authority specifically requires an AEC to establish the potentially adverse environmental effects, evaluate the significance of those effects, identify mitigation measures to address the effects, and consider concerns of the interested public. As such, the requirements for preparation of an environmental impact report are met by the VIAA EIA process.

Comparison to the CEAA

The CEAA EIA process has comparable measures for preparing an environmental impact report. Regardless of the assessment level employed in an EIA, preparation of a report is required. As documented in the proposed regulations, an EIA and subsequent report must consider the environmental effects of a project, the significance of those effects, any comments received from the public, and technically and economically feasible mitigation measures (CEA Agency 2005a). Presumably, any consideration of public comments would include those concerns received from communities affected by a proposal.

When an EIA is completed by a review panel, the panel members must be unbiased and free of any conflict of interest (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 33.(1)(a)). Since the panel review report would be completed by the panel members, the report should also be impartial. For screening assessments and comprehensive studies, the CEAA process allows for an airport authority to request a third party to conduct the bulk of an assessment including preparation of a report (CEA Agency 2005a). As discussed in section 4.2.11, it can be assumed that any person or body that carries out the EIA of a proposed project would have to be qualified similarly to the requirements under the VIAA process. Thus, the EIA report should be similarly impartial. However, the airport authority is not required to retain an independent third party to conduct the assessment and prepare the report. In addition, the Act and proposed regulations provide no other means with which to ensure EIA reports are completed in an impartial manner.

4.3.13 Review of the Environmental Impact Statement

To determine whether the report meets its terms of reference, provides a satisfactory assessment of the proposal(s) and contains the information required for decision making.

As noted previously, the AEC must submit an EIA report that considers various factors, including the potential environmental effects of a proposed project; the significance of said effects; any mitigation measures that could eliminate the effects; and any other matter relevant to the assessment (VIAA 2004). If the assessment of a specific project poses new issues not addressed in any previous assessment, the VIAA would communicate to the AEC any additional measures that should be included in the EIA report (S. Robinson, VIAA, pers. comm. 2008). Presumably, all of these factors considered in an EIA report would be information used in decision making.

There is no documented requirement to ensure the EIA report satisfies the terms of reference document (i.e., Scope of Environmental Services) used for dealings between the VIAA, the project applicant and its AEC. The AEC is explicitly required to submit an EIA report to the Environment Department for review, but there is no documented process outlining how the report is to be evaluated, nor how a decision is made on whether the report has been completed appropriately. However, in practice, if the report is not completed to the satisfaction of the VIAA, preliminary approval will not be granted and a facility permit will not be issued (S. Robinson, VIAA, pers. comm. 2008). As such, the VIAA procedural system is an informal means of ensuring the measures listed in the Scope of Environmental Services are met, thus providing a satisfactory assessment of the proposal.

Overall, the requirements for review of the EIA report are met by the VIAA EIA process. Informal measures are in place to ensure the terms of reference are met and the report provides a satisfactory assessment of the proposed project. Furthermore, the VIAA scoping document sets out the information that will be required when making decisions.

Comparison to the CEAA

An extensive list of factors must be considered in a CEAA EIA (CEA Agency 2005a), and presumably would also be covered in the EIA report. As such, an EIA report should include any information required for decision making. In addition, the proposed regulations include several other measures to ensure all information necessary for decisions is provided. For instance, when class screening reports are used to assess a proposed project, the reports must be adjusted to reflect local circumstances and any cumulative effects that may result from the project in combination with other activities. Further, before the Minister of the Environment issues an environmental assessment decision statement as part of the comprehensive study process, additional information can be requested if there are issues that require a more thorough review (CEA Agency 2005a). These measures all help to ensure an EIA report contains the information needed to make appropriate decisions.

The CEAA process has one additional documented procedure ensuring EIA reports provide satisfactory assessments of proposed projects. Specifically, a review panel report must receive approval from the Governor in Council prior to making any decisions. The Governor in Council's approval shall be based on the public interest (CEA Agency 2005a). Otherwise, there are no other documented measures to ensure satisfactory assessment. Further, the CEAA process does not specifically require a panel review report to meet the terms of reference. As noted previously, there is no mention of a terms of reference for screening- and comprehensive study-level assessments in the Act or proposed regulations for airport authorities.

4.3.14 Decision Making

To approve or reject the proposal and to establish the terms and conditions for its implementation.

The VIAA EIA process has no documented procedures detailing the steps required to determine whether a proposed project should be approved or rejected. The Airport Authority uses an ad-hoc process when making decisions of that nature. Formally, the final decision on whether a project goes ahead from an environmental perspective is made by the Manager of Environment. However, this manager's decision is based on the recommendations of the VIAA's environmental specialists. In practice, VIAA decisions are informed from the AEC-produced EIA report and the professional judgement of staff in the Environment Department. No documented set of criteria is employed (S. Robinson, VIAA, pers. comm. 2008).

The facility permit process is used to establish the terms and conditions for implementation of a proposal on a project-by-project basis. These terms and conditions are developed when an AEC conducts an EIA, identifying the requirements a proponent must meet for project approval. As with making decisions, there is no specific guidance document used to establish the terms and conditions for all proposals. Instead, the terms are determined separately for each project using professional judgment and experience from previous assessments (S. Robinson, VIAA, pers. comm. 2008).

Thus, the VIAA EIA process has several measures to address the requirements for decision making. Informal procedures using EIA outputs and professional judgment are employed to make decisions on whether a project should be approved. In addition, the facility permit process is used to set the terms and conditions for a project's implementation. However, the absence of any documented procedures for the decision making process is a major deficiency in the VIAA impact assessment system. Without prescribed requirements, decisions made may be inconsistent over time with turnover in Environment Department specialists or other changes. As such, the VIAA EIA process only partially meets the requirements for decision making.

Comparison to the CEAA

In contrast, the CEAA and proposed regulations for airport authorities are more prescriptive about the decision making process. As the assessment level increases, a greater number of checks and verifications are required prior to making a decision. Under a screening assessment, approval for a project to proceed is only given if it is not likely to cause significant adverse environmental effects. There is a guidance document to help with the determination of whether effects are significant. If a project is likely to cause significant adverse effects that cannot be justified, an airport authority cannot perform any duty or function permitting the project to be carried out in any manner. If it is uncertain whether adverse effects will result from a project or if effects are likely but may be justified, the project must undergo a panel review assessment. Public concern may also warrant reference to a review panel. If a project falls within a class where a class screening report has already been completed, and it does not have unique or cumulative effects, a separate decision on approval is not necessary as long as mitigation measures and follow-up procedures are implemented (CEA Agency 2005a).

Comprehensive studies have an additional tier of decision making. First, after considering the EIA report and public comments, the Minister of the Environment refers the project back to the airport authority for a decision and issues an environmental assessment decision statement. The decision statement sets out the Minister's opinion as to whether a proposed project is likely to cause significant environmental effects, as well as the mitigation measures and follow-up program the Minister considers appropriate. If the decision statement indicates the Minister of the Environment does not expect significant adverse effects to result from a project, the airport authority is free to make their own determination on whether the project is likely to cause significant environmental effects. However, if the Minister does expect a project to cause significant adverse effects, the airport authority must first receive approval from the Governor in Council before making a decision on effects. If a project is unlikely to result in significant environmental effects, or if such effects can be justified, the airport authority can approve

the project to be carried out. If significant effects that cannot be justified are likely, a project must not be allowed to proceed. There are also triggers during a comprehensive study that would require an assessment to be completed by panel review (CEA Agency 2005a).

When a panel review is required to assess the effects of a proposed project, the panel must first submit its report to the Minister of the Environment, the Minister of Transport and the airport authority. The Minister of Transport then responds to the report after consulting with the airport authority and receiving the approval of the Governor in Council. Last, in conformity with the approval of the Governor in Council, the airport authority decides whether the project is likely to cause significant environmental effects. If effects are unlikely, or can be justified, the airport authority may approve a project to be carried out. If effects are likely and cannot be justified, the airport authority must not allow a project to proceed (CEA Agency 2005a).

However, as noted previously, there are no explicit guidelines for the determination of whether adverse environmental effects are justified (Gibson 2001). As such, the airport authority and Minister of the Environment are able to make subjective decisions on whether a project should be allowed to proceed. Further, the CEAA decision-making processes on whether to approve a project are not guided by any specific criteria, and do not require public involvement other than for overall consideration of comments received (Gibson 2001). When making decisions, the conclusions and recommendations of the EIA report are considered only on an advisory basis and are not binding on the airport authority and Minister of the Environment (Sadar n.d.).

In all cases where a project is approved through the CEAA process, the proposed regulations require implementation of mitigation measures and design and execution of a follow-up program (CEA Agency 2005a). These EIA tools are essential to carrying out a proposal, and presumably represent the terms and conditions for its implementation. A project can only be allowed to proceed if adequate mitigation and follow-up measures are in place. Thus, the CEAA EIA process meets all the indicators of best practice in decision

making. Since the Act and proposed regulations explicitly document the process for making decisions and the conditions necessary for implementation, the CEAA system addresses the one deficiency evident in its VIAA counterpart.

4.3.15 Follow-up

To ensure that the terms and condition of approval are met; to monitor the impacts of development and the effectiveness of mitigation measures; to strengthen future EIA applications and mitigation measures; and, where required, to undertake environmental audit and process evaluation to optimize environmental management.

Following construction of a project, the AEC submits a Letter of Compliance assuring the Airport Authority that it has performed all the required services to which it committed (VIAA 2004). Essentially, the letter confirms that the project complies with the environmental standards, and all potentially adverse environmental effects have been mitigated (S. Robinson, VIAA, pers. comm. 2008). An occupancy permit will not be approved prior to receipt of the Letter of Compliance (VIAA 2004), and a Letter of Compliance cannot be issued without having completed an EIA to the satisfaction of the VIAA (S. Robinson, VIAA, pers. comm. 2008).

The VIAA has no explicitly documented measures to establish the terms and conditions of approval. Instead, developing such terms and conditions is part of each individual EIA of a project (S. Robinson, VIAA, pers. comm. 2008). However, the issuance of an occupancy permit would indicate that the terms and conditions of approval had been met. So, by requiring the AEC to submit a Letter of Compliance, the VIAA EIA process is obtaining confirmation that the EIA objectives and these terms and conditions are met. Further, if a facility fails to comply with approval conditions after being issued an occupancy permit, the VIAA has the authority to shut down operations until compliance is achieved (S. Robinson, VIAA, pers. comm. 2008).

The VIAA also employs a follow-up program, including environmental monitoring, to ensure the terms and conditions of approval are met. There is no specific guidance document detailing how the follow-up program is developed, as the level of follow-up necessary is determined from project to project. Environmental monitoring practices examine aspects of both construction and operations so as to keep a close eye on the impacts of development and effectiveness of any mitigation measures implemented (S. Robinson, VIAA, pers. comm. 2008).

In general, established practices are used to monitor impacts and mitigation measures on the basis of previous experience and professional judgment. However, one example of documented construction monitoring would be the AEC duty to conduct periodic field reviews, noted in the Scope of Environmental Services. These reviews are intended to ensure mitigation measures are properly implemented, environmental standards are being met, and construction is proceeding in an environmentally responsible manner (VIAA 2004). Overall, a project proponent is responsible for monitoring any impacts of development and the effectiveness of mitigation measures following construction, but the VIAA does maintain a monitoring role to ensure the environment is being protected adequately (S. Robinson, VIAA, pers. comm. 2008).

There are no documented measures in the VIAA EIA policy to strengthen future EIA applications and mitigation measures. However, the VIAA does have an informal environmental audit process that is intended to review monitoring and management issues for projects following the construction phase. As part of the audit process, the outcomes of the impact assessments would be considered so as to advance future environmental assessment and management, including improvement of mitigation measures (S. Robinson, VIAA, pers. comm. 2008).

There is also an EMS Audit Program which was originally noted in the 1998 *Environmental Management Plan*. This audit program still exists (S. Robinson, VIAA, pers. comm. 2008), but is not listed in the updated 2007 *Environmental Management Plan*. External audits are to be conducted on each environmental management plan

program approximately every five years, while internal reviews are used to augment external audits on an as needed basis (VIAA 1998). Since the VIAA EIA process is listed as one of the nine environmental programs in the Airport Authority's 2007 *Environmental Management Plan* (VIAA 2007a), it should be subject to an external audit approximately every five years. However, the VIAA has not reviewed and updated its EIA process in recent history (S. Robinson, VIAA, pers. comm. 2008). Thus, the VIAA EMS Audit Program has adequate measures in place to strengthen future EIA applications and optimize environmental management, but has not put such measures into action.

In summary, the VIAA EIA process has several measures to address the requirements for follow-up. Procedures necessitating submittal of a Letter of Compliance and subsequent development of follow-up programs help to ensure the terms and conditions of approval are met, while also monitoring the impacts of development and the effectiveness of mitigation measures. The use of an environmental audit process helps to improve future environmental management. Further, if applied, external audits and internal reviews would help to strengthen future EIA applications and optimize environmental management. The VIAA EIA system would benefit from increased documentation for its follow-up programs, but there are enough documented elements in both EIA and environmental management plan policy to satisfy criterion needs. Thus, the requirements for follow-up are met by the Airport Authority EIA process.

Comparison to the CEAA

The CEAA EIA process also employs several follow-up measures after approval is granted for a project to proceed. Assessments at a comprehensive study or panel review level always require the design of a follow-up program. In addition, screening level assessments may also require development of a follow-up program if the Airport Authority considers it appropriate (CEA Agency 2005a).

The Act defines a “follow-up program” as a program for “verifying the accuracy of the environmental assessment of a project, and ... determining the effectiveness of any measures taken to mitigate the adverse environmental effects of the project” (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 2.(1)). As such, a follow-up program employed under the CEAA would help to ensure any terms and conditions of approval are met, as well as to monitor the impacts of development and the effectiveness of mitigation measures. In essence, verifying the accuracy of an EIA of a project can mean to confirm the predicted impacts of development, and thus, monitor such impacts. A guidance document outlining all aspects of designing and implementing a follow-up program is included as part of the CEAA process (CEA Agency 2007a).

In determining the effectiveness of mitigation measures, follow-up programs can aid in strengthening future mitigation measures. Means of mitigation found to be ineffective can be removed from use in future projects, while those methods that are most effective can be employed to a greater extent. Future EIA applications can also be strengthened through the five-year review process noted in the Act. Specifically, the Minister of the Environment must conduct a comprehensive review of the provisions and operation of the Act every five years. Within a year after initiation of the review, unless the House of Commons authorizes additional time, the Minister must submit a report to Parliament outlining any recommended changes (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 72.(1), 72.(2)). These measures can help to strengthen future applications of the CEAA process. Lastly, the Canadian Environmental Assessment Agency has the power to examine and report to the Minister of the Environment on the implementation of the EIA process (*Canadian Environmental Assessment Act*, S.C. 1992, c. 37, s. 63.(2)(d)). When the Agency carries out such process evaluations, environmental assessment as a whole can be improved.

Of note, neither the Act nor the proposed regulations refer to the enforcement of decisions made as part of an EIA. In essence, when there are cases of non-compliance, the CEAA process provides no explicit power to impose penalties on project proponents (Gibson 2001), although there may be penalties associated with other permitting

processes or environmental legislation. Conversely, the VIAA EIA process has informal measures in place to deal with issues of non-compliance.

Overall, the CEAA EIA process has measures to meet most of the indicators of best practice follow-up. There are explicit requirements and guidance materials to design and implement follow-up programs to ensure any terms and conditions of approval are met, the impacts of development are monitored, and the mitigation measures employed are effective and can be used in future applications. Further, the federal process includes a five-year review and has measures for process evaluation to strengthen future EIA applications and optimize environmental management. Although the CEAA process documents all the various steps for follow-up programs and the VIAA process does not, the CEAA process does not include penalties to deal with non-compliance.

4.4 Summary

The VIAA EIA process generally meets the IAIA best practice basic principles for being purposive, rigorous, practical, cost-effective, focused, adaptive, interdisciplinary, credible, and systematic. The VIAA process also generally meets IAIA best practice operating principles for timing, project inclusion, screening, scoping, examination of alternatives, impact analysis, mitigation and impact management, evaluation of significance, preparation of an environmental impact report, review of the environmental impact report, and follow-up. Although the VIAA process has minor flaws under some of these principles, there are no major deficiencies.

Conversely, this evaluation also identified some areas in which the VIAA EIA process only partially meets the requirements of best practice principles. The process has one or two major deficiencies for each of the following principles: relevant, efficient, participative, integrated, transparent, sustainability and the factors considered, involvement, international standards, and decision making. Table 4.3 provides a more detailed summary of the key strengths and weaknesses evident in the VIAA EIA process.

