

# **Evaluating the Environmental Assessment Process in Canada and British Columbia: A Case Study of the Prosperity Mine Project**

**by**

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## Abstract

In its original effort to develop one of Canada's largest gold and copper deposits, Taseko Mines Limited proposed to develop the large scale Prosperity Gold-Copper Mine (the Project), approximately 125 km southwest of Williams Lake, British Columbia (BC). The Project triggered BC's provincial and Canada's federal environmental assessment (EA) process, and the two governments subsequently developed a joint review panel process, and agreed to a common *terms of reference*. However, in June 2008, BC's Minister of the Environment, ordered the BC Environmental Assessment Office (BC EAO) to carry out its own separate EA; therefore, two separate EAs were applied to the same proposed Project.

Following BC EAO's review, BC approved the Project in January 2010, while in November 2010, Canada rejected the same Project citing the review a federal panel. While using a common *terms of reference* for their assessment of the same Project, the two governments came to profoundly different conclusions with respect to the environmental and sociocultural effects of the Project. The divergent EA outcomes offer a unique case study, and highlight that values as well as science conflicts may be present throughout EA, and can influence professional judgments and EA decisions.

This report analyzes the divergent assessment outcomes for the Project, and assesses the degree to which the current EA process is inherently value-laden versus a rational science based approach. The report conducts with a best practice evaluation of both EA processes, without assuming that one is necessarily superior to the other, to assess the respective procedural and substantive shortcomings of Canada's federal and BC's provincial EA. Ultimately, this report discusses options for fundamentally restructuring the EA process from a rational comprehensive planning approach, to a collaborative planning approach that recognizes the inherently value-based and discretionary nature of EA.

**Keywords:** environmental assessment, best practice, collaborative planning, rational-comprehensive, science, values

*Dedicated to my father Haris, mother Merima, sister  
Hana, and my dear Dedo, Beba, and Besi.*

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## List of Acronyms

AIA:	Archaeological Impact Assessment
ARD:	Acid Rock Drainage
BC:	British Columbia
BC AG	BC Auditor General
<i>BC EAA:</i>	<i>British Columbia Environmental Assessment Act</i>
BC EAO:	British Columbia Environmental Assessment Office
CCME:	Canadian Council of Ministers of the Environment
CEAA:	Canadian Environmental Assessment Agency
<i>CEA Act:</i>	<i>Canadian Environmental Assessment Act</i>
CNSC:	Canadian Nuclear Safety Commission
CP	Collaborative Planning
CRD:	Cariboo Regional District
CWS:	Canadian Wildlife Service
DFO:	Fisheries and Ocean Canada
EA:	Environmental Assessment
EC:	Environment Canada
EES:	Environmental Evaluation System
EIS:	Environmental Impact Statement
GDP:	Gross Domestic Product
GHG:	Greenhouse Gases
HC:	Health Canada
IAIA:	International Association for Impact Assessment
KI:	Key Indicators
LSA:	Local Study Area
LRMP:	Land and Resource Management Plans
MEMPR:	Ministry of Energy, Mines and Petroleum Resources
ML:	Metal Leaching
MOE:	Ministry of Environment
MOF:	Ministry of Forestry
MTCA:	Ministry of Tourism, Culture and the Arts
NEB:	National Energy Board

Non-PAG:	Non-potentially acid generating
NRCan:	Natural Resources Canada
OAG	Office of the Auditor General Canada
PAG:	Potentially acid generating
PPPs:	Policies, Plans, and Programs
RA:	Responsible Authority
RCA:	Rational Comprehensive Approach
RSA:	Regional Study Area
SDM:	Shared Decision-Making
SEA:	Strategic Environmental Assessment
TC:	Transport Canada
TML:	Taseko Mines Limited
TNG:	Tsilqot'in National Government
TSF	Tailings Storage Facility

## List of Traditional First Nations Names

<b>First Nation Band Name</b>	<b>First Nation Traditional Name</b>
Alexandria Band:	Esdilagh First Nation
Alkali Lake Band:	Escketemc First Nation
Anaham Band:	Tl'etinqox First Nation
Canim Lake Band:	Teq'escen' First Nation
Canoe Creek Band:	Stswecem'c/Xgat'tem First Nation
High Bar Band:	Llenlley'ten First Nation
Nemiah Band:	Xeni Gwet'inv First Nation
Redstone Band:	Tsi Del Del First Nation
Soda Creek Band:	Xat'sull First Nation
Stone Band:	Yunesit'in First Nation
Toosey Band:	Tl'esqox First Nation
Williams Lake Band:	T'exelc First Nation

## List of Traditional Place Names

<b>Place Name</b>	<b>Traditional Place Name</b>
Beece Creek:	Bisqox
Big Onion Lake:	Jidizay Biny
Chilcotin River:	Tsilhqox
Fish Creek:	Textan Yeqox
Fish Lake:	Teztan Biny
Little Fish Lake:	Y'anah Biny
Lower Taseko Lake	Dasiqox Biny
Taseko River:	Dasiqox

# **Chapter 1.**

## **Introduction**

### **1.1. Research Context**

Environmental assessment (EA) is a proactive planning tool designed to address environmental considerations during the development and implementation of particular undertakings (Gibson et al., 2005). It is also an important regulatory tool for incorporating environmental protection into projects, while addressing society's expectation for economic growth (Hanna, 2009). Specifically, EA is designed to inform decision-making by providing data on the projected environmental, social, and economic impacts of proposed developments and on measures to mitigate adverse effects (Booth & Skelton, 2011; Hickey et al., 2010). However, widespread experience of EA as a proactive planning and environmental management tool is generating considerable debate among EA researchers, professionals, and the public, over the extent to which it is achieving its purposes (Jay et al. 2007).

In Canada, legislated adoption of EA requirements is one of the most influential and consistent examples of a movement towards more sustainable growth and development. However, many researchers consider economic development and environmental protection to be competing paradigms with conflicting objectives (Murphy, 1997; Nieto et al., 1995; Penny, 1994; Sachs, 1988). An EA process with environment protection as its primary objective is often criticized for undermining the business friendly regulatory framework that has provided so many Canadians with economic prosperity (Hanna, 2009). In contrast, an EA process that places a premium on economic growth may be incapable of ensuring adequate protection of the environment. This promotes a form of development that can lead to environmental degradation, the proliferation of risky technologies, and the deepening of social inequalities (Gibson et al., 2005; Nieto, et al.

1995). Designing the EA process to achieve balance between economic development and environmental protection objectives is a challenging task. The purpose of this research project is to address this challenge by evaluating the current EA process in Canada and BC to identify strengths and weaknesses and make recommendations for improvement.

### **1.1.1. Jurisdictional Background**

Under the Canadian *Constitution Act* (1867), both the provincial and federal governments may be responsible for administering separate or joint EA legislation for major reviewable projects (Kwasniak, 2008). This division of powers between the federal government and the provinces means that both levels of government must share responsibility for environmental protection (McKenzie, 2002). The federal EA process is triggered through a project list approach, where an EA is required for undertakings that are included in the list of designated projects. BC's EA process covers projects within the province; however, many projects are exempt or are covered under other processes, such as forestry and most provincially based oil and gas developments (Booth & Skelton, 2011).