Table 4.3: VIAA Evaluation Results

<i>IAIA Best Practice Criteria</i>	Rating	Strengths	Major Deficiencies
1. <i>Purposive</i>	Met	<ul style="list-style-type: none"> • Qualifications and training of AEC contribute to completion of an EIA having appropriate levels of protection • Completion of EIA report used to inform decisions • Consideration of new research, technology and standards when making decisions • Interpretation of comprehensive definitions helps inform decisions • Required compliance with environmental standards ensures environment and community well-being is protected • Possible scoping meetings between key stakeholders ensures environment and community well-being is protected • Creation of follow-up programs ensures environment and community well-being is protected 	
2. <i>Rigorous</i>	Met	<ul style="list-style-type: none"> • Assessment level correlates to project scale ensuring science, methods and techniques employed best suit a given project • AEC helps to apply best practicable science by recruiting experts when appropriate to the scale and complexity of a proposed project • Implementation of technically feasible mitigation measures ensure use of best 	

		<p>science</p> <ul style="list-style-type: none"> • Identification of new research, technology and standards ensures use of best science, methods and techniques 	
3. <i>Practical</i>	Met	<ul style="list-style-type: none"> • Completion of EIA report is a process output to aid in problem solving • Use of environmental standards as EIA information to aid in problem solving • Implemented mitigation measures are EIA outputs with the aim of problem solving • Role of AEC to develop adequate problem solving methods ensures EIA information and outputs are acceptable to and able to be implemented by proponents 	
4. <i>Relevant</i>	Partially met	<ul style="list-style-type: none"> • Required hiring of qualified AEC to complete EIA ensures employ of sufficient, reliable and usable information • EIA report must consider various documented factors which aid in ensuring information employed is sufficient for making decisions • Environment Department review of EIA report ensures no information gaps 	<ul style="list-style-type: none"> • No documented policy ensuring sufficient, reliable and usable information is employed • No documented list of criteria to determine acceptability of proposed AEC
5. <i>Cost-effective</i>	Met	<ul style="list-style-type: none"> • Project proponent and AEC are responsible for determining the levels of information, time, resources and methods employed in an EIA, thereby ensuring the variables are acceptable to a given proponent 	
6. <i>Efficient</i>	Partially met	<ul style="list-style-type: none"> • Project proponent and AEC are responsible for establishing the minimum cost burden of 	<ul style="list-style-type: none"> • No measure to impose a minimum cost burden of an EIA on participants other than

		an EIA on themselves	the project proponent that is consistent with achieving EIA requirements and objectives
7. <i>Focused</i>	Met	<ul style="list-style-type: none"> • AEC duty to identify and evaluate environmental effects through use of environmental standards • AEC role to identify and evaluate key issues through consideration of public comments • Comprehensive definitions aid in establishing environmental attributes to be considered • Possible scoping meetings ensure appropriate effects and issues to be considered in decision making are identified • Use of previous assessments as precedents in determining appropriate focus • Advice from internal and external sources help identify impacts and issues of significance 	
8. <i>Adaptive</i>	Met	<ul style="list-style-type: none"> • AEC duty to identify any new realities, issues and circumstances of a proposal under review thereby ensuring process integrity • Level of assessment must be appropriate for its scale, meaning the level of assessment would need to be changed for any new reality, issue or circumstance that influences the project scale • EIA process relies on Environmental Advisory Committee and follow-up programs to provide iterative feedback 	

		<ul style="list-style-type: none"> • Authoritative role as landlord ensures project operators deal with unanticipated effects in an iterative manner 	
9. <i>Participative</i>	Partially met	<ul style="list-style-type: none"> • EIA report requirement to consider public comments • Possible involvement of interested and affected publics in the master planning process, which may be used for individual assessments • Possible involvement of interested and affected publics in individual assessments • Public parties included in the Environmental Advisory Committee could provide input on individual assessments • Process for public access to EIA documents 	<ul style="list-style-type: none"> • Only one documented measure addressing public input, which may inhibit overall public participation
10. <i>Interdisciplinary</i>	Met	<ul style="list-style-type: none"> • Employment of qualified expert (i.e., the AEC) to conduct EIA • AEC responsible for ensuring appropriate techniques are employed through identification of new research, technology and standards • AEC recruits relevant experts when appropriate to the scale and complexity of a proposed project • When a review panel is necessary, appointment of panel members are from various research disciplines • Use of traditional knowledge whenever relevant 	
11. <i>Credible</i>	Met	<ul style="list-style-type: none"> • AEC must be qualified and is usually 	

		<p>professionally designated with the aim of assuring professionalism, rigor, fairness, objectivity, impartiality and balance</p> <ul style="list-style-type: none"> • Seeking input through public consultation helps to ensure the indicators of credibility are met • Environment Department reviews work of the AEC as a means of independently verifying its accuracy • Review of field reviews by an independent professional ensure independent checks and verification once follow-up practices are underway • Transport Canada regularly reviews VIAA environmental management programs, one of which is EIA 	
<i>12. Integrated</i>	Partially met	<ul style="list-style-type: none"> • Comprehensive definitions relate how the social, economic and biophysical aspects associated with the potential environmental effects of a project are to be interpreted during an EIA 	<ul style="list-style-type: none"> • The EIA process does not consider interrelationships between social, economic and biophysical effects of a project that are not specifically related to a change in the environment caused by the project
<i>13. Transparent</i>	Partially met	<ul style="list-style-type: none"> • Intent and factors to be considered in an EIA make the process clear and easily understood, while identifying what should be taken in to account when making decisions • Identification of potential environmental effects acknowledges the limitations and difficulties associated with a project • AEC role to identify new information can 	<ul style="list-style-type: none"> • Absence of prescriptive public access measures signals a lack of transparency • Factors taken into consideration when making decisions are not evaluated using specified criteria, reducing transparency in the decision making process

		<p>help the EIA process to adapt, and thereby respond to limitations and difficulties evident in a proposed project</p>
<i>14. Systematic</i>	Met	<ul style="list-style-type: none"> • Comprehensive definitions help to establish what information is relevant to an affected environment • Intent of EIA study and list of factors to be considered in an EIA report ensure all relevant information on the affected environment is adequately considered • Possible scoping meetings help to identify all relevant information that requires consideration • AEC role to identify new research, technology and standards ensures all relevant information is considered • Documented and informal measures to evaluate proposed alternatives and their impacts • Documented and informal practices to identify, monitor and investigate residual effects
<i>15. Application of EIA Process – Timing</i>	Met	<ul style="list-style-type: none"> • EIA process triggered prior to granting preliminary approval • AEC role to ensure compliance with the environmental standards throughout design, construction and operation phases • Decommissioning or destruction of a facility is considered to be under the scope of a project, making it necessary to again

		initiate the facility permit process	
<i>16. Application of EIA Process – Project Inclusion</i>	Met	<ul style="list-style-type: none"> • EIA process is applied to all projects the Environment Department deems may result in potentially significant effects • Professional judgement, previous experience, and information from completed environmental checklists are used to gauge whether a project should undergo an EIA 	
<i>17. Application of EIA Process – Sustainability and the Factors Considered</i>	Partially met	<ul style="list-style-type: none"> • Definitions help to frame the application of an EIA in terms of biophysical aspects and socioeconomic factors • Cumulative effects must be considered when completing an EIA report • <i>2007 Environmental Management Plan</i> refers to the concept of sustainable development and its application to operations at YVR, implying all the VIAA environmental programs are subject to the concept’s principles, including EIA • <i>2007 Sustainability Report</i> sets targets and evaluates performance for a range of economic, environmental and social indicators • VIAA communicates sustainability objectives to the AEC prior to consultant approval 	<ul style="list-style-type: none"> • Consideration of socioeconomic factors is limited to those related to project-caused changes in the environment, potentially influencing future community well-being
<i>18. Application of EIA Process – Involvement</i>	Partially met	<ul style="list-style-type: none"> • EIA report requirement to consider public comments, presumably including those comments from communities • Possible public and community involvement 	<ul style="list-style-type: none"> • Only one documented measure addressing public input, which may inhibit overall public and community involvement • No documented measures addressing

		<p>in the master planning process, individual assessments, and the Environmental Advisory Committee</p> <ul style="list-style-type: none"> • Industry notification when projects may have effects on operations • Possible consultation with industry on a specific project assessment, if warranted by circumstances 	<p>industry involvement in the EIA process</p>
<p>19. Application of EIA Process – International Standards</p>	<p>Partially met</p>	<ul style="list-style-type: none"> • EIA process was developed using the old Environmental Assessment and Review Process Guidelines Order, in addition to CEAA and its regulations • Canadian Airport Council’s voluntary EIA standard is used as a guide for some stages of the VIAA process • U.S. Federal Aviation Authority EIA standards are used sparingly, since the American impact assessment system and requirements are quite different than those of Canada 	<ul style="list-style-type: none"> • No documented requirement to consider internationally agreed measures and activities
<p>20. Screening</p>	<p>Met</p>	<ul style="list-style-type: none"> • Environment Department uses professional judgement, previous experience, and information from completed environmental checklists to determine whether a proposal should be subject to an EIA • Level of detail must be appropriate to the scale of the proposed project • Factors to be considered provide a minimum level of detail required in an EIA report 	

		<ul style="list-style-type: none"> • Professional judgement and previous experience are used to gauge the level of detail necessary • Informal use of CEAA guides to establish the level of assessment necessary, thereby determining the level of detail necessary
<i>21. Scoping</i>	Met	<ul style="list-style-type: none"> • AEC role to identify potential environmental effects and establish significance using defined terms and the environmental standards • Advice solicited from groups internal and external to the VIAA, and possible scoping meetings help to establish issues and impacts of greatest importance • Scope of Environmental Services acts as the terms of reference between the Environment Department, the project proponent and the AEC
<i>22. Examination of Alternatives</i>	Met	<ul style="list-style-type: none"> • Documented requirement to consider the need for and alternatives to a project • Informal procedures to evaluate proposed alternatives and their impacts, using professional judgement and public inputs
<i>23. Impact Analysis</i>	Met	<ul style="list-style-type: none"> • Comprehensive definitions help to frame the application of an EIA in terms of environmental, social and other related factors • AEC role to identify and predict potential environmental effects and establish significance using the environmental

		standards
		<ul style="list-style-type: none"> • Advice solicited from groups internal and external to the VIAA, and possible scoping meetings help to identify the likely environmental, social and other related effects
24. <i>Mitigation and Impact Management</i>	Met	<ul style="list-style-type: none"> • AEC must ensure implementation and effectiveness of mitigation measures • Mitigation measures must be technically and economically feasible • During construction, the AEC must ensure environmental effects from any occurrence are minimized • Professional judgement and past experience used to determine which mitigation measures will be most effective in alleviating adverse environmental effects • Project proponents must have an environmental management plan, but are not required to incorporate mitigation measures directly into the plan • Mitigation measures indirectly incorporated into the VIAA environmental management plan as part of the EIA program
25. <i>Evaluation of Significance</i>	Met	<ul style="list-style-type: none"> • AEC duty to consider environmental effects and the significance of those effects using the environmental standards • Possible scoping meetings, as well as seeking internal and external advice may help to determine the significance of

		<ul style="list-style-type: none"> adverse environmental effects • Process specifically defines residual effect • Informal procedures for determining the importance and acceptability of residual effects 	
26. <i>Preparation of Environmental Impact Statement</i>	Met	<ul style="list-style-type: none"> • AEC must prepare a report establishing potential environmental effects, the significance of such effects, feasible mitigation measures, and relevant comments received from the public and communities • Professional designation of AEC ensures EIA report is impartial 	
27. <i>Review of the Environmental Impact Statement</i>	Met	<ul style="list-style-type: none"> • Informal procedures to ensure the terms of reference are met and the EIA report provides satisfactory assessment of a proposal through Environment Department review of the report before decision making • Process explicitly requires information for decision making to be included in the EIA report 	
28. <i>Decision Making</i>	Partially met	<ul style="list-style-type: none"> • EIA outputs and professional judgement are used to make approval decisions on a proposed project • Facility permit process is used to set the terms and conditions for project implementation 	<ul style="list-style-type: none"> • Process for making decisions is informal and not documented, potentially indicating a lack of institutional memory and consistency
29. <i>Follow-up</i>	Met	<ul style="list-style-type: none"> • Required submittal of a Letter of Compliance and subsequent development of follow-up programs help ensure the terms and conditions of approval are met 	

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- Follow-up programs monitor the impacts of development and the effectiveness of mitigation measures
 - If applied, external audits and internal reviews would help to strengthen future EIA applications and optimize environmental management
-

My comparative research also identified several important areas in which the VIAA EIA process differs from that of its proposed CEAA counterpart. Table 4.4 describes the core differences between the two processes and indicates which process best meets each of the IAIA Principles.

Table 4.4: Comparison of the VIAA and CEAA EIA Processes

<i>IAIA Best Practice Criteria</i>	Process that Best Meets Criterion Requirements	Core Differences
1. <i>Purposive</i>	CEAA	<ul style="list-style-type: none"> • VIAA EIA process has measures to allow a project applicant, its AEC and the Airport Authority to meet to discuss application of the Scope of Environmental Services when necessary, enabling tailor-made assessments that meet the individual needs of a project, thus better informing decisions • Canadian Environmental Assessment Agency has developed numerous guidance documents outlining various aspects of the federal EIA process, including measures to establish whether a project is likely to result in adverse impacts. Using such documents helps to inform decisions and ensure environment and community well-being is appropriately protected • CEAA process applies the precautionary principle in the administration of an EIA under the Act, thereby protecting the environment and community well-being • CEAA process has documented requirements that allow for the possibility of public involvement in any of the levels of assessment, thus enhancing protection of the environment and community well-being • CEAA process has measures to allow for quality assurance programs which would ensure environment and community well-being over time • CEAA process has prescribed measures to help establish the level of assessment required.
2. <i>Rigorous</i>	VIAA	<ul style="list-style-type: none"> • VIAA process requires the level of assessment to be appropriate for the scale of the project, thereby ensuring the science, methods and techniques employed are appropriate to address the problems investigated in an EIA • VIAA process requires the AEC to recruit experts when appropriate to the scale and complexity of a project, thereby helping to apply best practicable science • CEAA process has measures enabling the Minister of the Environment to

		<p>establish research and advisory bodies who could aid in identifying what is the “best practicable” science, and which methodologies and techniques should be employed</p> <ul style="list-style-type: none"> • When authorities in addition to the prescribed authority are involved, the CEAA process has measures to identify experts having information and knowledge specific to the project being assessed, thereby allowing for the identification of the “best practicable” science, as well as the methodologies and techniques that should be employed
3. <i>Practical</i>	VIAA	<ul style="list-style-type: none"> • VIAA EIA process allows project proponents and their AEC to develop acceptable and implementable methods of problem solving • Consideration of technically and economically feasible mitigation measures is the only means by which the CEAA process ensures EIA information and outputs are acceptable to and able to be implemented by project proponents
4. <i>Relevant</i>	CEAA	<ul style="list-style-type: none"> • VIAA process requires the employ of a qualified AEC, thereby ensuring sufficient, reliable and usable information • VIAA Environment Department review of the EIA report helps to ensure all information provided is sufficient • CEAA process allows for an airport authority to request employ of an AEC, thereby ensuring sufficient, reliable and usable information • CEAA process enables establishment of research and advisory bodies and entering into agreements and arrangements with other jurisdictions, allowing for collection of sufficient, reliable and usable information. However, these measures are discretionary and are not applied to the assessments of all projects • CEAA class screening assessments must consider local circumstances and cumulative effects, thereby ensuring sufficient information for decision making • CEAA comprehensive studies require sufficient information before reporting to the Minister of Transport

		<ul style="list-style-type: none"> • CEAA panel reviews appoint persons with expert knowledge to collect sufficient, reliable and usable information to aid in making decisions
5. <i>Cost-effective</i>	VIAA	<ul style="list-style-type: none"> • VIAA process relies on a project proponent and AEC to determine the levels of information, time, resources and methods employed in an assessment in order to achieve EIA objectives • Under the CEAA, the Governor in Council may prescribe specific time limits for environmental assessment and follow-up programs • Under the CEAA, when authorities in addition to a prescribed authority are involved, a federal environmental assessment coordinator may establish time lines to ensure EIA obligations are met in a timely manner • The Canadian Environmental Assessment Registry ensures public access to EIA records and provides notice of assessments in a timely manner • CEAA process has no measures to specifically identify the limits of available information, resources and methodology in which EIA objectives should be met
6. <i>Efficient</i>	CEAA	<ul style="list-style-type: none"> • Under the VIAA, project proponent and AEC are responsible for establishing the minimum cost burden of an EIA on themselves • Under the CEAA, the Governor in Council may prescribe minimum time burdens for environmental assessment and follow-up programs • Under the CEAA, when authorities in addition to a prescribed authority are involved, a federal environmental assessment coordinator may establish minimum time burdens to ensure EIA obligations are met • The Canadian Environmental Assessment Registry ensures public access to EIA records and provides notice of assessments in a timely manner • CEAA process has no measures to specifically identify the minimum financial burden on project applicants, but employs the Participant Funding Program to establish a minimum financial burden on participants other than the proponent
7. <i>Focused</i>	Both	<ul style="list-style-type: none"> • VIAA process uses the environmental standards to identify and evaluate environmental effects

		<ul style="list-style-type: none"> • VIAA process uses possible scoping meetings to appropriately identify effects and issues necessary to consider • VIAA process sometimes uses previous assessments as precedents in determining appropriate focus • VIAA process sometimes uses advice from internal and external sources to help identify impacts and issues of significance • VIAA process only documents required consideration of public comments, with no other prescribed policies • CEAA process has explicitly documented a greater number of factors to be considered in an EIA, depending on the level of assessment • CEAA process has prescribed public participation measures for all levels of EIA • CEAA guidance documents aid in identifying which environmental effects of a project are significant
8. <i>Adaptive</i>	VIAA	<ul style="list-style-type: none"> • VIAA process relies on the AEC to adjust the required level of assessment to any realities, issues and circumstances that influence the scale of the proposal under review • VIAA process uses the Environmental Advisory Committee as a means of attaining iterative feedback • VIAA uses authoritative role as landlord to ensure project operators deal with unanticipated effects in an iterative manner • CEAA process does not have prescribed measures to adjust for realities, issues and circumstances for all assessment levels
9. <i>Participative</i>	CEAA	<ul style="list-style-type: none"> • VIAA process has only one documented measure addressing public input. The absence of other prescribed means of public involvement may inhibit overall public participation • VIAA may involve interested and affected publics in master planning • CEAA process has prescribed requirements to either consider or conduct public participation programs in every level of assessment

		<ul style="list-style-type: none"> • CEAA process uses the Canadian Environmental Assessment Registry as a tool to inform the interested and affected public access regarding any EIA information and outputs released • CEAA process includes the Participant Funding Program to facilitate public involvement in an EIA
<i>10. Interdisciplinary</i>	Both	<ul style="list-style-type: none"> • VIAA process uses an AEC to ensure appropriate techniques are employed through identification of new research, technology and standards • VIAA process relies on AEC to recruit relevant experts when appropriate to the scale and complexity of a proposed project • VIAA process has an informal policy to use traditional knowledge whenever relevant • CEAA process has means to establish research and advisory bodies to assist in considering effects and issues from multiple disciplines • CEAA process has documented mandatory requirements to consider traditional knowledge in comprehensive studies and panel reviews, with discretionary powers to do so in a screening-level assessment • CEAA provides guidance materials to direct the consideration of traditional knowledge
<i>11. Credible</i>	VIAA	<ul style="list-style-type: none"> • VIAA process requires the Environment Department to review the work of the AEC as a means of independently verifying its accuracy • VIAA process includes a review of field reviews by an independent professional to insure checks and verifications once follow-up procedures are underway • VIAA process is subject to review of Transport Canada on a regular basis • VIAA process relies on professional designation of AEC to ensure professionalism, rigor, fairness, objectivity, impartiality and balance • CEAA process allows for Canadian Environmental Assessment Agency to make requests for EIA information in support of quality assurance programs. Such requests aim at assuring independent checks and

		<p>verifications are carried out. However, it is unclear at which stages such checks and verifications would be applied</p> <ul style="list-style-type: none"> • CEAA process allows for a third party to conduct an EIA, enabling Airport Authorities across Canada to use different evaluative frameworks to assess a third party's credibility. This may reduce consistency in application of the process nationwide
<i>12. Integrated</i>	Both	<ul style="list-style-type: none"> • There are no core differences between the two EIA processes
<i>13. Transparent</i>	CEAA	<ul style="list-style-type: none"> • VIAA process exhibits an absence of documented public access measures, signalling a lack of transparency • VIAA process does not use weighted criteria when making decisions, thus reducing transparency in the decision making process • CEAA includes the Canadian Environmental Assessment Registry to provide the public with means of accessing EIA information • CEAA provides guidance materials to gauge whether a potentially adverse effect is significant, thereby enabling appropriate decisions
<i>14. Systematic</i>	Both	<ul style="list-style-type: none"> • VIAA process specifically defines residual effect • VIAA process includes informal procedures to consider proposed alternatives and their impacts using professional judgement • CEAA process does not specifically define residual effect, but implies such effects would be monitored as part of follow-up procedures • CEAA process includes guidance materials to aid in evaluating proposed alternatives and their impacts
<i>15. Application of EIA Process – Timing</i>	VIAA	<ul style="list-style-type: none"> • VIAA process triggered prior to granting preliminary approval • VIAA process ensures compliance with the environmental standards throughout design, construction and operation phases • VIAA process considers decommissioning or destruction of a facility to be under the scope of a project, making it necessary to again initiate the facility permit process. This allows for a more tailored assessment of decommissioning and destruction activities

		<ul style="list-style-type: none"> • CEAA process identifies several ways in which an EIA is triggered • CEAA process requires EIA to consider construction, operation, modification, decommissioning, abandonment and other undertakings in relation to a project • CEAA process does not specifically call for application of an EIA during the design phase of a project, but requires an EIA be initiated as early as possible in the planning stages, before irrevocable decisions are made
<p>16. Application of EIA Process – Project Inclusion</p>	<p>VIAA</p>	<ul style="list-style-type: none"> • VIAA process is applied to all projects the Environment Department deems may result in potentially significant effects • VIAA process relies on professional judgement, previous experience, and information from completed environmental checklists to gauge whether a project should undergo an EIA • CEAA process is applied if a physical activity qualifies as a physical work as defined in the Act, is contained in the <i>Inclusion List Regulations</i>, or is not included in the <i>Exclusion List Regulations, 2007</i> • CEAA process may not be initiated when dealing with an environmental or public health emergency • CEAA process includes a guidance document to help in determining whether the Act applies • CEAA exclusion list enables some development proposals to escape environmental assessment, even if adverse effects are likely
<p>17. Application of EIA Process – Sustainability and the Factors Considered</p>	<p>CEAA</p>	<ul style="list-style-type: none"> • VIAA 2007 <i>Environmental Management Plan</i> refers to the concept of sustainable development and its application to operations at YVR, implying all the Airport Authority environmental programs are subject to the concept’s principles, including environmental impact assessment • VIAA 2007 <i>Sustainability Report</i> sets targets and evaluates performance for a range of economic, environmental and social indicators • VIAA communicates sustainability objectives to the AEC prior to consultant approval • VIAA has not explicitly documented the concept of sustainability into

		<p>EIA documentation</p> <ul style="list-style-type: none"> • CEAA process directly incorporates the concept and principles of sustainable development into the Act and proposed regulations
<p><i>18. Application of EIA Process – Involvement</i></p>	<p>CEAA</p>	<ul style="list-style-type: none"> • VIAA process allows for possible public and community involvement in the master planning process, individual assessments, and the Environmental Advisory Committee • VIAA process has only one documented measure addressing public input, which may inhibit overall public and community involvement • VIAA process includes industry notification when projects may have effects on operations • VIAA process includes possible consultation with industry on a specific project assessment, if warranted by circumstances • VIAA process has no documented measures addressing industry involvement in the EIA process • CEAA process has numerous legislated measures addressing public involvement and input, presumably extending to communities and industries affected by a proposal • CEAA process requires consideration of community knowledge in comprehensive studies and panel reviews. Consideration of community knowledge is discretionary for screening assessments • CEAA process includes the Participant Funding Program to facilitate public and community involvement in an EIA
<p><i>19. Application of EIA Process – International Standards</i></p>	<p>VIAA</p>	<ul style="list-style-type: none"> • VIAA process was developed using the old Environmental Assessment and Review Process Guidelines Order, in addition to CEAA and its regulations • VIAA system uses the Canadian Airport Council’s voluntary EIA standard as a guide for some stages of its own process • VIAA process uses the U.S. Federal Aviation Authority EIA standards sparingly, since the American impact assessment system and requirements are quite different than those of Canada

		<ul style="list-style-type: none"> • CEAA process used some aspects of the Environmental Assessment and Review Process Guidelines Order when being developed • It's unclear whether international standards were used in the development of the CEAA
20. Screening	Both	<ul style="list-style-type: none"> • VIAA process is applied to all projects the Environment Department deems may result in potentially significant effects • VIAA process calls for the level of detail to be appropriate to the scale of the proposed project • VIAA process relies on professional judgement, previous experience, and information from completed environmental checklists to gauge whether a project should undergo an EIA and the level of detail necessary • VIAA process does not document all screening measures, indicating a lack of institutional memory • CEAA process is applied if a physical activity qualifies as a physical work as defined in the Act, is contained in the <i>Inclusion List Regulations</i>, or is not included in the <i>Exclusion List Regulations, 2007</i> • CEAA process may not be initiated when dealing with an environmental or public health emergency • CEAA process includes guidance documents to help in determining whether a proposal is subject to an EIA and what level of assessment and detail is necessary
21. Scoping	VIAA	<ul style="list-style-type: none"> • VIAA process uses AEC to identify impacts and issues associated with a project, and employs the environmental standards to evaluate those impacts and issues to determine importance • VIAA process uses possible scoping meetings, and advice from internal and external sources to identify effects and issues of importance • VIAA process only documents required consideration of public comments, with no other prescribed policies • VIAA process uses the Scope of Environmental Services as a terms of reference between the Environment Department, the project proponent

		<p>and the AEC</p> <ul style="list-style-type: none"> • CEAA process requires consideration of effects and issues, which are presumably identified by EIA practitioners • CEAA process has prescribed public participation measures for all levels of EIA that can aid in identifying issues and impacts likely to be important • CEAA guidance documents aid in evaluating environmental effects and issues for significance • CEAA process fixes a terms of reference only in cases where a panel review assessment is conducted
<i>22. Examination of Alternatives</i>	Both	<ul style="list-style-type: none"> • VIAA process includes informal procedures to evaluate alternatives and their impacts using professional judgement • CEAA process includes guidance materials to aid in evaluating proposed alternatives and their impacts
<i>23. Impact Analysis</i>	VIAA	<ul style="list-style-type: none"> • VIAA process uses AEC to identify environmental, social and other related effects associated with a project • VIAA process uses possible scoping meetings, and advice from internal and external sources to identify effects • CEAA process requires consideration of environment, social and other related effects, but has no means by which such effects are to be identified
<i>24. Mitigation and Impact Management</i>	VIAA	<ul style="list-style-type: none"> • During construction, the VIAA process assigns AEC duty to ensure environmental effects from any occurrence are minimized • VIAA process employs professional judgement and past experience to determine which mitigation measures will be most effective in alleviating adverse environmental effects • VIAA process requires project proponents to have an environmental management plan, but does not require mitigation measures to be directly incorporated into the plan • Mitigation measures are indirectly incorporated into the VIAA

		<p>environmental management plan as part of the EIA program</p> <ul style="list-style-type: none"> • CEAA process does not have an evaluative framework with which to establish the mitigation measures that are most effective • CEAA process does not document any requirement to incorporate mitigation measures into an environmental management plan
25. <i>Evaluation of Significance</i>	VIAA	<ul style="list-style-type: none"> • VIAA process may hold scoping meetings and seek internal and external advice to help determine the significance of adverse environmental effects • VIAA process specifically defines residual effect • VIAA process has informal procedures for determining the importance and acceptability of residual effects • CEAA process does not specifically define residual effect, but implies consideration of such effects when deciding whether a project can be carried out if adverse environmental effects are justified • CEAA guidance documents suggest using cost-benefit analyses to determine the acceptability of residual effects, but do not specifically explain how to conduct a cost-benefit analysis
26. <i>Preparation of Environmental Impact Statement</i>	VIAA	<ul style="list-style-type: none"> • VIAA process relies on the professional designation of an AEC to ensure the EIA report is impartial • CEAA process allows for a third party to conduct an EIA, enabling Airport Authorities across Canada to use different evaluative frameworks to assess a third party's qualifications. As such, impartiality of a third party responsible for carrying out the EIA and subsequent report may be determined inconsistently nationwide
27. <i>Review of the Environmental Impact Statement</i>	VIAA	<ul style="list-style-type: none"> • VIAA process informally ensures the terms of reference are met and the EIA report provides satisfactory assessment of a proposal by having the Environment Department review the report before making a decision • CEAA process has measures to ensure collection of additional information required for decision making • CEAA process does not have documented procedures to ensure the terms of reference are met by the EIA report

		<ul style="list-style-type: none"> • CEAA process has only a single documented measure to ensure the EIA report provides satisfactory assessment of a proposal. This measure only applies to reports completed by a review panel
28. <i>Decision Making</i>	CEAA	<ul style="list-style-type: none"> • VIAA process uses EIA outputs and professional judgement to make approval decisions on a proposed project • VIAA system uses the facility permit process to set the terms and conditions for project implementation • VIAA procedures for making decisions are informal and not documented, potentially indicating a lack of institutional memory and consistency • CEAA process explicitly documents the decision making process for all levels of assessment, with an increasing number of steps required to make a decision with higher tiers of assessment • CEAA process requires mitigation measures and follow-up programs to be implemented when a project is approved, indicating such procedures are the terms and conditions for the implementation of a proposal
29. <i>Follow-up</i>	VIAA	<ul style="list-style-type: none"> • VIAA process requires submittal of a Letter of Compliance and subsequent development of follow-up programs to help ensure the terms and conditions of approval are met • VIAA process uses follow-up programs to monitor the impacts of development and the effectiveness of mitigation measures • If applied, external audits and internal reviews under the VIAA process would help to strengthen future EIA applications and optimize environmental management • VIAA process has informal measures to ensure compliance with EIA decisions • CEAA process defines and explicitly documents the steps in a “follow-up program” • CEAA follow-up programs are presumably intended to ensure the terms and conditions of approval are met, to monitor the impacts of development by verifying the accuracy of the assessment, and to

determine the effectiveness of mitigation measures, thereby strengthening future mitigation

- CEAA process uses a five-year review process to strengthen future EIA applications
 - Canadian Environmental Assessment Agency may examine and report on implementation of the EIA process to optimize environmental management
 - CEAA process has no documented measures to impose penalties if a project is in non-compliance with EIA outputs, but there may be penalties associated with other permitting processes or environmental legislation
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5. Recommendations and Conclusions

5.1 Introduction

At the beginning of this paper, I discussed the CEAA amendments introduced in 2003. One of these amendments enabled federal legislators to pass regulations requiring prescribed authorities to conduct EIAs of projects carried out on federal lands. At the time of this report, such regulations governing the completion of impact assessments by airport authorities had yet to pass. However, regulations for this purpose were proposed in June of 2005. As such, I identified a need to evaluate the Vancouver International Airport Authority's environmental impact assessment process, followed by a comparison to the Canadian Environmental Assessment Act and proposed regulations for airport authorities. This analysis was done in an attempt to see whether the proposed CEAA standardized EIA process for all airport authorities operating on federal lands would improve overall environmental assessment practice. I used the IAIA Principles of EIA Best Practice as a framework with which to evaluate and compare the two assessment processes.

The evaluation highlighted a number of differences between the two EIA processes. When looking at IAIA basic principles, the VIAA process is superior for five principles, the CEAA process better meets requirements for five principles, and the processes equally meet four principles. Regarding operating principles, the VIAA system best meets requirements for ten principles, the CEAA process is stronger for three principles, and the processes equally meet the requirements of two principles.

Based on these results, it could be argued that the EIA system employed by the Airport Authority is the better process, having better met the requirements for fifteen out of twenty-nine principles. However, the criteria used in this paper's evaluation and comparison have not been weighted to establish those principles of greatest significance. Thus, it is difficult to definitively assert that either process is superior overall.

Nevertheless, there are important lessons that can be learned from this evaluation for both impact assessment processes. The evaluative comparison on each criterion reveals the areas in which the processes are lacking and suggests ways in which deficiencies can be addressed.

5.2 Lessons for the VIAA EIA Process

As a result of the evaluation and comparison completed in this paper, I have identified a number of important lessons for the Airport Authority environmental assessment process. These lessons have been derived from procedures employed in the CEAA process, as well as ideals evident in the IAIA Principles. By developing means to incorporate the lessons, the VIAA EIA process can significantly improve its overall value as an environmental assessment and management tool.