In Canada, the federal and provincial regulation of EA occurs through separate legislative frameworks. The legislative framework for the federal process is the *Canadian Environmental Assessment Act*, 2012, SC 2012, c 19, s 52, (*CEA Act*). The legislative framework for BC's provincial process is the *Environmental Assessment Act*, SBC 2002, c 43. (*BC EAA*). This multi-jurisdictional EA framework has resulted in overlapping legislative responsibilities (Fitzpatrick & Sinclair, 2009). When multiple jurisdictions are affected by a project, the development may be required to undergo both a federal and a provincial level of assessment (Booth & Skelton, 2011), which can happen separately or through a harmonized joint review process.

To minimize costly duplication between the federal and provincial EA process, BC and the federal government have signed an EA harmonization agreement. Under the *Canada-British Columbia Agreement for Environmental Assessment Cooperation* (2004), projects that require EA by both levels of government can undergo a single

assessment, which is administered cooperatively (Haddock, 2011). The joint EA process “must meet the legal obligations of each government while sustaining their respective existing roles and responsibilities” (BC EAO, 2010, p.12). However, even after both governments agree to common *Terms of Reference* for the assessment, the province can opt out of the joint review and decide to conduct its own independent assessment (Haddock, 2011).

Recently, the federal and BC governments conducted separate EAs of a major mining proposal: The Prosperity Mine project (the Project). BCs EA approved the Project while the federal EA rejected the undertaking. While using a jointly approved *Terms of Reference* and environmental impact statement (EIS) guidelines, and responding to the same project information and analysis collected by the proponent, the federal and provincial EAs came to different conclusions concerning the significance of project impacts. The different outcomes of the two EA processes are unprecedented. Consequently, this case presents a unique opportunity to better understand and evaluate EA by analyzing why and how the two different EA processes could come to different conclusions regarding the same project.

A common view held by many EA experts and the public, is that an ideal EA process should be an evidence-based instrument aiming to add scientific rigor to proposed undertakings by applying a range of neutrally-administered and objective assessment methods and techniques (Fisher, 2007). It should result in consistently accurate information that is appropriate for environmentally sound decision-making, regardless of the jurisdiction conducting the assessment (Sadler et al., 2011). The assumption of objective, scientific based decision-making is the basis of EA legislation in Canada, which relies on expert panels and scientific evidence to reach conclusions. The inconsistent EA judgments for the Project provide real-world evidence that Canada’s EA processes may not meet this ideal, and may be fundamentally flawed. More importantly, the divergent findings highlight that the basic decision-making process embedded within Canada’s federal and provincial EA procedures may be inherently value-based. This means that EA decision-making in Canada and BC may not be governed by rational objective science-based knowledge, but instead may be a product of a value-based decision making process that can naturally include: behavioral biases; variability and

ambiguity of preferences and norms; distribution of decision making over actors and in time; and, processes of learning and negotiation between multiple actors (Kornow & Thissen, 2000). This question of the role of values versus science in EA is one of the central questions addressed in this research project.

### **1.1.2. Problem Introduction**

The Prosperity Gold-Copper Mine project proposed by Taseko Mines Limited (TML) would be built approximately 125 km southwest of Williams Lake, BC, in the Williams Lake Regional District (TML, 2009). The Project involves the construction, operation, decommissioning and abandonment of a large scale gold and copper mine with an operating life of 20 years (CEEA, 2010). The main elements of the Project include an open pit mine, a 125km transmission line, an access road and transportation corridor, an onsite mill, and fish compensation works (CEEA, 2010; TML, 2009).

The biophysical, social, and economic impacts of the Project directly affected BC's jurisdiction, while at the same time triggering the federal review process through the *Fisheries Act*, *Navigable Waters Protection Act* and *Explosives Act* (CEAA, 2012). Under the *Canada-British Columbia Agreement on Environmental Assessment Cooperation* (2004), provincial and federal governments developed a joint review panel process and agreed to a common (CEEA, 2010; Haddock, 2011). However, in June 2008, the provincial Minister of the Environment Barry Penner stated that that the joint review panel process was "not warranted in the circumstances" (Haddock, 2009). The minister issued a Section 14 order under the *BC EAA*, which required the BC EAO to carry out its own separate EA (CEEA, 2010). Therefore, two separate EA processes were applied to the Project.

Following the BC EA review, the BC government approved the Project in January 2010 (Haddock, 2011). The BC EAO concluded that the only significant adverse effect of the Project would be on fish and fish habitat, but underlined that these effects could be mitigated given the proponent's fish habitat compensation plan, and decided the adverse effects were justified given the significant economic and employment benefits of the Project (BC EAO, 2009). The Government of Canada however, rejected the same

project in November 2010, citing the review of an independent federal assessment panel (the Panel)(CEAA, 2010). The Panel concluded the Project would result in “significant adverse environmental effects on fish and fish habitat, on navigation, on the current use of lands and resources for traditional purposes by First Nations, on cultural heritage, and on certain potential or established Aboriginal rights or title” (CEAA, 2010, p. ii). The Panel also determined that the project would have significant adverse cumulative effects on grizzly bears in the region. Both processes used a common *terms of reference* for assessment of the same project; however, they came to profoundly different conclusions with respect to the environmental and sociocultural effects of the Project.

### **1.1.3. A Unique Analysis of EA in Canada and BC**

The contradictory EA outcomes for the Project offer a unique case study. The situation highlights that values as well as science conflicts may be present throughout EA, and can influence professional judgments and EA decisions (Richardson, 2005). The divergent assessment outcomes also highlight that, however well meaning practitioners may be, EA in Canada may not be a rational and expert-driven framework practice defined by a professional balance of fairness, objectivity, and impartiality, where facts are easily distinguishable from opinions. Instead, EA may be based on values and interests that influence the interpretation of evidence, which can lead to different conclusions. EA therefore may be both a science and a politically based process. This is the main reason that there is a, “tremendous gulf between the theory of EA and the reality of on-the-ground practices in Canada” (Boyd, 2003, p.161).

Most evaluations of EA assess the legislative and technical framework relative to best practices. A comprehensive evaluation of the EA framework based on best practice principles can certainly identify opportunities for improving EA. However, this study raises a more profound evaluation question. If EA in Canada is fundamentally a value and interest based instrument, how should the process be designed to incorporate values and interests alongside science. Specifically, this research moves away from issues of procedural EA evaluation towards assessing the underlying assumptions of EA as an objective, expert led scientific process. It places EA within the broader planning and decision-making process.