Of greatest importance, the VIAA should develop a detailed procedures manual outlining their complete EIA process. In doing so, the VIAA will identify requirements and provide guidance to all EIA participants, including the project proponent, the AEC, and the Environment Department of the Airport Authority. A comprehensive procedures manual will help to ensure that the EIA process is transparent and consistently applied from assessment to assessment; that project proponents, AECs and other stakeholders are fully informed of the details of the process; and that these details will not be forgotten or ignored when there are personnel changes in the Environment Department.

In general, developing a procedures manual will improve the transparency, stringency, reproducibility, efficiency and credibility of the overall impact assessment process (Zobel et al. 2002). Further, the initial investment of time necessary to develop a procedures manual is likely to save time later in EIA training, assessment completion, follow-up procedures, and emergency response (Williams and Todd 1997).

In addition to the policies and procedures already documented by the Airport Authority, the VIAA EIA process should develop the following written measures, procedures and policies in an all-inclusive procedures manual:

- Establishment of the qualifications necessary for an approved environmental consultant. Perhaps a list of criteria should be developed to aid in determining whether a consultant is acceptable;
- A list of those AEC's that have been approved by the Environment Department;
- Identification and description of the different levels of assessment possible under a VIAA impact assessment and the circumstances in which each will be triggered;
- A list of the internationally agreed measures and activities with which the EIA process is in accordance;
- A list of all the guidance documents from the CEAA and other sources employed as part of the VIAA assessment process;
- A compiled set of the environmental standards and a means with which to determine which standards are applicable to which types of projects;
- A process to ensure that the cost burden of an EIA on all participants is minimized in terms of time and money, consistent with achieving EIA requirements and objectives;
- Explicit timelines for completion of different EIA phases;
- A publicly available registry or list of all projects having been proposed or approved for development to ensure the public and local industries are aware of EIA matters;
- A comprehensive public participation program. This program should include measures to ensure public access to EIA information and outputs, to ensure involvement and input from industries and communities, to make certain that public comments are specifically addressed when making decisions, and to provide guidance in determining the extent of public involvement required for different types of projects;

- A requirement to use sufficient, reliable and usable information in all levels of assessment, with specific consideration of traditional knowledge when necessary;
- A set of criteria or appropriate guidance materials, beyond that provided in the environmental checklists, to help determine which effects may be of greatest significance, especially within a class of projects;
- Guidance materials to aid in incorporating the concept and principles of sustainable development directly into EIA activities;
- A requirement to monitor, investigate and minimize residual effects, not just to provide a description of such effects;
- Guidance materials outlining how best to choose appropriate mitigation measures;
- Procedures to ensure an EIA report provides a satisfactory assessment of a proposal and meets the terms of reference document, Scope of Environmental Services;
- A more standardized decision-making process for project approval, with a requirement to explicitly consider EIA information and outputs;
- Establishment of operational follow-up programs which will take over where the construction field reviews leave off;
- Iterative processes to ensure an EIA incorporates lessons learned throughout a proposal's life cycle;
- Formalized environmental audit processes to strengthen future EIA applications and mitigation measures;
- Explicit enforcement measures to ensure project applicants comply with the decisions of an EIA; and,
- A process for independent checks and verification for all stages of assessment other than during follow-up, which already undergoes independent scrutiny.

Some of the processes listed above are already practiced informally by the VIAA, often relying on past experience and professional judgement to gauge significance and make decisions. However, it is important to maintain procedures and policies that are documented, thereby ensuring institutional memory, consistency, and transparency.

Documenting these procedures does not necessarily mean that professional judgement can no longer be used. Instead, such judgement can be built into the process and explicitly documented in policies.

There are other faults present in the VIAA impact assessment process from which the Airport Authority can learn. For instance, the VIAA process can learn from the IAIA Principles by widening the range of socioeconomic factors considered. The current definition for “environmental effect” includes only those impacts directly associated with changes in the environment caused by the project. In addition, the VIAA employs no social impact assessment methods that are explicitly tied to EIA. Although the CEAA process is limited in the same way, the VIAA process would be more purposive, focused, and integrated if either the definition of an environmental effect was changed to include impacts not related to project-caused changes in the environment, or the Airport Authority adopted procedures for social impact assessment. Such actions would also result in a process that is more effective at scoping, impact analysis and the consideration of factors consistent with the concept and principles of sustainable development.

Lastly, the transparency and acceptability of the VIAA process would greatly benefit if there were measures requiring justification for project approval when EIA outputs recommend otherwise. This could possibly be achieved by allowing for further public scrutiny before granting approval under these circumstances. Of course, most proposed projects would not be approved if an AEC found significant adverse environmental effects. However, including a justification requirement would improve the Airport Authority process by making decision makers more accountable to the interested and affected public.

If implemented, all of the above-mentioned recommendations would aid in improving the VIAA EIA process. However, some lessons are more practical, and may have a more significant effect on improving assessment outcomes than others. Specific priorities for the Airport Authority EIA process include compiling a set of all environmental standards that may apply to proposed projects on airport lands, developing

timelines for each phase of the assessment process, documenting a comprehensive public participation program with measures identifying when access to information and direct involvement are necessary, and initiating a regularly-scheduled audit program to strengthen future assessment activities. By implementing these lessons of greatest importance, outcomes that result from the VIAA EIA process should be more thorough, consistent, transparent, efficient and iterative.

5.3 Lessons for the CEAA EIA Process

Some of the lessons for the VIAA process apply to its CEAA counterpart. For instance, application of the CEAA process would be more consistent with the concept and principles of sustainable development if either social impact assessment procedures were included in the Act, or the definition of “environmental effect” was changed to include those social impacts not directly resulting from project-caused changes in the environment.

Another lesson for the CEAA is that, other than in panel review, more experts in relevant disciplines should be employed during completion of impact assessments. Otherwise, some impacts may not be adequately considered since few EIA practitioners possess all knowledge and information relevant to a proposed project. Although there are CEAA measures to form research and advisory bodies, there is no documentation detailing under what conditions such bodies would be required. Thus, the federal EIA process would benefit from the inclusion of additional experts to assess projects and their likely effects.

One of the strengths present in the CEAA EIA process is the wealth of documentation explaining and supplementing aspects of the Act, proposed regulations, and guidance materials. However, it is evident many lessons can be learned by the CEAA process from the best practice principles espoused by the IAIA. Specifically, additional documentation is required in a variety of areas, including the following measures, procedures and policies:

- An updated and compiled set of environmental standards applicable to impact assessments for different types of project classes;
- A set of required qualifications to gauge acceptability when an airport authority delegates its EIA duties to a third party;
- A list of the internationally agreed measures and activities with which the EIA process is in accordance;
- An explicit requirement that EIA procedures be applied during design phases of a project, not just as early as possible in planning stages;
- Revised regulations for exclusion that include only those projects proven to result in no significant adverse effects after use of appropriate mitigation measures;
- A terms of reference document for screening- and comprehensive study-level assessments;
- Establishment of who is responsible for identifying any realities, issues and circumstances evident in a proposal under review – the CEAA and proposed regulations do not specifically assign a role for identifying these indicators of being adaptive;
- More explicit processes to ensure use of sufficient, reliable and usable information in all levels of assessment;
- More explicit EIA timelines;
- Additional measures to ensure that the financial burden of an EIA on all participants is minimized consistent with achieving EIA requirements and objectives;
- Guidance measures to identify how the limits of available information, resources and methodology in which EIA objectives should be met are determined, in order to ensure cost-effectiveness;
- Identification of who is responsible for determining the likely environmental effects of a project – the CEAA and proposed regulations require only that a responsible authority or prescribed authority consider potentially adverse environmental effects, but do not specifically establish who is responsible for identifying such effects;

- Guidance materials on how to appropriately determine whether a significant adverse environmental effect is justified;
- Documented best practice procedures for cost-benefit analysis in instances where such analyses are used to justify adverse environmental effects. Externalities should be appropriately considered;
- A definition for “residual effect”, with explicit measures to deal with such effects;
- Procedures allowing for greater involvement and input of industries and communities;
- Guidance materials outlining how best to choose appropriate mitigation measures;
- A requirement that the EIA report meets the terms of reference document;
- Measures to ensure EIA information and outputs are acceptable to and able to be implemented by project proponents, other than the requirement to employ technically and economically feasible mitigation measures;
- A requirement to specifically address public comments as part of the decision making process;
- Procedures to ensure use of EIA information when making decisions, perhaps with a requirement for further public scrutiny if EIA recommendations are not followed;
- Measures to explicitly assign responsibility for ensuring an EIA report provides satisfactory assessment of a proposal, perhaps to the Canadian Environmental Assessment Agency or an independent third party;
- A set of criteria to determine when the quality assurance program is required; and,
- Prescribed enforcement procedures to ensure project applicants comply with the decisions of an EIA.

If the above-noted measures are implemented in future versions of the Act, proposed regulations for airport authorities, and guidance materials, the CEAA environmental assessment process will be much improved.

5.4 Limitations of Research

Since the proposed airport authority regulations have not come into effect, there are still uncertainties as to how the regulations will apply in combination with the CEAA. As such, I assumed that sections of the Act referring only to “responsible” authorities, but not those that are “prescribed”, do not apply to an airport authority. Since development of the proposed regulations is still in progress, these and other aspects of the regulations may change before coming into effect. Thus, appropriate consideration must be given to any future revisions.

The evaluation and comparison was also limited by the breadth of my research. Specifically, other than the two officials I interviewed from the CEAA, I did not solicit any views and opinions of stakeholders involved in either EIA process. These could include members of the public or project proponents who had been previously involved in one of the two EIA processes. It is important to recognize that the perspectives of these parties are important, and may differ from my own evaluation.

The system of evaluation I employed was quite limited, with each best practice principle being evaluated using only three rating options – met, partially met, and not met. Overall, the coarseness of this evaluation system may have oversimplified some important features of the IAIA principles. Further, the judgement I used to establish ratings was purely subjective. As with the last research limitation, other parties’ interpretations of both EIA processes may differ from my own.

Lastly, I have not applied a weighting mechanism to each of the principles. As such, it is extremely difficult to gauge which EIA process better meets the IAIA principles in their entirety. Nevertheless, the principles still provide a valuable means in which the EIA process can be evaluated for each important aspect and stage of an environmental assessment.

5.5 Recommendations for Future Research

There are at least two different paths for future research. Now that an evaluation of the VIAA EIA process and subsequent comparison to that of the CEAA has been completed, it would be of great benefit to know how the environmental assessment processes of other airport authorities compare to the Act and draft regulations.

The VIAA process is known to be one of the more comprehensive EIA systems employed at airports across the country (S. Robinson, VIAA, pers. comm. 2008). Even if the VIAA process is better than that of the CEAA for some aspects, this may not be the case with other Airport Authorities. As such, it would be valuable to review airport authority EIA processes across Canada to determine whether it is advantageous to standardize environmental assessments of development projects at all national airports. This paper could be used as a baseline for comparison with the EIA processes employed at other national airports.

It may also be of benefit to study stakeholder perceptions of both EIA processes. Such perceptions might help to identify what aspects of the processes need further strengthening. Furthermore, research into stakeholder views may also be able to identify areas in which implementation of the EIA process differs from the policy frameworks.

5.6 Final Comments

After reviewing the VIAA evaluation and comparison to the CEAA, it appears as though the Airport Authority process is superior to its federal counterpart in many regards. This is not overly surprising, as the VIAA system was designed for assessments by a single organization in a defined geographic setting, while the CEAA is intended for more broad use by multiple organizations across Canada. Nevertheless, in this evaluation the Airport Authority process better meets the requirements of IAIA Best Practice Principles in fifteen instances, and equally meets principle requirements six more times. Conversely, the CEAA and proposed regulations better meet these requirements for only eight principles. The comparison shows, at a minimum, that there are a significant

number of areas in which the Airport Authority process would be diminished if forced to switch to the federal EIA system. Put simply, changing EIA practices at YVR will not necessarily result in improved environmental management practices at the airport.

It is also important to consider that the VIAA process only partially met the IAIA Principles on nine occasions out of twenty-nine criteria. As such, there are still a number of areas in which the Airport Authority impact assessment process can improve. That said, it must be noted that in no instances did the VIAA EIA process not meet the requirements of an IAIA Principle. Specifically, there were no principles for which the Airport Authority process had more than two major deficiencies. Thus, the VIAA process has measures to address at least part of each Principle of EIA Best Practice. This may indicate that EIA outcomes from the present system applied at YVR are appropriate for the scale of projects typically assessed. Nevertheless, the recommendations included in this report should provide the VIAA management with a clear notion of the specific steps necessary to meet EIA best practice principles, thereby improving overall environmental management at the airport.

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Appendices

Appendix A: Proposed CEAA Regulations for Airport Authorities

INTERPRETATION

1. The definitions in this section apply in these Regulations

“AA” means an airport authority or the City of Kelowna.

“Act” means the *Canadian Environmental Assessment Act*.

“The Minister” means the Minister of the Environment

APPLICATION

2. These Regulations apply to projects in respect of which paragraphs 9.1(2) (a) to (d) of the Act requires that an environmental assessment be conducted; or when an AA issues a facility permit or building permit under an AA administration or management process that allows a project to be carried out by a third party on federal lands controlled by the AA.

GENERAL

3. The environmental assessment process includes, where applicable,
 - (a) a screening and the preparation of a screening report, if the project is not described in the comprehensive study list;
 - (b) a comprehensive study and the and the preparation of a comprehensive study report ,if the project is described in the comprehensive study list;
 - (c) assessment by a review panel and the preparation of a report; and
 - (d) the design and implementation of a follow-up program.
4. (1) The scope of a project in relation to which an environmental assessment is to be conducted shall be determined by
 - (a) the AA; or
 - (b) if the project is referred to a review panel, the Minister after consulting with the AA and the Minister of Transport

(2) For the purpose of conducting an environmental assessment in respect of two or more projects,

 - (a) the AA; or
 - (b) where at least one of the projects is referred to a review panel, the Minister after consulting with the AA and the Minister of Transport

may determine that the projects are so closely related that they can be considered to form a single project.

(3) Where a project is in relation to a physical work, an environmental assessment shall be conducted in respect of every construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work that is proposed by the proponent or that is, in the opinion of

- (a) the AA, or
- (b) where the project is referred to a review panel, the Minister after consulting with the AA and the Minister of Transport,

likely to be carried out in relation to that physical work.

5. (1) Every environmental assessment of a project shall include a consideration of the following factors:

- (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 would be carried out;
- (b) the significance of those environmental effects
- (c) any comments from the public that are received as part of the environmental assessment process carried out in accordance with these Regulations ;
- (d) technically and economically feasible measures that would mitigate any significant adverse environmental effects of the project; and
- (e) any other matter relevant to the environmental assessment such as the need for the project and alternatives to the project, the consideration of which may be required:
 - (i) in the case of a screening, by the AA,
 - (ii) in the case of a comprehensive study, either by the AA or by the Minister after consultation with the AA, and
 - (iii) in the case of an assessment by a review panel, either by the AA or by the Minister after consultation with the AA and consideration of the nature and complexity of the project.

(2) Every environmental assessment of a project may include a consideration of the following factors

- (a) community knowledge and aboriginal traditional knowledge; and
- (b) the results of a study of the environmental effects of possible future projects in a region, in which an AA or a federal authority has participated outside the scope of the Act or regulations, with other jurisdictions referred to in paragraph 12(5) (a), (c) or (d) of the Act, particularly in considering 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.

6. An AA may not exercise any power or perform any duty or function referred to in subsection 12(1), or section 25 or 34 unless it either makes the decision referred to in paragraph 11(a), 24(1)(a) or (c) or 33 (a) or (c), or uses a class screening report under subsection 16(1).

7. (1) If there is an AA and one or more responsible authorities in relation to a project, subsections 12(1) and (2) of the Act apply, with any modifications that are necessary.

(2) If a project is subject to an environmental assessment under these regulations and also under the Act, the AA could ask the federal environmental assessment coordinator to coordinate the involvement of other bodies in the environmental assessment process carried out under these Regulations. Under the same circumstances, with respect to the environmental assessment process carried out under the Act, the AA could also be invited by the federal environmental assessment coordinator to assist in its coordination activities carried out under the Act.

8. (1) An AA may request that any person or body, or any jurisdiction within the meaning of subsection 12(5) of the Act, carry out any part of the screening or comprehensive study of a project including the preparation of the screening report or comprehensive study report, except the requirement to make a decision under section 11 or subsection 24(1), and may request that the person, body or jurisdiction carry out any part of the design and implementation of a follow-up program.

(2) An AA shall not make a decision under section 11 or subsection 24(1) unless it is satisfied that any delegated duty or function has been carried out in accordance with these Regulations.

SCREENING

9. (1) If a project is not described in the comprehensive study list or in the exclusion list made under paragraph 59(c) of the Act, the AA shall ensure that a screening of the project is conducted and a screening report is prepared.