Acknowledgement of the role of values, and conflicts over values has been accepted in planning theory and practice for decades (Richardson, 2005). Therefore, planning theory may have much to offer EA literature and practice in understanding how to integrate values and science into decision making. However, the two disciplines have largely proceeded along parallel but separate paths and have only experienced sporadic and limited interaction (Lawrence, 2000). The result is that EA has generally failed to benefit from the lessons and insights of planning (Lawrence, 2000). This research will begin to address this deficiency by outlining the relevance of planning to EA. Planning is significantly better evolved for the integration of values, ethics and postmodern perspectives into decision-making and policy formation; therefore, it can provide important insights for improving Canadian EA.

## **1.2. Purpose and Objectives**

The purpose of this research is to analyze the divergent assessment outcomes for the Project to assess the degree to which the current EA process in Canada and BC is an inherently value-laden process versus a rational science based process. This research will conduct an evaluation of both EA processes without assuming that one is necessarily superior to the other. The objective is to assess the strengths and weaknesses of both the federal and BC EA processes and the implications of different approaches reaching different conclusions on the same project.

The specific objectives of my research are to:

1. Summarize current academic literature on EA theory and practice and identify best practice criteria for EA;
2. Summarize the current and changing legislative framework of EA in Canada and BC;
3. Provide a narrative summary for the federal and provincial EA reports for the original Project and highlight their different findings,
4. Using EA best practice criteria, evaluate the federal and provincial EA reports, highlight the weaknesses of the respective processes and identify implications of the findings for EA;
5. Make recommendations for improving EA based on the findings from the case study

6. Address the deep-rooted substantive limitations of current EA practice in Canada and BC based on the respective evaluations of the Project.

### **1.3. Methodology**

The methodology used in this report primarily consists of a review of primary and secondary academic literature associated with EA, and planning theory and practice. The data sources include relevant scholarly literature, a large collection of peer-reviewed journals, and specific EA reports and transcripts. The literature review covers multiple themes and areas of inquiry. The first sections of the report cover the practical and procedural aspect of EA, while the latter sections reflect on the substantive aspects of EA by uniting scholarly literature on planning and EA theory. Project specific data for the Project are retrieved from the proponent's research, the provincial and federal assessment reports, and independent research publications. The EA best practice evaluation criteria are based on the principles drawn from Canadian and international EA literature. Recent editions of Canadian environmental law textbooks and relevant legislation provide the foundation for the description of current Canadian EA legislation. The arguments advanced in the second section of the report are mainly theoretical, but empirical examples are included where possible to include multiple perspectives.

### **1.4. Report Structure**

The report is divided into three sections and eight chapters, including this introductory chapter. The structure of the report is shown in Figure 1.1.

The first section synthesizes contemporary EA theory, practice, and legislation using current scholarly and practitioner literature. The section has two chapters, which include:

- The *second* chapter, which places EA within contemporary planning theory, provides a comprehensive overview of EA theory and methods, and describes the EA best practice criteria that will be used for the evaluation of the Project; and,

- The *third* chapter, which describes Canada's current federal and BC's provincial EA legislation and practice, and First Nations' jurisdictional standing in EAs;

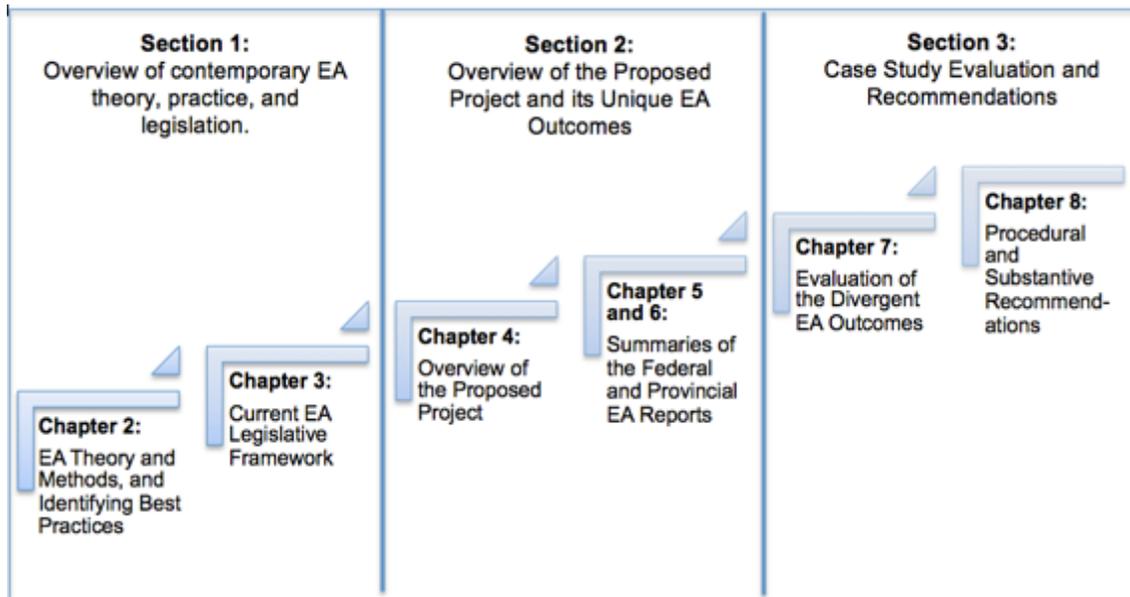
The second section provides an overview of the Project and the unique EA outcomes of its respective assessments. The section has three chapters, which include:

- The *fourth* chapter, which provides an overview of the Project;
- The *fifth* chapter, which provides a narrative summary of the Project's assessment report conducted by the BC EAO;
- The *sixth* chapter, which provides a narrative summary of the Project's assessment report conducted by the Panel; and,

The final section examines why the provincial and federal EA processes came to different conclusions for the Project, and the implications of this for EA. The third section has two chapters, which include:

- The *seventh* chapter, which evaluates the divergent assessment outcomes of the BC EAO and the Panel for the Project, using the EA best practices criteria developed in chapter two; and,
- The *eighth*, and final chapter, which addresses the procedural and deep-rooted substantive problems of Canada and BC's current EA framework based on the evaluation of the Project. This final chapter will draw from contemporary planning theory and practice to provide recommendations for a fundamental shift in substantive EA theory and practice.

**Figure 1-1: Report Structure**



## **Chapter 2.**

# **Environmental Assessment Theory and Methods**

## **2.1. Chapter Overview**

This chapter provides an overview of EA theory and the standard EA process, and identifies best practice criteria for EA. The first part of the chapter acknowledges the theoretical basis of EA by reviewing theory on its substantive purpose, as well as its relationship with science, values, and conflict. The second part of this chapter provides an overview of the standard EA process and identifies 16 EA best practice criteria. These criteria are used for the evaluation of the divergent EAs for the Project. A literature review of recent scholarly and practitioner literature on EA theory, its standard process, and its best practice criteria, is the foundation to this chapter's discussion. This chapter provides an abbreviated summary of EA theory and practice, and those wishing more detail should consult appendix A.

## **2.2. Defining EA**

Various terms have become synonymous with EA and are used interchangeably throughout the literature, and occasionally the process is called environmental impact assessment, social and ecological assessment, or environmental appraisal (Gibson et al., 2005). Sometimes the use of different titles suggests differences in approach with respect to the procedural steps, the range of undertakings subject to assessment, the scope of the assessment, the criteria to be satisfied, the flexibility of the application, and the function of participants (Gibson et al., 2005). However, regardless of its name, this research will fundamentally treat EA as a proactive planning tool, and vehicle for stakeholder participation and consultation.

As a proactive planning tool EA involves collecting and evaluating information about probable impacts of proposed undertakings, and integrating environmental, social and economic factors to ensure that development is sustainable (Boyd, 2003). As such, EA is not about making decisions to reject proposed developments. Rather, EA is a process that at best ensures that developments proceed with full knowledge of the environmental consequences (Hanna, 2009; Hickely et al., 2010). As a vehicle for stakeholder participation, EA is a tool for engaging with communities and stakeholders that are potentially affected by proposed undertakings. Through the EA process, those affected can be more meaningfully informed and involved in the planning and development of the proposed undertaking.

### **2.2.1. Substantive Theory that Informs Canada and BC's Current EA Framework**

EA can operate along a broad range of philosophies and values that distinguish its substantive purpose and shape the role of science and values throughout the process (Cashmore, 2004; Bartlett and Kurian, 1999). The models that constitute its frame of reference largely determine how EA is understood to operate, its policy significance, and the influence it has on the politics of environment protection (Bartlett and Kurian, 1999). Contemporary EA in Canada and BC can be traced directly back to the rational comprehensive approach (RCA) to planning and decision-making (Noble, 2009; Owens, Rayner, and Bina, 2004).

#### ***The RCA and EA***

EA directly draws upon four basic elements of the RCA, which as outlined by Hudson (1979), include: (1) goal setting; (2) identification of alternatives; (3) evaluation of means; and, (4) implementation of the decision (p. 388). In order to better respond to the complexity and interwoven nature of many environmental, economic and social issues, several other models and theories have evolved around the basic RCA model (Hannah, 2009). However, Friedmann's (1987) expanded RCA model still remains a valid representation of the contemporary EA process in Canada and BC. Friedmann's (1987) seven stages of the RCA include:

- Formulation of goals and objectives;

- Identification and design of major alternatives for reaching the goals and objectives;
- Prediction of consequences and impacts that would be expected to flow from each alternative;
- Evaluation of consequences in relation to desired goals and objectives;
- Making the decision based on information provided in preceding steps;
- Implementation of the decision through appropriate institutions;
- Feedback and monitoring of the impacts and consequences of the decision and responding to them (p.78).

Furthermore, the RCA approach assumes that objective decision-makers will administer the process. Both the RCA and EA theory assume that these objective decision-makers will have the following information:

- a well defined problem;
- a full range of alternatives and possible options;
- comprehensive baseline information;
- knowledge of the consequences and impacts of each alternative;
- full information about the preferences and values of those affected; and,
- adequate time, skills and resources to consider all of the above (Forester, 1987; Noble, 2009a).

EA practice in Canada and BC predominantly follows a methodology that mirrors the RCA. This includes an information-oriented approach where objective experts use the scientific method to discover the most significant effects that different undertakings have on the environment. The basic hierarchical framework of the *Environmental Evaluation System* (EES) is commonly utilized for EAs (Persson, 2006). The EES is based on the hierarchical assessment of environmental quality indicators (Dee et al., 1973). The EES is designed around assumptions of:

1. empiricism- knowledge comes from observation, experimentation or, observation rather than theory;
2. objectivity- experts should be free of personal biases, priori commitments, and emotional involvement;
3. reductionism- it is possible to explain phenomena in terms of their component parts; and

4. quantification- information should be measurable and based on hard science (Park, 2008).

Canada and BC's EA methods operate under these assumptions, and directly borrow the basic ESS classification levels for the different environmental and social quality indicators (appendix table A.1).

### ***Science Philosophies and Models that Inform EA in Canada and BC***

EA can exist along a broader spectrum of science philosophies and models (Cashmore, 2004). At one end of the spectrum EA is placed in the applied science paradigm, as a process in which the scientific method is put to practical application (Cashmore, 2004; Noble, 2009a). At this extreme, the EA process is only viewed as credible when it is based on the rational process of objective modeling and experimentation, quantified impact prediction, and sufficient hypothesis testing (Cashmore, 2004; Noble, 2009a). At the other end of the spectrum EA is placed in the civic science paradigm, as a tool for influencing decisions through the application of pragmatic, inclusive and deliberative forms of science (Cashmore, 2004). At this extreme, EA is perceived as a tool to empower stakeholders and promote an egalitarian society, and is viewed as credible when it can encompass the political and social nature of policy and decision-making (Cashmore, 2004; Noble, 2009a).

There are several models of EA that fall between these two extremes, each with its own position concerning the substantive purpose of EA. According to Cashmore (2004) and Noble (2009a) the spectrum of EA philosophies and values can be represented as a series of five nebulous models, which interpret the role of EA as either:

- An ***analytical science tool***, which serves to inform decisions and enhance scientific understanding through applied, experimental, and naturalistic methods;
- An ***environmental design tool***, which serves to inform and influence design decisions using applied environmental science for design and engineering;
- An ***information provision tool***, which serves to inform decisions using natural science methods, with a limited role for the social sciences;
- A ***tool for participation***, which enhances participatory decision making using both natural and social science methods; and

- An **environmental governance tool**, which promotes deliberative democracy using social science methods, with a limited role for the natural sciences (Cashmore, 2004; Noble, 2009a p. 5) (appendix table A.2).

### **Value Philosophies and Models that Inform EA in Canada and BC**

Another way of categorizing approaches to EA is based on a spectrum of value philosophies and models, which can also have distinct implications for the substantive purpose of EA. According to Bartlett and Kurian (1999), the spectrum of EA philosophies and values can be represented as six nebulous models, which interpret EA as:

- An **information processing model**, which assumes that EA is primarily a technique for generating, organizing, and communication information;
- A **symbolic politics model**, which assumes that EA is primarily (1) a mechanism for evoking emotional response and affirming moral commitments, or (2) a technique for dishonest legitimation of the exercises of power by the powerful;
- A **political economy model**, which assumes that EA arises as a function of markets and has its largest effects on the private sector. In this model, EA occurs through the way it alters financial opportunities, risks, and constraints, which can result in the internalization of externalities leading to the prevention of anticipated harm.
- An **organizational politics model**, which assumes that the way EA influences policy is by the degree of internal transformation or reform that it causes in organizations;
- A **pluralistic politics model**, which assumes that EA's main policy impact is around the increased participation, involvement and leverage that it facilitates for the public and for organized interests; and
- An **institutional model**, which assumes that the role of EA is to promote institutional (values, perspectives, and ways of doing things) transformation that results in the establishment of precarious values like environmental protection (Bartlett and Kurian, 1999, p. 417-425) (appendix table A.3)

### **2.3. Standard EA Practice: The Ideal Stages of Project Review**

The standard EA process is a series of distinct stages (Eccleston, 2011; Fisher, 2007; Noble, 2009a; Sadar, 1996). EA literature commonly describes six important stages of a comprehensive EA process (table 2.1). The following section describes each of the stages in greater detail.