(2) In respect of a screening, the scope of the factors to be considered under paragraphs 5(1) (a), (b) and (d) and subsection 5(2) shall be determined by the AA.

10. Before making a decision under section 11, where the AA is of the opinion that there are special circumstances surrounding a project that would make the project of interest to the public, the AA

- (a) shall give the public an opportunity to examine and comment on the screening report and any record relating to the project that has been included in the Registry, and shall give adequate notice of that opportunity; and
- (b) may, at any stage of the screening, give the public an opportunity to participate in the screening.

11. After a consideration of the screening report and any comments emanating from public participation in its review as part of a process under section 10, and taking into account the implementation of any technically and economically feasible mitigation measures, the AA shall decide that

- (a) the project is not likely to cause significant adverse environmental effects;
- (b) the project is likely to cause significant adverse environmental effects that cannot be justified in the circumstances;
- (c) it is uncertain whether the project is likely to cause significant adverse environmental effects;
- (d) the project is likely to cause significant adverse environmental effects that may be justified in the circumstances; or
- (e) public concerns warrant a reference of the project to a review panel.

12. (1) If the AA makes the decision referred to in paragraph 11(a) or uses a class screening report under subsection 16(1), it may

- (a) do any act or thing that commits it to carrying out the project in whole or in part;
- (b) make or authorize payments or provide a guarantee for a loan or any other form of financial assistance to the proponent of the project for the purpose of enabling the project to be carried out in whole or in part;
- (c) sell, lease or otherwise dispose of federal lands or any interest in those lands for the purpose of enabling the project to be carried out in whole or in part;
- (d) issue a permit or license, grants an approval or take any other action under an Act of Parliament or any regulation made pursuant to an Act of Parliament; or
- (e) issue a facility permit or building permit under an AA administration or management process that allows a project to be carried out by a third party on federal lands controlled by the AA.

(2) (former subsection 11(2)) Where the AA makes a decision under paragraph 11(a), and decides to take a course of action in line with subsection 12 (1) it shall

- (a) ensure that the technically and economically feasible mitigation measures are implemented; and
- (b) design a follow-up program, if the AA considers it would be appropriate for the project, and ensure its implementation.

(3) If the AA makes any of the decisions referred to in paragraphs 11 (c) to (e), it shall refer the project to the Minister of Transport, who shall submit it to the Minister, who shall refer the project to a review panel.

(4) If the AA makes the decision referred to in paragraph 11(b), the AA shall not exercise any power or perform any duty or function that would permit the project to be carried out in whole or in part.

13. Except when an approved class screening process has been used; the AA shall not make any decision under section 11 before the 15th day after the inclusion on the Internet site referred to in subsection 55.1(1) of the Act of

- (a) notice of the commencement of the environmental assessment; except when an approved class screening process has been used;
- (b) a description of the scope of the project; and
- (c) where the AA, in accordance with section 10, gives the public an opportunity to participate in the screening of a project, a description of the factors to be taken into consideration in the environmental assessment and of the scope of those factors or an indication of how such a description may be obtained.

CLASS SCREENING PROCESS

14. (1) A class screening report would

- (a) define the class of projects to which it applies;
- (b) define the geographic area to which it applies;
- (c) include an environmental evaluation of the potential environmental implications of the projects;
- (d) establish the method for defining whether a project is within the defined class;
- (e) establish the design standards and the mitigation measures to be applied to each project in the class; and
- (f) establish the processes and procedures for implementation of the report.

(2) The Agency may declare a report to be a class screening report if projects of the class described in the report are not likely to cause significant adverse environmental effects when the design standards and mitigation measures described in the class screening report are implemented.

(3) The declaration shall include a statement that the class screening report may be used as

- (a) a replacement for the screening and screening report required by subsection 9(1) and the decision required by section 11, for projects of the class; or
- (b) a model for streamlining the screening required by subsection 9(1) for projects of the class.

15. (1) Before making the declaration, the Agency shall publish, in an appropriate manner, a notice setting out the following information:

- (a) the date on which the draft report will be available to the public
- (b) the place at which copies of it may be obtained; and
- (c) the deadline and address for filing comments on the appropriateness of its use as a replacement or model for screenings for projects of that class.

(2) Before the deadline set out in the notice, any person may file comments with the Agency relating to the appropriateness of the use of the report as a replacement or model for screenings for projects of that class.

(3) Before the Agency makes the declaration, it shall take into consideration any comments filed, and include in the Registry any comments filed by the public.

(4) The Agency shall publish the declaration in an appropriate manner.

16. (1) If a project falls within a class in respect of which a class screening report has been made to which paragraph 14(3) (a) applies, the AA may use the class screening report for the purpose of complying with subsection 9(1) and does not need to make a decision under section 11 with respect to the project, as long as the AA ensures that the design standards and mitigation measures described in the report are implemented.

(2) If a project or part of a project falls within a class in respect of which a class screening report has been made to which paragraph 14(3) (b) applies, the AA may use or permit the use of that report and any screening on which it is based, to the extent appropriate for the purpose of complying with subsection 9(1).

(3) If the AA uses or permits the use of a class screening report under subsection (2), it shall ensure that any adjustments are made to the report that are necessary to take into account local circumstances and any cumulative environmental effects that may result from the project in combination with other projects or activities that have been or will be carried out.

(4) If the Agency determines that a class screening report is no longer appropriate to be used as a replacement or model in conducting screenings of other projects within the same class, the Agency may declare the report not to be a class screening report.

(5) The Agency shall publish the declaration in an appropriate manner.

COMPREHENSIVE STUDY

17. (1) If a project is described in the comprehensive study list, the AA shall ensure public consultation with respect to

- (a) the proposed scope of the project for the purposes of the environmental assessment;
- (b) the factors proposed to be considered in the environmental assessment and the proposed scope of those factors; and
- (c) the ability of the comprehensive study to address issues relating to the project.

(2) After the public consultation, as soon as the AA has sufficient information to do so, it shall

- (a) report to the Minister of Transport, who shall refer the report to the Minister with respect to

- (i) the scope of the project

- (ii) the factors to be considered in the environmental assessment and the scope of those factors,
- (iii) public concerns in relation to the project,
- (iv) the potential of the project to cause adverse environmental effects, and
- (v) the ability of the comprehensive study to address issues relating to the project;

(b) recommend to the Minister of Transport either that the AA continue the comprehensive study or that the Minister refer the project to a review panel.

(3) The Minister of Transport shall refer to the Minister the report described in paragraph (2)(a) and the recommendation described in paragraph (2)(b).

18. (1) The Minister, taking into account the issues with regard to which the AA must report and the recommendation of the AA, shall refer the project to

- (a) the Minister of Transport for referral to the AA so that it may continue the comprehensive study and ensure that a comprehensive study report is prepared and provided to the Minister, to the Minister of Transport, and to the Agency;
or
- (b) a review panel

(2) Despite any other provision of these regulations, if the Minister of Transport refers the project to an AA under paragraph (1) (a), that project may not be referred to a review panel.

19. In addition to the factors in section 5, each comprehensive study of a project shall include a consideration of the following 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 those alternative means;
- (c) the need for and the requirements of the follow-up program for 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.

20. If a project has been referred to an AA under paragraph 18(1)(a), the AA shall ensure that the public is provided with an opportunity, in addition to that provided under subsection 17(1), to participate in the comprehensive study.

21. In respect of a comprehensive study, the scope of the factors to be taken into consideration under paragraphs 5(1) (a), (b) and (d), subsection 5(2) and paragraphs 19(b) to (d) shall be determined for each environmental assessment by the AA.

22. (1) After receiving a comprehensive study report in respect of a project, the Agency shall in order to facilitate public access to the report, publish, in an appropriate manner, a

notice setting out the following information:

- (a) the date on which the comprehensive study report will be available to the public;
- (b) the place at which copies of the report may be obtained; and
- (c) the deadline and address for filing comments on the conclusions and recommendations and any other aspect of the report.

(2) Before the deadline set out in the notice, any person may file comments with the Agency relating to the conclusions and recommendations and any other aspect of the comprehensive study report.

23. (1) The Minister shall, after taking into consideration the comprehensive study report and any comments filed under subsection 22(2), refer the project back to the AA for a decision under subsection 24(1) and issue an environmental assessment decision statement that sets out

- (a) the Minister's opinion as to whether, taking into account the implementation of any mitigation measures that the Minister considers appropriate, the project is or is not likely to cause significant adverse environmental effects; and
- (b) any mitigation measures or follow-up program that the Minister considers appropriate, after having taken into account the views of the AA concerning the measures or the program.

(2) Before issuing the environmental assessment decision statement, the Minister shall, if additional information is necessary or if there are public concerns that need to be further addressed, request that the AA or the proponent ensure that the necessary information is provided, or actions are taken to address those public concerns.

(3) The Minister shall not issue the environmental assessment decision statement before the 30th day after the inclusion, in the Internet site referred to in subsection 55.1(1) of the Act, of

- (a) the notice of the commencement of the environmental assessment
- (b) a description of the scope of the project;
- (c) if the Minister, under paragraph 18(1)(a), refers the project to the Minister of Transport for referral to the-AA to continue a comprehensive study,
 - (i) notice of the Minister's decision to refer the project, and
 - (ii) a description of the factors to be taken into consideration in the environmental assessment and of the scope of those factors or an indication of how the description may be obtained; and
- (d) the comprehensive study report that is to be taken into consideration by the AA under subsection 24(1), or a description of how the report may be obtained.

24. (1) If a project has been referred back to the AA under subsection 23(1), after taking into consideration the comprehensive study report and any comments submitted in

accordance with subsection 22(2), and taking into account the implementation of any technically and economically feasible mitigation measures, the AA shall decide that the project

- (a) is not likely to cause significant adverse environmental effects;
- (b) is likely to cause significant adverse environmental effects that cannot be justified in the circumstances; or
- (c) is likely to cause significant adverse environmental effects that can be justified in the circumstances.

(2) If the Minister issues the environmental assessment decision statement referred to in subsection 23(1) to the effect that the project is likely to cause significant adverse environmental effects, the AA shall not make a decision under subsection (1) without the approval of the Governor in Council.

24.1 If the Governor in Council gives approval to an AA to make a decision under subsection 24(1), if the AA decides that the project is not likely to cause significant adverse environmental effects or is likely to cause significant adverse environmental effects that can be justified in the circumstances., the AA may take a course of action in line with section 25

- 25.** If the AA makes the decision referred to in paragraphs 24(1)(a) or (c), it may
- (a) do any act or thing that commits it to carrying out the project in whole or in part;
 - (b) make or authorize payments or provide a guarantee for a loan or any other form of financial assistance to the proponent of the project for the purpose of enabling the project to be carried out in whole or in part;
 - (c) sell, lease or otherwise dispose of federal lands or any interest in those lands for the purpose of enabling the project to be carried out in whole or in part;
 - (d) issue a permit or licence , grants an approval or take any other action under an Act of Parliament or any regulation made pursuant to an Act of Parliament; or
 - (e) issue a facility permit or building permit under an AA administration or management process that allows a project to be carried out by a third party on federal lands controlled by the AA.

25.1 (former subsection 24(2)) Where the AA makes a decision under paragraph 24(1)(a) or (c), and decides to take a course of action in line with section 25 it shall

- (a) ensure the implementation of the mitigation measures; and
- (b) design a follow-up program and ensure its implementation.

25.2 If the AA makes the decision referred to in paragraph 24(1)(b), the AA shall not exercise any power or perform any duty or function that would permit the project to be carried out in whole or in part.

REVIEW PANEL

26. Subject to section 18(2), the AA may submit a request that a project be referred to a review panel to the Minister of Transport, who shall refer the request to the Minister, if

- (a) a project, taking into account the implementation of any technically and economically feasible mitigation measures, may cause significant adverse environmental effects; or
- (b) public concerns warrant a reference to a review panel.

27. Subject to section 18(2), based on a consideration of the following factors,

- (a) the level and nature of public concern about the project;
- (b) the extent to which the issues of public concern relate to potentially significant environmental effects and to matters under federal jurisdiction;
- (c) any scientific or technical information relating to the project;
- (d) the extent to which, and the manner in which, the project has undergone an environmental assessment, other government review or public review;
- (e) the likely ability of a review panel, if appointed, to complete its work and contribute to resolving issues of public concern; and
- (f) the factors referred to in paragraphs 26(a) and (b),

the Minister, after consulting with the Minister of Transport and the AA, may at any time or on the request of the AA under section 26, refer a project to a review panel.

28. After consulting with the Minister of Transport and the AA, the Minister may enter into an agreement or arrangement with an agency or body established pursuant to an Act of Parliament or of the legislature of a province and having powers, duties or functions in relation to an assessment of the environmental effects of a project respecting the joint establishment of a review panel and the manner in which an assessment of the environmental effects of the project is to be conducted by the review panel

29. (1) If a project is referred to a review panel, the Minister shall, after consulting with the Minister of Transport and the AA, appoint members of the panel and fix the terms of reference of the panel under section 33 of the Act.

(2) Each assessment by a review panel shall take into consideration the factors set out in sections 5 and 19.

(3) In respect of an assessment by a review panel, the scope of the factors to be taken into consideration under paragraphs 5(1) (a), (b) and (d), subsection 5(2) and paragraphs 19(b) to (d) shall be determined by the Minister when fixing the terms of reference of the review panel, after consulting with the AA and the Minister of Transport.

30. A review panel shall submit its report to the Minister, the Minister of Transport and the AA.

31. Sections 34 and 35 of the Act apply to a review panel with any modifications that are necessary.

32. (1) Where a review panel submits a report, the Minister of Transport shall, after consulting with and on behalf of the AA, take into consideration the report and, with the approval of the Governor in Council, respond to the report.

(2) The Governor in Council's approval shall be based on the public interest.

(3) The Governor in Council may require the review panel to clarify any of the recommendations set out in the report.

33. The AA shall decide, in conformity with the approval of the Governor in Council and taking into account the implementation of any technically and economically feasible mitigation measures, that the project

- (a) is not likely to cause significant adverse environmental effects;
- (b) is likely to cause significant environmental effects that cannot be justified in the circumstances, or
- (c) is likely to cause significant adverse environmental effects that can be justified in the circumstances.

34. If the AA makes the decision referred to in paragraph 33 (a) or (c), it may

- (a) do any act or thing that commits it to carrying out the project in whole or in part;
- (b) make or authorize payments or provide a guarantee for a loan or any other form of financial assistance to the proponent of the project for the purpose of enabling the project to be carried out in whole or in part;
- (c) sell, lease or otherwise dispose of federal lands or any interest in those lands for the purpose of enabling the project to be carried out in whole or in part;
- (d) issue a permit or licence, grants an approval or take any other action under an Act of Parliament or any regulation made pursuant to an Act of Parliament
- (e) issue a facility permit or building permit under an AA administration or management process that allows a project to be carried out by a third party on federal lands controlled by the AA.

34.1 (former subsection 33(2)) If the AA makes a decision referred to in paragraph 33 (a) or (c), and decides to take a course of action in line with section 34, it shall

- (a) ensure the implementation of the mitigation measures referred to in section 33; and
- (b) design a follow-up program and ensure its implementation.

34.2 If the AA makes the decision referred to in paragraph 33(b), the AA shall not exercise any power or perform any duty or function that would permit the project to be carried out in whole or in part.

PREVIOUS ASSESSMENT

35. Section 24 of the Act applies to an AA, with any modifications that are necessary, with respect to previously conducted environmental assessments

TERMINATION OF ASSESSMENT

36. If, at any time during an environmental assessment process, an AA decides not to exercise any power or perform any duty or function referred to in subsection 12(1) and sections 25 and 34 in relation to

- (a) a project that has not been referred to a review panel, the AA may terminate the environmental assessment process; and
- (b) a project that has been referred to a review panel, the Minister may terminate the environmental assessment process.

CANADIAN ENVIRONMENTAL ASSESSMENT REGISTRY

37. For the purpose of facilitating public access to records included in the Registry, in the case of a screening, the AA shall ensure, and in any other case, the Agency shall ensure, that a copy of any such record is provided in a timely manner on request.

38. (1) The AA shall ensure that the following records are included in the Internet site referred to in subsection 55.1(1) of the Act:

- (a) any declaration referred to in subsection 14(2) and the report to which it relates or a description of how a copy of the report may be obtained, and any declaration referred to in subsection 16(4);
- (b) the notice of the decision of the Minister to refer a project to the Minister of Transport for referral to the AA under paragraph 18(1)(a); and
- (c) an environmental assessment decision statement made under subsection 23(1) and any request under subsection 23(2).