**Table 2-1: The Standard EA Process**

<b>Stage 1: Project Description or Proposal</b>
<ul style="list-style-type: none"> <li>• Description of a proposed action, including its alternatives, and other details sufficient for an assessment <sup>(3)</sup></li> <li>• The undertaking may be articulated as a need, followed by an outline and options for meeting that need.<sup>(3)</sup></li> </ul>
<b>Stage 2: Screening</b>
<ul style="list-style-type: none"> <li>• Determination of whether the action is subject to an EA, and if so, what type of assessment is required<sup>(3)</sup>.</li> </ul>
<b>Stage 3: Scoping</b>
<ul style="list-style-type: none"> <li>• Identification of spatial boundaries, time frames, and key issues or effects to consider <sup>(1)</sup></li> </ul>
<b>Stage 4: Proposal Assessment: Impacts Prediction, Evaluation, and Management</b>
<ul style="list-style-type: none"> <li>• Prediction of environmental impacts (quantitative and qualitative), the determination of impact significance, and the identification of mitigation measures <sup>(2)(3)</sup></li> </ul>
<b>Stage 5: Review, Recommendations, and Decision</b>
<ul style="list-style-type: none"> <li>• Technical and public review of environmental impact statements and related documents, and subsequent recommendation as to whether the proposed action should proceed and under what conditions <sup>(3)(4)</sup></li> <li>• Involves the assessment and identification of potential trade-offs and the optimal mix <sup>(2)</sup></li> </ul>
<b>Stage 6: Follow-up: Conformance, Performance, Uncertainty and Dissemination</b>
<ul style="list-style-type: none"> <li>• Implementation of action and associated management measures <sup>(3)</sup></li> <li>• Monitoring of actual performance and adjustment of measures where appropriate <sup>(2)</sup></li> <li>• Monitoring of the accuracy of impact predictions<sup>(3)</sup></li> </ul>

**Sources:** (1)Eccleston, 2011; (2)Fisher, 2007; (3)Noble, 2009a; (4)Sadar, 1996

### **2.3.1. Project Description or Proposal**

In this stage the proponent must describe the project and justify the rationale for the project (Sadar, 1996). The rationale may be articulated as a need, which must be supplemented by options and outlines for meeting that need (Hanna, 2009). In addition, the proponent must roughly identify the direct and indirect outcomes of the proposed development for resource or environmental quality or policy (Sadler, 2011). The proponent may be required to demonstrate alternative means for accomplishing project objectives or even alternatives to the project itself. The way the EA evolves depends on

the nature of the project and the quality and extent to which the proposal has been developed.

### **2.3.2. Screening**

The second stage involves screening and is a trigger for an EA (appendix table A.4). Screening determines whether an EA is required, and if so, to what extent or by what means. A screening process will result in one of the following decisions: an EA is not required; a limited EA is required, which consists of preliminary assessment or mitigation plans; a comprehensive EA is required, or the initial environmental evaluation requires further study to determine what type of EA is required (Noble, 2009a).

An ideal screening process can ensure that important and relevant proposals undergo the comprehensive assessment they require, without subjecting small projects to needless delay and costs (Hanna, 2009). Noble (2009a) suggests that globally a more precautionary approach to screenings is warranted (p. 80). The precautionary principle in EA means putting greater emphasis on identifying impact uncertainties and associated risks, and avoiding potential problems by favoring low-risk alternatives (Gibson et al., 2005). As a screening guideline, the precautionary principle should place the burden of proof and responsibility on the proponent, to demonstrate impact insignificance (Lawrence, 2005).

### **2.3.3. Scoping**

Once it is determined that an EA will be conducted, the scoping process begins. At this stage it is decided what issues the EA will specifically address. A good scoping process must identify Valued Ecosystem Components (VECs), which are key environmental, physical, and human features of the region under study. Gibson et al. (2005) offer a comprehensive description of the scoping phase, where they define scoping as a process that “must ensure attention to the full set of intertwined facts affecting prospects for sustainability and the entire lifecycle of an undertaking- from the initial consideration of purposes and alternatives to eventual cancellation, replacement or decommissioning” (p. 154). They emphasize that scoping must be “an open and

participative exercise that gives close attention to the complex systems in which assessments and undertakings proceed” (p.154). Good-practice scoping (appendix table A.5) is an ongoing activity in the EA process, where the environment is constantly examined to detect signs of unidentified project variables and adverse environmental changes (Noble, 2009a). Public participation should be an integral part of determining the scope of an EA, as consultation in the scoping stage can identify what is important to those who are directly affected by the outcome of a potential development (Noble, 2009a).

#### **2.3.4. Proposal Assessment**

After scoping is complete, assessment of the proposal begins. Generally, the proposal assessment stage consists of project impact prediction, determination of project impact significance, and identification of project impact management plans.

##### ***Impact Prediction***

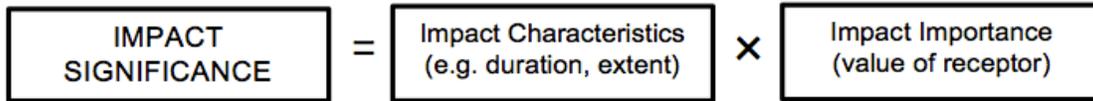
Impact prediction is a fundamental component of EAs because foresight and forethought about potential project implications should inform an effective assessment process (Fisher 2007; Hanna 2009; Morris and Therivel 2001; Noble 2009a; and Sadar 1996) (appendix table A.6). Predictive tools cover a wide spectrum of social, ecological, economic, and physical facts (Noble, 2009a). Predictive methods and techniques can be classified using several broad groupings of tools, which include: models; extrapolation; experimental tools; analogue tools; judgmental tools; scenarios; and spatial tools (Morris and Therivel 2001; Noble 2009a; and Sadar 1996).

##### ***Impact Significance***

During the assessment stage likely project impacts must also be assessed for their significance. There is no single definition of significance and there are various interpretations of the concept (Noble, 2009a). Hanna (2009) offers an all-encompassing definition of significance as a “subjective notion determined by the importance that the stakeholders, the proponent, the regulators, and the decision makers attach to specific impacts” (p.11). Noble (2009a) offers a linear definition of impact significance as a

function of environmental impact characteristics and the value attached to the affected component (p.128)(figure 2.1).

**Figure 2-1: Linear definition of impact significance**



Source: Noble 2009

Defining significance for the purpose of assigning more or less demanding assessment streams is largely based on the degree of perceived impact significance. Effects are likely to be perceived significant if:

- they adversely affect VECs ( economic, social, ecological etc.) (Noble, 2009a, Sadar, 1996);
- they are intensive in concentration or associated with high levels of change (Noble, 2009a);
- they are frequent and long lasting (Noble, 2009a);
- they are associated with a high degree of probability (Noble, 2009a);
- they are frequently raised by the public as a concern (Sadar, 1996);
- careful attention to purposes and alternative approaches seems likely to reveal less risky or damaging and/ or much more beneficial options (Gibson et al., 2005);
- they are irreversible (Noble, 2009a);
- they are associated with cumulative change (Noble, 2009a); and
- they are not in compliance with legal requirements, regulatory standards, and guidelines (Sadar, 1996)

Effects are likely to be perceived less significant for undertakings that are:

- most likely to have trivial effects on sustainability;
- clearly the best (or least bad) of potentially available options;
- the least likely to have unanticipated effects; and
- well designed to be reversible or otherwise adaptive to surprise (Gibson et al., 2005).

Project impact significance is a subjective concept that is perceived differently by various project stakeholders. CEAA's reference guide connects significance to the concepts of *adverse* and *likely*. However, differences in opinion often arise when considering what represents a significant, adverse, or likely environmental effect. Specifically, differences in opinion arise when considering what contextual facts are to be included, the appropriate regulatory requirements and standards, and how to make robust, transparent, and representative significance determinations (Noble, 2009a). Given these incongruities, Lawrence (2005) suggests several principles that should guide effective impact significance determination (appendix table A.7).

### ***Impact Management***

Once potential environmental impacts have been identified and their significance determined, the next step of the proposal assessment stage is to design mitigation measures and compliance programs to address those impacts (appendix table A.8). These actions are collectively called impact management measures and are designed to avoid, lessen, or offset undesirable project impacts and to generate or enhance beneficial project impacts (Noble, 2009a). Impact management good practice measures are only effective if they are actually implemented, monitored for success, and adjusted accordingly for specific projects.

### **2.3.5. Review and Decision**

Following the assessment, submission and review of the assessment findings takes place. The first step is to bring together information that has been collected and analyzed, and compile it into an EA report (Hanna, 2009). This report is the vehicle through which the findings of the assessment are presented. The required content and structure of the report depends on the expectations of the regulating EA agency. Expectations are communicated through EA process guides, through pre-consultation with the proponent, or through the formal provisions of the terms of reference (Hanna, 2009). Once the report is completed, it is presented to the EA agency for a review and a decision. The decision-making process is complex (Gibson et al., 2005; Hanna, 2009 ; Noble, 2009a; Sadler et al., 2011) and in most cases is better characterized as a recommendation process. The recommendation of an EA agency might be to approve a

proposal as it is or with conditions, reject it in its present form, or reject the proposal outright (Hanna, 2009).

As outlined earlier, an ideal EA process should be an evidence-based instrument aiming to add scientific rigor to proposed undertakings by applying a range of neutrally-administered and objective assessment methods and techniques (Fisher, 2007). It should result in consistently accurate information that is appropriate for environmentally sound decision-making, regardless of the jurisdiction conducting the assessment. EA is not, in and of itself, a decision-making tool and does not set standards for environmental quality and resource management (Booth & Skelton, 2011; Hickey et al., 2010). The following chapter on Canadian EA legislation highlights that, in practice, the product of an EA is a recommendation. The power to make a decision is based on that recommendation and commonly resides at the political level, specifically with the Minister of the agency that is responsible for the EA (Hanna, 2009). The minister may formally accept or reject the recommendations of the responsible agency. Decision-making provisions after completing an EA process should be primarily guided by principles of objectivity, fairness and common-sense, which is preferably incorporated into a comprehensive, well-integrated, and consistent set of decision criteria (Gibson et al., 2005; Sadar, 1996). Specifically, decision makers should give due consideration to the environment and be able to justify their decision based on the findings of the assessment report and the consultations conducted (Fisher, 2007).

### **2.3.6. Follow-up**

The final stage of the EA process is follow-up, which is what occurs after a decision is made (Hanna, 2009; Noble, 2009a). As highlighted in Table 2.1, there are multiple components of the follow-up stage. Partidario and Fisher (2004) describe how follow-up activities can take four different forms:

1. **Conformance follow-up:** monitoring if there is compliance with agreed EA objective, regulatory requirements, standards, and conditions.
2. **Performance follow-up:** monitoring the environmental and sustainability performance following project implementation.

3. **Uncertainty follow-up:** managing actual impacts, reviewing the effectiveness of possible mitigation or compensation measures, and modifying undertakings in case of unanticipated adverse effects.
4. **Dissemination follow-up:** providing feedback for the design of new and similar policies, plans, and programmes, or methods and approaches of implementation.

Overall, follow-up is both important in supporting compliance, as well as for providing valuable information that can improve the efficiency, effectiveness and baseline information of future assessments (Hanna, 2009). The CEAA's most recent Operational Policy Statement (2011a) states that the purposes of follow-up are to:

- verify predictions of environmental effects identified in the EA;
- determine the effectiveness of mitigation measures in order to modify or implement new measures where required;
- support the implementation of adaptive management measures to address previously unanticipated adverse environmental effects;
- provide information on environmental effects and mitigation that can be used to improve and/or support future EAs including cumulative environmental effects assessments;
- support environmental management systems used to manage the environmental effects of projects.

### **2.3.7. Strategic Environmental Assessment**

Strategic environmental assessment (SEA) deserves its own chapter; however, staying within the scope of this research project, this section will highlight the basis of SEA, which has become one of the most widely discussed subjects in the field of contemporary EA. SEA is an expanded method of EA that incorporates a tiered planning process, which begins with the formulation of a policy at the upper level, is followed by a plan at the middle stage, and by a program at the end (Wood, 1995). A policy refers to “an inspiration and guidance for an action”, a plan refers to “a set of coordinated and timed objectives for implementing the policy”, and program “refers to a set of projects in a particular area” (Wood, 1995 p. 266). SEA is about integrating environmental and social considerations into a higher-order process of decision-making, where policies, plans, and programs (PPPs) and their alternatives are proactively and broadly assessed beyond the confines of project-level EAs (Doelle, 2008; Noble and Harriman-Gunn,

2009). SEA has different features than project-based EA (appendix table A.9), and as such, adopts a different set of guiding principles (appendix table A.10).

There are several benefits of SEA. Most notably, SEA is better equipped to proactively ensure sustainable development of the environment more effectively than reactive project-based EAs. Noble (2009a) has recently conducted an extensive literature review of the principles and practices of SEA and identified several benefits of the process, which can include:

- Allowing for a more immediate and effective analysis of cumulative effects on a broader spatial scale;
- Addressing the cause of impacts rather than simply treating the symptoms;
- Considering secondary and associated effects and activities;
- Considering delayed and long-range impacts;
- Considering alternatives early in the decision process before irreversible decisions are made;
- Assessing overall sector and area-wide effects before decisions to carry out undertakings are made;
- Verifying that the goals and purposes of proposed undertakings are environmentally sound and consistent with broader PPP objectives for the region; and
- Saving resources and time by setting the context for subsequent regional and project-based assessments (Noble, 2009a p. 233).