(2) In the case of an assessment by a review panel, the Agency shall ensure that the following records are also included in the Internet site:

- (a) a description of the scope of the project in relation to which the assessment is to be conducted, as determined under section 4;
- (b) the notice of termination of the assessment process by the Minister under paragraph 36(b);
- (c) any public notices that are issued by the Agency to request public input into the environmental assessment ;
- (d) notice of the decision of the Minister to refer a project to a review panel under paragraph 18(1)(b);
- (e) the terms of reference of a review panel;
- (f) a report of a review panel or a summary of the report;

- (g) the Minister of Transport's response under subsection 32(1) to the report of a review panel; and
- (h) any other appropriate information, including information in the form of a list of relevant documents together with a description of how the documents may be obtained.

39. (1) An AA shall ensure that the following records are included in the Internet site referred to in subsection 55.1(1) of the Act:

- (a) within 14 days after the commencement of an environmental assessment, the notice of its commencement, except if a class screening report is used under subsection 16(1) or (2);
- (b) a statement of the projects in respect of which a class screening report is being used by the AA under subsection 16(1) or (2), every three months or with any greater frequency as agreed on between the AA and the Agency;
- (c) the notice of termination if the AA terminates an environmental assessment process under paragraph 36(a);
- (d) if the AA, under section 10, gives the public an opportunity to participate in the screening of a project or if the Minister, under paragraph 18(1)(a), refers a project to the Minister of Transport for referral to the AA to continue the comprehensive study, a description of the factors to be taken into consideration in the environmental assessment and of the scope of those factors or an indication of how the description may be obtained;
- (e) if the AA makes a decision under section 11, except when a class screening report is used under subsection 16(1) or (2), no later than the making of that decision, the screening report taken into consideration by a AA for the purpose of that decision or a description of how a copy of the report may be obtained;
- (f) if the AA makes a decision under subsection 24(1), the comprehensive study report to be taken into consideration by the AA under subsection 24(1) or a description of how a copy of the report may be obtained;
- (g) if the AA makes a decision under section 11, except when a class screening report is used under subsection 16(1) or (2), or subsection 24(1) or section 33 concerning the environmental effects of the project, that decision and a statement of any mitigation measure whose implementation the AA took into account in making its decision;
- (h) a notice stating whether or not, under subsection 12(2), a follow-up program for the project will be designed and implemented; and
- (i) a summarized description of any follow-up program and its results, or an indication of how a full description of the program and its results may be obtained.

(2) In the case of a screening or a comprehensive study, the AA shall ensure that the following records are also included in the Internet site:

- (a) a description of the scope of the project as determined under section 4;
- (b) any public notices that are issued by the AA or the Agency to request public input into the environmental assessment; and

- (c) any other appropriate information, including information in the form of a list of relevant documents together with a description of how those documents may be obtained.

40. (1) In respect of every project for which an environmental assessment is conducted, a project file shall be established and maintained

- (a) by the AA, from the commencement of the environmental assessment until any follow-up program in respect of the project is completed; and
- (b) by the Agency, if the project is referred to a review panel, from the appointment of the members of the review panel until the report of the review panel is submitted to the Minister.

(2) A project file shall contain all records produced, collected or submitted with respect to the environmental assessment of the project, including

- (a) all records included in the Internet site;
- (b) any report relating to the environmental assessment;
- (c) any comments filed by the public in relation to the environmental assessment;
- (d) any records relating to the need for, design of or implementation of any follow-up program; and
- (e) any documents requiring mitigation measures to be implemented.

41. Despite sections 38 and 39 and subsection 40(2), the Agency and the AA shall ensure that a record, part of a record or information is included in the Registry only if

- (a) it has otherwise been made publicly available;
- (b) it would have been disclosed to the public in accordance with the *Access to Information Act* if a request had been made in respect of that record or information under that Act at the time it came under the control of the AA or the Agency, including any record or part of a record that would be disclosed in the public interest under subsection 20(6) of that Act; or
- (c) its disclosure would be in the public interest because it is required for the public to participate effectively in the environmental assessment, but a record whose disclosure would be prohibited under section 20 of the *Access to Information Act* shall not be included.

TRANSITIONAL

42. These Regulations apply in respect of a project if an assessment of its environmental effects has not been completed before the coming into force of these Regulations.

COMING INTO FORCE

43. These Regulations come into force on the day on which they are registered.

Appendix B: Evaluation Questions based on the IAIA Principles

Basic Principles:

An Environmental Impact Assessment should be:

Basic Principle	Definition	Questions
Purposive	the process should inform decision making and result in appropriate levels of environmental protection and community well-being	<ol style="list-style-type: none"> 1. How is information gained during an EIA used to inform decisions? 2. How does the EIA process ensure environment and community well-being is protected at an appropriate level? What values are used to determine an appropriate level?
Rigorous	the process should apply “best practicable” science, employing methodologies and techniques appropriate to address the problems being investigated	<ol style="list-style-type: none"> 3. How does the EIA process ensure the application of “best practicable” science and the use of methodologies and techniques appropriate to address any problems being investigated?
Practical	the process should result in information and outputs which assist with problem solving and are acceptable to and able to be implemented by proponents	<ol style="list-style-type: none"> 4. How are information and outputs from the EIA process used to assist with problem solving? Are there any measures in the EIA process to ensure information and outputs generated to assist with problem solving are acceptable to and can be implemented by project proponents?
Relevant	the process should provide sufficient, reliable and usable information for development planning and decision making	<ol style="list-style-type: none"> 5. Are there any measures to ensure the EIA process provides sufficient, reliable and usable information for development planning and decision making?
Cost-effective	the process should achieve the objectives of EIA within the limits of available information, time, resources and methodology	<ol style="list-style-type: none"> 6. In what ways does the process make certain EIA objectives are met within the limits of available information, time, resources and methodology? 7. How are limits of available information, time, resources and methodology determined?
Efficient	the process should impose the minimum cost burdens in terms of time and finance on proponents and participants consistent with meeting accepted requirements and objectives of EIA	<ol style="list-style-type: none"> 8. Are there measures to ensure the process imposes the minimum cost burden (in terms of time and finance) on proponents and participants consistent with meeting accepted requirements and objectives of EIA? 9. How is the minimum cost burden in terms of time and finance determined?
Focused	the process should concentrate on significant environmental effects and key issues; i.e., the matters that need to be taken into account in making decisions	<ol style="list-style-type: none"> 10. How does the process make certain that the scope of the EIA concentrates on significant environmental effects and key issues? 11. How are significant environmental

		effects and key issues determined?
Adaptive	the process should be adjusted to the realities, issues and circumstances of the proposals under review without compromising the integrity of the process, and be iterative, incorporating lessons learned throughout the proposal's life cycle	12. How does the EIA process adjust to any realities and circumstances of a proposal under review without compromising the integrity of the process? 13. Are there any measures in the EIA process to ensure it is iterative, incorporating lessons learned throughout a proposal's life cycle?
Participative	the process should provide appropriate opportunities to inform and involve the interested and affected publics, and their inputs and concerns should be addressed explicitly in the documentation and decision making	14. Does the EIA process provide appropriate opportunities to inform and involve the interested and affected publics? 15. How is an appropriate opportunity for participation determined? 16. Are there any measures in the EIA process to ensure public inputs and concerns are addressed explicitly in documentation and decision making?
Interdisciplinary	the process should ensure that the appropriate techniques and experts in the relevant bio-physical and socio-economic disciplines are employed, including use of traditional knowledge as relevant	17. Does the EIA process have measures to make certain appropriate techniques and experts in the relevant bio-physical and socio-economic disciplines are employed? 18. Does the EIA process make use of traditional knowledge when relevant?
Credible	the process should be carried out with professionalism, rigor, fairness, objectivity, impartiality and balance, and be subject to independent checks and verification	19. Does the process have any measures to ensure EIAs are carried out with professionalism, rigor, fairness, objectivity, impartiality and balance? 20. Is the EIA process subject to independent checks and verification?
Integrated	the process should address the interrelationships of social, economic and biophysical aspects	21. How does the process address interrelationships of social, economic and biophysical aspects?
Transparent	the process should have clear, easily understood requirements for EIA content; ensure public access to information; identify the factors that are to be taken into account in decision making; and acknowledge limitations and difficulties	22. How does the process make certain there is clear and easily understood requirements for EIA content? 23. How does the process ensure public access to information? 24. How does the process identify the factors that are to be taken into account in decision making? 25. How does the process acknowledge limitations and difficulties?
Systematic	the process should result in full consideration of all relevant information on the affected environment, of proposed alternatives and their impacts, and of the measures necessary to monitor and investigate residual effects	26. How does the process ensure full consideration is given to all relevant information on the affected environment, the proposed alternatives and their impacts, and the measures necessary to monitor and investigate residual effects?

Operating Principles:

The EIA process should be applied:

- As early as possible in decision making and throughout the life cycle of the proposed activity;
 - 27. During what stages of a proposed activity is the EIA process applied?
- To all development proposals that may cause potentially significant effects;
 - 28. Is there a screening process to identify development proposals that may cause potentially significant effects?
 - 29. Does the EIA process apply to all development proposals that may cause potentially significant effects?
- To biophysical impacts and relevant socio-economic factors, including health, culture, gender, lifestyle, age, and cumulative effects consistent with the concept and principles of sustainable development;
 - 30. To which relevant impacts and factors does the EIA process apply (i.e., biophysical, socio-economic, health, culture, gender, lifestyle, age, cumulative effects)?
 - 31. Does the EIA process apply to impacts and factors consistent with the concept and principles of sustainable development?
- To provide for the involvement and input of communities and industries affected by a proposal, as well as the interested public;
 - 32. Does the EIA process provide for the involvement and input of communities and industries affected by a proposal?
 - 33. Does the EIA process provide for the involvement and input of interested public?
- In accordance with internationally agreed measures and activities.
 - 34. Is the EIA process applied in accordance with internationally agreed measures and activities?
 - 35. If yes, which internationally agreed measures and activities?

Specifically the EIA process should provide for:

Operating Principle	Definition	Questions
Screening	to determine whether or not a proposal should be subject to EIA and, if so, at what level of detail	36. How does the process determine which proposals should be subject to and EIA? 37. How does the process determine the level of detail necessary in an EIA?
Scoping	to identify the issues and impacts that are likely to be important and to establish terms of reference for EIA	38. How does the EIA process identify the issues and impacts likely to be important in a proposed activity? 39. Does the process have measures to establish a terms of reference for the EIA?
Examination of Alternatives	to establish the preferred or most environmentally sound and benign option for achieving proposal objectives	40. Does the EIA process have measures to consider and examine alternatives to a proposed activity? 41. How does the EIA process establish

		which is the preferred or most environmentally sound and benign option for achieving proposal objectives?
Impact Analysis	to identify and predict the likely environmental, social and other related effects of the proposal	42. How does the EIA process identify and predict the likely environmental, social and other related effects of a proposal?
Mitigation and Impact Management	to establish the measures that are necessary to avoid, minimize or offset predicted adverse impacts and, where appropriate, to incorporate these into an environmental management plan or system	43. Does the EIA process have triggers to establish measures necessary to avoid, minimize or offset predicted adverse impacts? 44. Where appropriate, does the EIA process incorporate these mitigation measures into an environmental management plan or system? 45. How does the EIA process determine when it is appropriate to incorporate mitigation measures into an EMS?
Evaluation of Significance	to determine the relative importance and acceptability of residual impacts (i.e., impacts that cannot be mitigated)	46. How does the EIA process determine the relative importance and acceptability of residual impacts (i.e., impacts that cannot be mitigated) from a proposed activity?
Preparation of Environmental Impact Statement (EIS) or Report	to document clearly and impartially impacts of the proposal, the proposed measures for mitigation, the significance of effects, and the concerns of the interested public and the communities affected by the proposal	47. Does the EIA process include the preparation of an EIS or report? 48. Does the EIA process have measures to ensure the EIS/report is clear and impartial? 49. What aspects of the EIA process are covered in the EIS/report (i.e., potential impacts, proposed mitigation measures, significance of effects, concerns of interested public and affected communities)?
Review of EIS	to determine whether the report meets its terms of reference, provides a satisfactory assessment of the proposal(s) and contains the information required for decision making	50. Does the EIA process have any measures to determine whether EIS/reports meet their terms of reference? 51. Does the EIA process have any measures to determine whether EIS/reports provide satisfactory assessment of a proposal(s)? 52. Does the EIA process have any measures to determine whether EIS/reports contain all information necessary for decision making?
Decision Making	to approve or reject the proposal and to establish the terms and conditions for its implementation	53. How does the EIA process decide whether to approve or reject a given proposal (i.e., set of criteria)? 54. Does the EIA process establish the terms and conditions for implementation of a proposal?
Follow Up	to ensure that the terms and conditions of approval are met; to monitor the impacts	55. Does the EIA process include any measures to ensure the terms and

of development and the effectiveness of mitigation measures; to strengthen future EIA applications and mitigation measures; and, where required, to undertake environmental audit and process evaluation to optimize environmental management

- conditions of approval are met?
56. Does the EIA process have any measures to monitor the impacts of development and effectiveness of mitigation measures?
 57. Does the process have measures to strengthen future EIA applications and mitigation measures?
 58. Where required, does the EIA process have measures to undertake environmental audit and process evaluations to optimize future environmental management?
 59. If yes, how does the EIA process determine when environmental audits and process evaluations are required?
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Appendix C: Summarized Evaluation of the VIAA EIA Process

Note: Text in bold represents my own interpretations of VIAA policy. All other text is derived from VIAA documentation.

Questions	Answers
Purposive	
<p>1. How is information gained during an EIA used to inform decisions?</p>	<ul style="list-style-type: none"> • Before granting Preliminary Approval for a project, an Applicant must submit an EIA report from an Approved Environmental Consultant (<i>AEC</i>) to the Technical Data Centre if so required by the Environment Department [Pp. 8, 3.1(e)]¹. This report would be used in determining whether a project should be given preliminary approval. • Before granting a facility permit, the <i>AEC</i> must provide Letters of Commitment and Assurance [Pp. 2, 5(a,b)]². These letters are necessary to enable issuance of a facility permit. • The <i>AEC</i> must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards (i.e., the standards published by the Senior Management Committee from time to time to be used in construction and operations on Airport Lands). Various factors must be considered in the EIA report [Pp. 2-3, 7(a-d)]². As such, these factors are likely used to inform decisions. • The <i>AEC</i> is responsible for identifying and making recommendations pertaining to new research, technology or standards [Pp. 3, 8]². Any new information is likely used to inform decisions. • There does not appear to be any VIAA policies that specifically detail how information is to be used when making decisions. The use of such information appears to be implied by its inclusion in reports.

2. How does the EIA process ensure environment and community well-being is protected at an appropriate level? What values are used to determine an appropriate level?

- Comprehensive definitions are provided for *environment*, *environmental assessment*, *environmental effect* and *mitigation* [Pp. 1, 1(iii)]². **These definitions identify what aspects of the physical environment must be considered in an EIA. The definitions also ensure consideration of effects on community well-being which result from project-caused changes to the environment.**
 - Before granting a facility permit, the *AEC* must provide Letters of Commitment and Assurance [Pp. 2, 5(a,b)]². **These letters help to ensure protection at an appropriate level.**
 - Before granting preliminary approval or a facility permit, a meeting may be required between the Environmental Department of the Airport Authority and the *AEC*, Applicant and registered professional to discuss the Scope of Environmental Services and their particular application to the Project [Pp. 2, 6]². **A meeting to discuss the scope of a project helps to ensure the environment and community well-being are protected at an appropriate level.**
 - The *AEC* is responsible for identifying and making recommendations pertaining to new research, technology or standards [Pp. 3, 8]². **The use of new information helps to ensure protection at an appropriate level.**
 - During construction, the *AEC* must conduct periodic field reviews to ensure mitigation measures are properly implemented and the Environmental Standards are being met. Field review reports are submitted to the Environmental Department and independent professional. At any time during construction, the Environmental Department may require field reviews in addition to the minimum number set out in VIAA documentation [Pp. 3, 9]². **These field reviews help to ensure the environment and community well-being are being protected at an appropriate level.**
 - If an environmental risk, incident or emergency occurs at any time during construction, the Applicant and *AEC* must take all necessary measures to ensure any environmental effect is minimized [Pp. 3, 10]². **These actions would help to ensure appropriate protection.**
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Rigorous

3. How does the EIA process ensure the application of “best practicable” science and the use of methodologies and techniques appropriate to address any problems being investigated?

- The *AEC* is required to conduct an EIA of the Project, with the level of assessment being appropriate for the scale of the Project. The EIA report must consider mitigation measures that are technically and economically feasible [Pp. 2-3, 7(c)]². **Having a level of assessment appropriate for the scale of the Project helps to ensure the use of appropriate science, methodologies and techniques. Further, implementing technically and economically feasible mitigation measures helps to ensure the application of best practicable science.**
- The *AEC* is responsible for identifying and making recommendations pertaining to new research, technology or standards [Pp. 3, 8]². **The use of new information helps to ensure use of appropriate science, methodologies and techniques.**

Practical

4. How are information and outputs from the EIA process used to assist with problem solving? Are there any measures in the EIA process to ensure information and outputs generated to assist with problem solving are acceptable to and can be implemented by project proponents?

Solving problems (w/ the project; not the proposal) is tied to environmental effects. Can be mitigation, avoidance, etc. Examples of outputs include an advisory committee’s report, and recommendations from the final report.

- *AEC*’s services are for assuring the Airport Authority that all mitigation measures required during construction are implemented, the design, construction and operation of the Project is in compliance with the Environmental Standards, and that all significant adverse environmental effects have been mitigated [Pp. 2, 4(a-c)]². **Requiring Environmental Standards are met and mitigation measures are effective helps to assist in solving problems tied to environmental effects.**
 - The EIA report must consider technically and economically feasible mitigation measures, as well as the need for the Project [Pp. 2, 7(c,d)]². **The use of mitigation measures helps to solve problems tied to environmental effects, while determining whether the Project is necessary could aid in preventing adverse environmental effects.**
 - If an environmental risk, incident or emergency occurs at any time during construction, the Applicant and *AEC* must take all necessary measures to ensure any environmental effect is minimized [Pp. 3, 10]². **The use of mitigation measures helps to solve problems tied to environmental effects.**
 - **There does not appear to be any documentation specifically detailing how information and outputs from the EIA process are used to assist with**
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addressing adverse environmental effects caused by the Project, other than the use of mitigation measures or abandonment of the Project (i.e., avoidance).

Relevant

5. Are there any measures to ensure the EIA process provides sufficient, reliable and usable information for development planning and decision making?
- The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project [Pp. 2-3, 7(a-d)]². **These factors to be considered in the EIA report help to satisfy the question of sufficient information for development planning and decision making.**
 - **There does not appear to be any VIAA policies that specifically address how the EIA process provides reliable and usable information for development planning and decision making.**

Cost-effective

6. In what ways does the process make certain EIA objectives are met within the limits of available information, time, resources and methodology?
- The *AEC* is required to undertake an EIA, with the level of assessment being appropriate for the scale of the Project. The EIA report must consider mitigation measures that are technically and economically feasible [Pp. 2, 7(c)]². **Having the level of assessment correlate to the scale of the Project implies using limits appropriate for the EIA. Further, the use of technically and economically feasible mitigation measures ensures the objective of effective mitigation is met within available limits.**
7. How are limits of available information, time, resources and methodology determined?
- The *AEC* is required to undertake an EIA, with the level of assessment being appropriate for the scale of the Project [Pp. 2, 7]². **Therefore, the limits are determined based on what is appropriate for the scale of the Project.**
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Efficient

8. Are there measures to ensure the process imposes the minimum cost burden (in terms of time and finance) on proponents and participants consistent with meeting accepted requirements and objectives of EIA?

- The *AEC* is required to undertake an EIA, with the level of assessment being appropriate for the scale of the Project. The EIA report must consider mitigation measures that are technically and economically feasible [Pp. 2, 7(c)]². **Having the level of assessment correlate to the scale of the Project helps to ensure the minimum cost burden is imposed. The use of technically and economically feasible mitigation measures also helps to ensure a minimum cost burden. However, no specific mention of a minimum cost burden can be found in VIAA documentation.**

9. How is the minimum cost burden in terms of time and finance determined?

- The *AEC* is required to undertake an EIA, with the level of assessment being appropriate for the scale of the Project. The EIA report must consider mitigation measures that are technically and economically feasible [Pp. 2, 7(c)]². **The minimum cost burden is determined based on the scale of the Project. Further, determining what technically and economically feasible mitigation measures to use helps to determine the minimum cost burden.**

Focused

10. How does the process make certain that the scope of the EIA concentrates on significant environmental effects and key issues?

- Comprehensive definitions are provided for *environment*, *environmental assessment*, *environmental effect* and *mitigation* [Pp. 1, 1(iii)]². **These definitions identify what aspects of the physical environment must be considered in an EIA, as well as ensuring consideration of various social and cultural effects that may result from project-caused changes to the environment. The definitions help to ensure the EIA scope focuses on significant environmental effects and key issues. However, some key issues may be ignored since social and cultural effects not specifically related to changes in the environment are not considered.**
 - *AEC*'s services are for assuring the Airport Authority that the design, construction and operation of the Project has no significant adverse environmental impacts, and is in compliance with the Environmental Standards [Pp. 2, 4(a-c)]². **Requiring Environmental Standards to be met helps to focus the EIA scope on significant environmental effects.**
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- Before granting preliminary approval or a facility permit, a meeting may be required between the Environmental Department of the Airport Authority and the *AEC*, Applicant and registered professional to discuss the Scope of Environmental Services and their particular application to the Project [Pp. 2, 6]². **A meeting to discuss the scope of a project may help to ensure significant environmental effects and key issues are appropriately considered.**
 - The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project [Pp. 2-3, 7(a-d)]². **These factors to be considered in the EIA report help to ensure the assessment scope concentrates on significant environmental effects and other key issues.**

11. How are significant environmental effects and key issues determined?

- Before granting preliminary approval or a facility permit, a meeting may be required between the Environmental Department of the Airport Authority and the *AEC*, Applicant and registered professional to discuss the Scope of Environmental Services and their particular application to the Project [Pp. 2, 6]². **A meeting to discuss the scope of a project may help to determine which significant environmental effects and key issues should be considered.**
 - The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including
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those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project [Pp. 2-3, 7(a-d)]². **The list of factors to be considered in the EIA report helps the AEC to focus their assessment on significant environmental effects and key issues.**

- **There is also an Environmental Advisory Committee that meets quarterly to hold open discussions with all stakeholders about the environmental aspects of operations and developments. This committee has representatives from community and environmental groups, industry, government, citizens and the Musqueam Indian Band, and provides input on the Airport Authority's Environmental Management Program. It is likely that some potential environmental effects and key issues are determined during these meetings.**

Adaptive

12. How does the EIA process adjust to any realities and circumstances of a proposal under review without compromising the integrity of the process?

- The AEC is responsible for identifying and making recommendations pertaining to new research, technology or standards [Pp. 3, 8]². **Consideration of new information may help the EIA process to adjust to circumstances of a proposal.**

13. Are there any measures in the EIA process to ensure it is iterative, incorporating lessons learned throughout a proposal's life cycle?

- **There do not appear to be any specific measures to ensure the EIA process is iterative and incorporates lessons learned throughout a proposal's life cycle.**

Participative

14. Does the EIA process provide appropriate opportunities to inform and involve the interested and affected publics?

- **There does not appear to be any EIA policies that specifically detail how interested and affected publics are provided with appropriate opportunities to be informed and involved, other than an EIA report must include consideration of any relevant comments from the public [Pp. 3, 7(d)]².**
- **However, as part of VIAA's Environmental Management Plan, there is an Environmental Advisory Committee that meets quarterly to hold open discussions with all stakeholders about the environmental aspects of operations and developments. This committee has representatives from community and**

	environmental groups, industry, government, citizens and the Musqueam Indian Band, and provides input on the Airport Authority's Environmental Management Program.
15. How is an appropriate opportunity for participation determined?	<ul style="list-style-type: none"> • There does not appear to be any measure of appropriateness for public participation opportunities.
16. Are there any measures in the EIA process to ensure public inputs and concerns are addressed explicitly in documentation and decision making?	<ul style="list-style-type: none"> • The <i>AEC</i> must undertake an EIA of the Project, with a report that includes consideration of any relevant matters, such as comments received from the public [Pp. 2-3, 7(d)]². Having the report include consideration of public comments helps to ensure the EIA process addresses public inputs and concerns in documentation.
Interdisciplinary	
17. Does the EIA process have measures to make certain appropriate techniques and experts in the relevant bio-physical and socio-economic disciplines are employed?	<ul style="list-style-type: none"> • An approved environmental consultant (<i>AEC</i>) is required on a Project, and shall be retained by the applicant [Pp. 1, 2]². The <i>AEC</i> is considered to be an expert in conducting environmental impact assessments. • The <i>AEC</i> is responsible for identifying and making recommendations pertaining to new research, technology or standards [Pp. 3, 8]². Consideration of new information helps to ensure appropriate techniques are employed.
18. Does the EIA process make use of traditional knowledge when relevant?	<ul style="list-style-type: none"> • The Environmental Advisory Committee includes members from the Musqueam Indian Band, however, the use of First Nations traditional knowledge in the EIA process is not explicitly documented in VIAA policy.
Credible	
19. Does the process have any measures to ensure EIAs are carried out with professionalism, rigor, fairness, objectivity, impartiality and balance?	<ul style="list-style-type: none"> • During construction, the <i>AEC</i> must conduct periodic field reviews to ensure mitigation measures are properly implemented and the Environmental Standards are being met. Field review reports are submitted to the Environmental Department and independent professional. At any time during construction, the Environmental Department may require field reviews in addition to the minimum number set out in VIAA documentation [Pp. 3, 9]². These field reviews help to ensure EIAs are carried out with professionalism, rigor, objectivity, and impartiality. The reviews are conducted by a designated professional whenever required. Having the field review reports submitted to an independent professional also speaks

	<p>towards impartiality.</p> <ul style="list-style-type: none"> • Additionally, the use of an approved <i>AEC</i> helps to ensure all of the above.
20. Is the EIA process subject to independent checks and verification?	<ul style="list-style-type: none"> • During construction, the <i>AEC</i> must conduct periodic field reviews to ensure mitigation measures are properly implemented and the Environmental Standards are being met. Field review reports are submitted to the Environmental Department and independent professional. At any time during construction, the Environmental Department may require field reviews in addition to the minimum number set out in VIAA documentation [Pp. 3, 9]². Having the field review reports submitted to an independent professional helps to ensure independent checks and verification. However, it appears as though the independent professional may not be used to review the EIA report.
Integrated	
21. How does the process address interrelationships of social, economic and biophysical aspects?	<ul style="list-style-type: none"> • Comprehensive definitions are provided for <i>environment</i>, <i>environmental assessment</i>, <i>environmental effect</i> and <i>mitigation</i>. The <i>environment</i> definition identifies the physical environment aspects that must be considered in an EIA. An <i>environmental effect</i> refers to any project-caused change in the <i>environment</i>, or the effect(s) any such change has on health and socio-economic conditions, on physical and cultural heritage, on traditional land and resource use by First Nations, or on any structure, site or things of specific significance. <i>Mitigation</i> means to eliminate or control adverse environmental effects of a Project, and may include restitution of any means necessary to address such effects. [Pp. 1, 1(iii)]². The comprehensive definitions help to identify the interrelationships evident between social, economic and biophysical aspects of a Project. However, some interrelationships may be ignored since social and economic effects not specifically related to changes in the environment are not considered.
Transparent	
22. How does the process make certain there is clear and easily understood requirements for EIA content?	<ul style="list-style-type: none"> • The <i>AEC</i> must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report

	<p>must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project [Pp. 2-3, 7(a-d)]². The list of factors to be considered in the EIA report helps delineate exactly what content is required in the EIA, making it clear and easily understood.</p>
<p>23. How does the process ensure public access to information?</p>	<ul style="list-style-type: none"> • The public has access to documents outlining VIAA’s overall environmental performance, but there does not appear to be any method in which the interested public (other than those parties sitting on the Environmental Advisory Committee) can gain access to EIA information.
<p>24. How does the process identify the factors that are to be taken into account in decision making?</p>	<ul style="list-style-type: none"> • The <i>AEC</i> must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project [Pp. 2-3, 7(a-d)]². The intent of the study and list of factors to be considered in the EIA report helps to identify factors that must be taken into account, presumably in decision making. However, there appears to be no weighting criteria with which these factors can be evaluated.
<p>25. How does the process acknowledge limitations and difficulties?</p>	<ul style="list-style-type: none"> • The <i>AEC</i> must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess

whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project [Pp. 2-3, 7(a-d)]². **If we are referring to the acknowledgement of limitations and difficulties evident in the Project, then the intent of the EIA and the list of factors to be considered in the EIA report helps to identify which adverse environmental effects may occur as a result of the Project. However, if we are referring to limitations and difficulties evident in the Process, there does not appear to be any VIAA policy to address such issues.**

- The *AEC* is responsible for identifying and making recommendations pertaining to new research, technology or standards [Pp. 3, 8]². **Use of new information can help to adapt to changing conditions that may pose difficulties.**

Systematic

26. How does the process ensure full consideration is given to all relevant information on the affected environment, the proposed alternatives and their impacts, and the measures necessary to monitor and investigate residual effects?

- *AEC*'s services are for assuring the Airport Authority that all mitigation measures required during construction are implemented, the design, construction and operation of the Project is in compliance with the Environmental Standards, and that all significant adverse environmental effects have been mitigated [Pp. 2, 4(a-c)]². **Requiring Environmental Standards to be met and mitigation measures to be effective help to ensure all relevant information is employed, since consideration must be given to meet all Environmental Standards and mitigation objectives.**
 - Before granting a facility permit, the *AEC* must provide Letters of Commitment and Assurance [Pp. 2, 5(a,b)]². **These letters are another step in making certain all relevant information is considered, since they are providing assurance and commitment that no adverse environmental effects will result from the Project.**
 - Before granting preliminary approval or a facility permit, a meeting may be required
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between the Environmental Department of the Airport Authority and the *AEC*, Applicant and registered professional to discuss the Scope of Environmental Services and their particular application to the Project [Pp. 2, 6]². **A meeting to discuss the scope of a project may help to ensure all relevant information is appropriately considered.**

- The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project. In addition, the *AEC* is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]². **The intent of the study and list of factors to be considered in the EIA report helps to ensure all relevant information on the affected environment is considered. However, the only reference to a Project alternative is to consider the need for the Project (i.e., option of no go). Further, it appears as though the *AEC* is only required to list the residual effects. There do not appear to be any measures to monitor and/or investigate said residual effects.**
 - The *AEC* is responsible for identifying and making recommendations pertaining to new research, technology or standards [Pp. 3, 8]². **Use of new information helps to ensure all relevant information is considered.**
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Operating Principles:

The EIA process should be applied:

Questions	Answers
As early as possible in decision making and throughout the life cycle of the proposed activity	
27. During what stages of a proposed activity is the EIA process applied?	<ul style="list-style-type: none">• Before granting Preliminary Approval for a project, an Applicant must submit an EIA report from an Approved Environmental Consultant (<i>AEC</i>) to the Technical Data Centre if so required by the Environment Department [Pp. 8, 3.1(e)]¹. If requested by the Environment Department, this report would be used in determining whether a project should be given preliminary approval. If the report is not required, it appears as though there is not an EIA process applied.• <i>AEC</i>'s services are for assuring the Airport Authority that all mitigation measures required during construction are implemented, the design, construction and operation of the Project is in compliance with the Environmental Standards, and that all significant adverse environmental effects have been mitigated [Pp. 2, 4(a-c)]². <i>AEC</i> services are for assuring that Environmental Standards are met and mitigation measures are implemented and effective throughout design, construction and operation phases of the Project.• After preliminary approval, but before granting a facility permit, the <i>AEC</i> must provide Letters of Commitment and Assurance [Pp. 2, 5(a,b)]². These letters are required before granting a facility permit, which would enable the construction phase to begin.• Before granting preliminary approval or a facility permit, a meeting may be required between the Environmental Department of the Airport Authority and the <i>AEC</i>, Applicant and registered professional to discuss the Scope of Environmental Services and their particular application to the Project [Pp. 2, 6]². This meeting to discuss the EIA scope for a given project would occur prior to granting preliminary approval or a facility permit.• The <i>AEC</i> must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and

operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project. In addition, the *AEC* is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]².

The intent of the study and list of factors to be considered in the EIA report helps to ensure the EIA process is applied from construction through to operation. There does not appear to be any VIAA policies addressing how a Project is to be dealt with following the operation phase (i.e., termination phase).