## **2.4. EA Best Practices**

An important objective of this study is to identify EA best practices criteria that can be used to evaluate the respective assessments of the Project. Noble (2009a) defines EA best practice as adherence to general principles, or “the best way of doing things, as determined by the specific social, political, cultural, and environmental context within which the EA is taking place” (p.7). Two types of EA best practices can be developed. The first type establishes a set of best practices for each of the standard stages of the EA process (outlined above). These practices prescribe specific actions that should be taken at each stage of the EA so that the process can contribute to an overall successful outcome. The second set of best practices can be developed for the

general principles and attributes that govern EA methodology, and can apply to many and in some cases to all of the standard EA stages (Joseph, 2013). Fitting with the scope of this research, an evaluation framework based on the second type of EA best practice is developed.

#### **2.4.1. EA Best Practice Evaluation Criteria**

An EA best practices literature review was undertaken for this study, and the evaluative framework in the following section is based on this review. The core of this report's EA best practices evaluative framework is based on the criteria used by Joseph (2013), Van Hinte et al. (2007), and Wozniak (2004) (appendix table A.11). SFU's Offshore Oil and Gas Research Group (OOGRG) originally developed this framework in 2004 (OOGRG 2004), which in turn was based on a review and integration of the best practice frameworks developed by: The Canadian Environmental Network (CEN) (1988); Gibson (1993); Sadler (1996); International Association for Impact Assessment (IAIA) (1999); Wood (1995); and Lawrence (2003) (appendix table A.12). The evaluative criteria are also supplemented by a review of the following literature; Boyd 2003; Creasey and Ross, 2009; Farrel and Jager, 2006; Gibson et al., 2005; Hanna 2009; Noble 2009a; Plate et al. 2009; Sinclair and Doelle, 2010;

This report's evaluation framework is comprised of 16 interrelated best practice principles. The best practice principles jointly outline the basic requirements necessary for an effective EA process. The following subsections elaborate upon each best practice principle. An indicator box accompanies each principle, and specifically highlights the questions that will be addressed when applying the principles to the evaluation of the divergent EAs for the Project (appendix table A.14). Table 2.2 summarises the 16 best practice principles.

#### ***Clearly Defined Roles and Responsibilities***

The EA process involves multiple and ongoing interactions between numerous agencies; therefore, the roles and responsibilities of all involved should be fully and explicitly described (Joseph, 2013; Lawrence, 2003; Van Hinte et al., 2007; Wozniak, 2004). Formal legislation and/or legal agreements should inform institutional roles, and

provide clear guidance and clearly outline levels of authority and responsibilities (Van Hinte et al., 2007; Wozniak, 2004). In addition, formal and informal mechanisms should be used to support multijurisdictional collaboration. Clearly defined roles and responsibilities are essential for an efficient, accountable, and collaborative EA process (Van Hinte et al., 2007).

**Box 2.1. Indicators for Evaluating Roles and Responsibilities**

*Are the roles and responsibilities of all those involved in the EA clearly defined?*

- Does the description of the roles provide guidance and clearly outline levels of authority and responsibilities?
- Are the roles defined in legislation and/or legal agreements?
- Do formal mechanisms support multijurisdictional collaborations?

**Source:** Joseph, 2013; Lawrence, 2003; Van Hinte et al., 2007; Wozniak, 2004

### ***Clearly Defined Decision-Making Criteria***

The decision-making process within the EA should be guided by a consistent set of decision criteria, which are clear, comprehensive, well integrated, and accordingly elaborated on for the case at hand (CEN 1988, Gibson et al., 2005; IAIA, 1999; Van Hinte, 2007). Measurable and tightly defined decision-making criteria should guide transparent and objective judgements, and minimize ministerial discretion (Joseph, 2013; Sinclair and Dolle, 2010). A sound decision-making process should maximize accountability, transparency, and consistency, regardless of the impact scale (Gibson et al., 2005; Lawrence, 2003; Van Hinte et al., 2007).

Clear criteria are also the foundation of transparency throughout the EA process, and are an important way of establishing process legitimacy and credibility (Farrel and Jager, 2006). The EA process should be transparent and traceable, allowing interested observers to readily see into the assessment process and directly evaluate the data, methods of analysis, and decision-making criteria used throughout the process (Farrel and Jager, 2006; IAIA, 1999; Van Hinte et al., 2007, Wozniak, 2004). Transparency can greatly facilitate the decision-making process when it enables direct and open access to assessment documentation and supporting resources, as this fosters effective public and technical consultation, which leads to active mobilization of public knowledge and specialized technical expertise (Gibson et al., 2005; Wozniak, 2004).

**Box 2.2: Indicators for Evaluating Decision-Making Criteria**

*Is the EA process guided by a consistent set of structured decision criteria.*

- Are the decision-making criteria clear and comprehensive?
- Do decision-making criteria guide objective judgment, and to they minimize discretion?
- Do decision-making criteria guide consistent and effective scoping practices?
- Do decision-making criteria reflect principles of sound decision-making, such as efficiency, accountability, transparency, and consistency?
- Is the review and decision-making process transparent and traceable?
- Does the review and decision-making process reflect principles of sustainability and application of sustainability-based objectives and criteria?
- Are decision-makers required to provide a rationale for their key findings and recommendations?

**Source:** Joseph, 2013; Gibson et al., 2005; Lawrence, 2003; Sinclair and Dolle, 2010; Van Hinte et al., 2007

***Sound and Clearly Defined Methods of Environmental Assessment***

EA should only utilize sound methods of project review and employ practices and techniques that are appropriate to address the problems being investigated (IAIA, 1999; Joseph, 2013). Joseph (2013) summarizes sound EA methods as being: flexible and adaptable; suited to the review context; scientifically robust; minimally reliant upon subjective inputs; inexpensive; easy to understand and put to use; and participative and accepted by stakeholders (p.145). Sound EA methods ensure that the project review process is comprehensive, legitimate, and effective (Joseph, 2013).

**Box 2.3: Indicators for Evaluating if the EA Process Uses Sound EA Methods**

*Does the EA process utilize sound EA methods of project review and employ practices and techniques that are appropriate to address the problems being investigated?*

- Are the EA methods able to perform basic functions of scoping, identifying, and measuring impacts, and interpreting and communicating impact significance?
- Are the EA methods that are used by the proponent clearly specified?
- Are there guidelines provided for applying the methods in a consistent and methodologically sound manner?

**Source:** Joseph, 2013 p. 145

***Adequate and Objective Information***

EA decisions should be based on adequate and objective information, which considers the best available scientific, technical, traditional, and local knowledge that is gathered by reliable and objective parties (IAIA, 1999; Lawrence, 2003; Van Hinte et al., 2007; Wozniak, 2004). Adequate and objective information should be collected using

methodologies that enable thorough consideration of relevant biological, social, cultural, and economic issues, and give due attention to ecological and socio-ecological system complexity (Gibson et al., 2005; Sadar, 1996; Van Hinte et al., 2007; Wozniak, 2004). Such information is necessary if the EA process is to cover all the significant direct, indirect, and cumulative project effects, and for decision-makers to conduct a well-informed assessment of proposed undertakings (Wood, 1995; Berger, 1998).