- The *AEC* is responsible for identifying and making recommendations pertaining to new research, technology or standards [Pp. 3, 8]². **The *AEC* is responsible for identifying and recommending new information through all phases of the EIA process.**
 - During construction, the *AEC* must conduct periodic field reviews to ensure mitigation measures are properly implemented and the Environmental Standards are being met. Field review reports are submitted to the Environmental Department and independent professional. At any time during construction, the Environmental Department may require field reviews in addition to the minimum number set out in VIAA documentation [Pp. 3, 9]². **These field reviews are required during the construction phase of the EIA process.**
 - If an environmental risk, incident or emergency occurs at any time during construction, the Applicant and *AEC* must take all necessary measures to ensure any environmental effect is minimized [Pp. 3, 10]². **These actions would be required during the construction phase of the EIA process.**
 - Following construction, the *AEC* must provide a Letter of Compliance to assure the
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Airport Authority that it has performed all the required services to which it committed. An Occupancy Permit will not be issued prior to receipt of a Letter of Compliance [Pp. 3, 11]². **A Letter of Compliance is required following the construction phase.**

To all development proposals that may cause potentially significant effects

28. Is there a screening process to identify development proposals that may cause potentially significant effects?

- Before granting Preliminary Approval for a project, an Applicant must submit an EIA report from an Approved Environmental Consultant (*AEC*) to the Technical Data Centre if so required by the Environment Department [Pp. 8, 3.1(e)]¹. **It appears as though proposed projects only undergo an EIA if deemed necessary by the Environment Department. Their decision can be aided by information provided in the facility permit application's environmental checklist.**

29. Does the EIA process apply to all development proposals that may cause potentially significant effects?

- Before granting Preliminary Approval for a project, an Applicant must submit an EIA report from an Approved Environmental Consultant (*AEC*) to the Technical Data Centre if so required by the Environment Department [Pp. 8, 3.1(e)]¹. **It appears as though proposed projects only undergo an EIA if deemed necessary by the Environment Department. Thus, application of the EIA process seems to be at the discretion of the Environment Department Head.**

To biophysical impacts and relevant socio-economic factors, including health, culture, gender, lifestyle, age, and cumulative effects consistent with the concept and principles of sustainable development

30. To which relevant impacts and factors does the EIA process apply (i.e., biophysical, socio-economic, health, culture, gender, lifestyle, age, cumulative effects)?

- Comprehensive definitions are provided for *environment*, *environmental assessment*, *environmental effect* and *mitigation*. The *environment* definition identifies the physical environment aspects that must be considered in an EIA. An *environmental effect* refers to any project-caused change in the *environment*, or the effect(s) any such change has on health and socio-economic conditions, on physical and cultural heritage, on traditional land and resource use by First Nations, or on any structure, site or things of specific significance. *Mitigation* means to eliminate or control adverse environmental effects of a Project, and may include restitution of any means necessary to address such effects. [Pp. 1, 1(iii)]². **The comprehensive definitions help to identify which relevant impacts and factors are covered in the EIA process. Some of these factors include those that are biophysical, socio-**

economic, health-related, and cultural, but only when caused by a changed in the environment which results from the Project.

- The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative. In addition, the *AEC* is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]². **The EIA process applies to cumulative effects associated with the Project, since these impacts are factors to be considered in the EIA report.**

31. Does the EIA process apply to impacts and factors consistent with the concept and principles of sustainable development?

- **There does not appear to be any specific reference to the concept of *Sustainable Development* in EIA policy documents. However, *Sustainable Development* is addressed in VIAA's 2007 Environmental Management Plan.**

To provide for the involvement and input of communities and industries affected by a proposal, as well as the interested public

32. Does the EIA process provide for the involvement and input of communities and industries affected by a proposal?

- The *AEC* must undertake an EIA of the Project, with a report that includes consideration of any relevant matters, such as comments received from the public [Pp. 2-3, 7(d)]². **Having the report include consideration of public comments helps to ensure the EIA process provides for the input of communities. However, there appears to be no other means of community involvement.**
 - **As part of VIAA's Environmental Management Plan, there is an Environmental Advisory Committee that meets quarterly to hold open discussions with all stakeholders about the environmental aspects of operations and developments. This committee has representatives from community and environmental groups, industry, government, citizens and the Musqueam Indian Band, and provides input on the Airport Authority's Environmental Management Program. These meetings would likely provide the opportunity for involvement and input on various proposals awaiting some level of approval.**
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33. Does the EIA process provide for the involvement and input of interested public?

- The *AEC* must undertake an EIA of the Project, with a report that includes consideration of any relevant matters, such as comments received from the public [Pp. 2-3, 7(d)]². **Having the report include consideration of public comments helps to ensure the EIA process provides for the input of interested public. However, there appears to be no other means of involvement for the interested public.**
- **As part of VIAA’s Environmental Management Plan, there is an Environmental Advisory Committee that meets quarterly to hold open discussions with all stakeholders about the environmental aspects of operations and developments. This committee has representatives from community and environmental groups, industry, government, citizens and the Musqueam Indian Band, and provides input on the Airport Authority’s Environmental Management Program. These meetings would likely provide the opportunity for involvement and input on various proposals awaiting some level of approval.**

In accordance with internationally agreed measures and activities

34. Is the EIA process applied in accordance with internationally agreed measures and activities?

- **There appears to be no mention of internationally agreed measures and activities from which the EIA process draws.**

35. If yes, which internationally agreed measures and activities?

- **Not Applicable**

Specifically the EIA process should provide for:

Questions	Answers
Screening	
36. How does the process determine which proposals should be subject to an EIA?	<ul style="list-style-type: none"> • Before granting Preliminary Approval for a project, an Applicant must submit an EIA report from an Approved Environmental Consultant (<i>AEC</i>) to the Technical Data Centre if so required by the Environment Department [Pp. 8, 3.1(e)]¹. It appears as though proposed projects are subject to an EIA only if deemed necessary by the Environment Department. Their decision is aided by

information provided in the facility permit application’s environmental checklist.

37. How does the process determine the level of detail necessary in an EIA?

- The *AEC* is required to conduct an EIA of the Project, with the level of assessment being appropriate for the scale of the Project. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project [Pp. 2-3, 7(a-d)]². **The level of detail necessary is determined based on the scale of the project. However, basic report requirements are detailed as factors to be considered in VIAA policy.**

Scoping

38. How does the EIA process identify the issues and impacts likely to be important in a proposed activity?

- Before granting preliminary approval or a facility permit, a meeting may be required between the Environmental Department of the Airport Authority and the *AEC*, Applicant and registered professional to discuss the Scope of Environmental Services and their particular application to the Project [Pp. 2, 6]². **A meeting to discuss the scope of a project may help to identify this issues and impacts likely to be important.**
 - The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project. In addition, the *AEC* is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]².
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	The intent of the study and list of factors to be considered in the EIA report helps to ensure the most important issues and impacts associated with a Project are identified.
39. Does the process have measures to establish a terms of reference for the EIA?	<ul style="list-style-type: none"> • There does not appear to be any mention in VIAA policies regarding the establishment of a Terms of Reference.
Examination of Alternatives	
40. Does the EIA process have measures to consider and examine alternatives to a proposed activity?	<ul style="list-style-type: none"> • The <i>AEC</i> must undertake an EIA of the Project, with a report that includes consideration of any relevant matters, such as the overall need for the Project [Pp. 2-3, 7(d)]². The only reference to a Project alternative is to consider the overall need for the Project (i.e., option of no go). No other discussion of Project alternatives can be found in VIAA policy.
41. How does the EIA process establish which is the preferred or most environmentally sound and benign option for achieving proposal objectives?	<ul style="list-style-type: none"> • The <i>AEC</i> must undertake an EIA of the Project, with a report that includes consideration of any relevant matters, such as the overall need for the Project [Pp. 2-3, 7(d)]². The only reference to a Project alternative is to consider the overall need for the Project (i.e., option of no go).
Impact Analysis	
42. How does the EIA process identify and predict the likely environmental, social and other related effects of a proposal?	<ul style="list-style-type: none"> • Before granting preliminary approval or a facility permit, a meeting may be required between the Environmental Department of the Airport Authority and the <i>AEC</i>, Applicant and registered professional to discuss the Scope of Environmental Services and their particular application to the Project [Pp. 2, 6]². A meeting to discuss the scope of a project may help to identify and predict the likely environmental, social and other related effects. • The <i>AEC</i> must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to

address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project. In addition, the *AEC* is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]². **The intent of the study and list of factors to be considered in the EIA report helps to ensure the likely environmental, social and other related effects associated with a Project are identified and/or predicted. The report/summary must discuss the potential effects, thus it is implicit that said effects must be previously identified and predicted.**

Mitigation and Impact Management

43. Does the EIA process have triggers to establish measures necessary to avoid, minimize or offset predicted adverse impacts?

- *AEC*'s services are for assuring the Airport Authority that all mitigation measures required during construction are implemented, the design, construction and operation of the Project is in compliance with the Environmental Standards, and that all significant adverse environmental effects have been mitigated [Pp. 2, 4(a-c)]². **The role of the *AEC* to ensure Environmental Standards are met and mitigation measures are implemented and effective is in it of itself a trigger to avoid, minimize or offset any predicted adverse impacts.**
- The *AEC* is required to conduct an EIA of the Project, with the level of assessment being appropriate for the scale of the Project. The EIA report must consider mitigation measures that are technically and economically feasible [Pp. 2-3, 7(c)]². **Having a level of assessment appropriate for the scale of the Project helps to ensure the level of mitigation is appropriate for the Project. Further, requiring consideration of technically and economically feasible mitigation measures triggers the establishment of said measures.**
- If an environmental risk, incident or emergency occurs at any time during construction, the Applicant and *AEC* must take all necessary measures to ensure any environmental effect is minimized [Pp. 3, 10]². **Having the use of mitigation measures triggered by environmental risks, incidents and emergencies can help to ensure any environmental impact is negligible.**

44. Where appropriate, does the EIA process incorporate these mitigation measures into an environmental management plan or system?

- **The Environmental Impact Assessment is an Environmental Program listed within VIAA's Environmental Management Plan (*EMP*), thus, any mitigation**
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	measures triggered by the EIA process are implicitly incorporated in the Airport Authority's EMP.
45. How does the EIA process determine when it is appropriate to incorporate mitigation measures into an EMS?	<ul style="list-style-type: none"> • It appears as though the EIA process does not incorporate mitigation measures directly into their EMP, other than having such measures part of the Environmental Assessment program. The EMP seems to be broader in scope.
Evaluation of Significance	
46. How does the EIA process determine the relative importance and acceptability of residual impacts (i.e., impacts that cannot be mitigated) from a proposed activity?	<ul style="list-style-type: none"> • The AEC must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project. In addition, the AEC is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]². It appears as though the AEC is only required to describe any residual effects, but there is no process to determine their relative importance and acceptability.
Preparation of Environmental Impact Statement (EIS) or Report	
47. Does the EIA process include the preparation of an EIS or report?	<ul style="list-style-type: none"> • The AEC must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. An EIA report must be submitted to the Environment Department with a FAP (Facility Alteration Permit) application or in some cases with the Preliminary Approval Application [Pp. 2-3, 7]². Whenever the EIA process is initiated, the AEC is required to submit and report detailing their findings.
48. Does the EIA process have measures to ensure the EIS/report is clear and impartial?	<ul style="list-style-type: none"> • An approved environmental consultant (AEC) is required on a Project, and shall be retained by the applicant directly [Pp. 1, 2]². The AEC should be meant as an

impartial participant.

- The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project. In addition, the *AEC* is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]². **The intent of the EIA and factors to be considered help to ensure the EIA report is clear and systematic. Additionally, requiring consideration of public comments helps to provide added impartiality.**
- During construction, the *AEC* must conduct periodic field reviews to ensure mitigation measures are properly implemented and the Environmental Standards are being met. Field review reports are submitted to the Environmental Department and independent professional. At any time during construction, the Environmental Department may require field reviews in addition to the minimum number set out in VIAA documentation [Pp. 3, 9]². **Requiring the field review reports to be submitted to an independent professional helps to ensure impartiality.**

49. What aspects of the EIA process are covered in the EIS/report (i.e., potential impacts, proposed mitigation measures, significance of effects, concerns of interested public and affected communities)?

- The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to
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address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project. In addition, the *AEC* is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]².
The factors to be considered in an EIA report help to address issues that include potential impacts and their significance, proposed mitigation measures, as well as concerns of interested public and affected communities.

Review of EIS

50. Does the EIA process have any measures to determine whether EIS/reports meet their terms of reference?

- **There does not appear to be any requirement for a Terms of Reference in EIA policy.**

51. Does the EIA process have any measures to determine whether EIS/reports provide satisfactory assessment of a proposal(s)?

- **There does not appear to be any documented measures to determine whether an EIA report provides satisfactory assessment of a proposal. This duty may fall to the Airport Authority and/or the independent professional.**

52. Does the EIA process have any measures to determine whether EIS/reports contain all information necessary for decision making?

- The *AEC* must undertake an EIA of the Project, with the intent of identifying potential environmental effects associated with the design, construction, and operation of the Project, define measures to mitigate these effects and assess whether the Project will comply with the Environmental Standards. The EIA report must include consideration of: the environmental effects of the Project, including those resulting from malfunctions or accidents that may occur in connection with the Project and those that are cumulative; the significance of the potential environmental effects; mitigation measures that are technically and economically feasible to address any significant adverse environmental effects; and, any other relevant matter, such as public comments and the overall need for the Project. In addition, the *AEC* is required to provide a description of any residual effects [Pp. 2-3, 7(a-d)]².
The EIA process has report requirements for what is to be included. The factors to be considered make clear indications as to what should be addressed in the report. The only measure ensuring the report contains all information necessary for decision making is the requirement to consider “any other matter relevant to the assessment” not specifically mentioned.

Decision Making	
53. How does the EIA process decide whether to approve or reject a given proposal (i.e., set of criteria)?	<ul style="list-style-type: none"> • EIA policy appears to have no specific set of criteria (weighted or not) that would aid in deciding whether to approve or reject a given proposal.
54. Does the EIA process establish the terms and conditions for implementation of a proposal?	<ul style="list-style-type: none"> • There appears to be no EIA measures to establish the terms and conditions for implementation of a proposal.
Follow Up	
55. Does the EIA process include any measure to ensure the terms and conditions of approval are met?	<ul style="list-style-type: none"> • Following construction, the <i>AEC</i> must provide a Letter of Compliance to assure the Airport Authority that it has performed all the required services to which it committed. An Occupancy Permit will not be issued prior to receipt of a Letter of Compliance [Pp. 3, 11]². To an extent, a Letter of Compliance helps to ensure the EA objectives are met. • However, there appear to be no documented terms and conditions of approval in EIA policy.
56. Does the EIA process have any measures to monitor the impacts of development and effectiveness of mitigation measures?	<ul style="list-style-type: none"> • During construction, the <i>AEC</i> must conduct periodic field reviews to ensure mitigation measures are properly implemented, the Environmental Standards are being met, and construction is proceeding in an environmentally responsible manner. Field review reports are submitted to the Environmental Department and independent professional. At any time during construction, the Environmental Department may require field reviews in addition to the minimum number set out in VIAA documentation [Pp. 3, 9]². These field reviews are a method in which the <i>AEC</i> can monitor the impacts of development and effectiveness of mitigation measures. • Following construction, the <i>AEC</i> must provide a Letter of Compliance to assure the Airport Authority that it has performed all the required services to which it committed. An Occupancy Permit will not be issued prior to receipt of a Letter of Compliance [Pp. 3, 11]². A Letter of Compliance is required following the construction phase.
57. Does the process have measures to strengthen future EIA applications and mitigation	<ul style="list-style-type: none"> • It appears as though the EIA process has no measures to strengthen future EIA

measures?

applications and mitigation measures.

58. Where required, does the EIA process have measures to undertake environmental audit and process evaluations to optimize future environmental management?

- **There is an EMS Audit program included as part of the old EMP.**
- During construction, the *AEC* must conduct periodic field reviews to ensure mitigation measures are properly implemented, the Environmental Standards are being met, and construction is proceeding in an environmentally responsible manner. Field review reports are submitted to the Environmental Department and independent professional. At any time during construction, the Environmental Department may require field reviews in addition to the minimum number set out in VIAA documentation [Pp. 3, 9]². **A field review may constitute an environmental audit or process evaluation. However, these field reviews would still not optimize future environmental management.**

59. If yes, how does the EIA process determine when environmental audits and process evaluations are required?

- **There is an EMS Audit program included as part of the old EMP.**
 - During construction, the *AEC* must conduct periodic field reviews to ensure mitigation measures are properly implemented, the Environmental Standards are being met, and construction is proceeding in an environmentally responsible manner. Field review reports are submitted to the Environmental Department and independent professional. At any time during construction, the Environmental Department may require field reviews in addition to the minimum number set out in VIAA documentation [Pp. 3, 9]². **If we are considering a field review to be equivalent to an environmental audit or process evaluation, there are a minimum number of such reviews to be carried out during construction. Additional reviews can be requested at the behest of the Airport Authority.**
 - **External audits are conducted on each EMP program approximately every five years, while internal reviews are used to augment external audits on an as needed basis.**
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¹ Vancouver International Airport Authority Development Rules. Rev Sept 9, 1996 (Adopted Oct 2, 1995).

² VIAA Scope of Environmental Services. Version 2. Sept 27, 2004.