**Box 2.4: Criteria for Evaluating If Adequate and Objective Information Is Applied**

*Does the EA process rely on adequate and objective information?*

- Do reliable and objective parties gather the information?
- Does the information consider the best available scientific knowledge?
- Does the information consider the best available traditional knowledge?

**Source:** IAIA, 1999; Lawrence, 2003; Van Hinte et al., 2007; Wozniak, 2004

### **Alternative Assessment**

The EA process should be aimed at identifying best options rather than merely acceptable proposals, by requiring a critical evaluation of the alternative means of undertaking the proposal (Gibson, 1993; IAIA, 1999, Sinclair and Doelle, 2010; Van Hinte et al., 2007). Alternative assessments should begin before there is a preferred option, so that essential environmental and socio-economic considerations are incorporated into the early stages of the proposal, and so proponents can consider issues and options that they had previously left unexamined (Gibson et al., 2005; Wozniak, 2004). Alternatives assessment should be generated through transparent, comprehensive, systematic, and explicit procedures (Lawrence, 2003).

**Box 2.5: Indicators for Evaluating the Alternatives Assessment**

*Does the EA process require the proponent and decision-makers to conduct a comprehensive examination of alternative means of undertaking the proposed undertaking*

- Is there a comparative evaluation of the alternative means of undertaking the proposal?
- Is the alternatives assessment comprehensive, transparent, and systematic?
- Is the alternatives assessment incorporated into the early stages of the proposal?

**Source:** Gibson, 1993; IAIA, 1999, Sinclair and Doelle, 2010; Van Hinte et al., 2007

### **Process Efficiency**

The EA process should be efficient in that it results in sound decisions that are reached within the limits of available time and cost (Gibson, 1993; IAIA, 1999; Van Hinte et al., 2007; Wood, 1995). EA is considered to be efficient if decisions are timely relative

to economic and other facts that determine proposal decisions, and if the costs of conducting assessments can be determined and are reasonable (Wood, 1995). In particular, proper project scoping can ensure that the assessment process achieves accepted objectives, such as identification of significant impacts, within the limits of available time and resources (IAIA, 1999; Wozniak, 2004). An efficient assessment process can be achieved through work planning, budgeting, delineating roles and responsibilities, establishing timelines and milestones, and progress monitoring and reporting (Joseph, 2013). Achieving an efficient EA is important because stakeholders can become frustrated if the process becomes characterized by unnecessary overlap and duplication, expenditure, divergent assessment regimes, unnecessarily lengthy project reviews, and overall poor quality process outputs (Gibson et al., 2005; Kwasniak et al., 2008).

**Box 2.6: Indicators for Evaluating the Efficiency of the EA Process**

*The EA process should be efficient in that it results in decisions that are reached within a reasonable time and cost.*

- Does the assessment process achieve accepted objectives, within the limits of available time and resources?
- Are guidelines provided to provide some degree of certainty in the length of the EA process?
- Can the costs of conducting assessments be determined and are they reasonable?
- Is potential overlap and duplication in the EA process minimized?

Source: IAIA, 1999; Wood, 1995; Wozniak, 2004

### ***Consideration of Cumulative Effects***

The EA process should consider cumulative impacts (Joseph, 2013; Lawrence, 2003; Van Hinte et al., 2007). Cumulative impacts can be described as the additive or interactive effects, which result over time when undertakings build on or add to the impacts of previous impacts (Hanna, 2009). According to Ross (1998) cumulative impact assessment should: identify important impacts (scoping); identify other existing and proposed human activities that contribute to the same impacts; predict cumulative effects and determine their significance; and suggest appropriate means of managing the cumulative impacts (p.268). Ultimately, cumulative impact assessment should go beyond the evaluation of site-specific direct and indirect project impacts to address broader regional environmental concerns (Noble, 2009a). Cumulative impact assessment is an important tool for project planning and adaptive management, and an awareness of additional impacts can improve the professional practice of EA.

**Box 2.7: Indicators for Evaluating Cumulative Impact Assessment**

*Does the EA process go beyond the evaluation of site-specific direct and indirect project impacts to address broader regional environmental concerns and impacts?*

- Does the process require a cumulative effects assessment?
- Does the process apply appropriate means to analyze and manage the cumulative impacts?

Source: IAIA, 1999; Wood, 1995; Wozniak, 2004

**Fair and Equitable Outcomes**

The EA process and its outcomes should contain legal mechanisms that ensure that project benefits are equitably distributed, and that people directly affected by projects have equal access to compensation (Van Hinte et al., 2007; Wood, 1995). Intragenerational and intergenerational equality is fundamental to the concept of sustainability (Gibson et al., 2005; Lawrence; 2003). Intragenerational equality, also called livelihood equality, throughout the EA, should reduce gaps in political, material, health, employment, and knowledge sufficiency and opportunity between the rich and the poor (Gibson et al., 2005). Intergenerational equity throughout the EA should ensure that the process favours actions and options that are most likely to preserve or improve the ability of future generations to live sustainably (Gibson et al., 2005).

**Box 2.8: Indicators for Evaluating if the EA process Reaches Fair and Equitable Outcomes**

*Does the EA process and its outcomes contain legal mechanisms that ensure that project benefits are equitably distributed, and that people directly affected by projects have equal access to compensation.*

- Is the EA process legally required to provide compensation to those adversely affected by a project?
- Is the EA process legally required to ensure that project benefits are equitably distributed?
- Does the process require assessment of the distribution of costs and benefits by stakeholder groups?
- Are proponents and decision makers required to consider *intragenerational* and *intergenerational* equity when undertaking and assessment?

Source: Gibson et al., 2005; Lawrence; 2003; Van Hinte et al., 2007; Wood, 1995

**Adequate Resources**

The decision-making bodies throughout EA process should be adequately resourced to ensure an effective and efficient decision-making process (Joseph, 2013; Van Hinte et al., 2007). Adequate resourcing is fundamental to an appropriate EA process because it is a prerequisite for the implementation of a majority of the EA Best Practice principles. Appropriate resources include sufficient funding, experienced and

skilled staff, adequate time, and present leadership (Joseph, 2013; Van Hinte et al., 2007). However, the process should not be resourced to the point where there is a lack of incentive to be efficient (Joseph, 2013).

**Box 2.9: Indicators for Evaluating if the EA process is Adequately Resourced**

*Is the EA process adequately resourced?*

- Does the process allow for sufficient time to conduct fair and comprehensive reviews?
- Does the process contain sufficient funding to allow the government to conduct a review that is in line with best practices principles?
- Does the process contain present leadership that can propel the process?

**Source:** Joseph, 2013; Van Hinte et al., 2007

## ***Participative***

Public participation in EA is simply the involvement of individuals and groups that are positively or negatively affected by proposed reviewable undertakings (Andre et al., 2006). The EA process should require public engagement and contain provisions related to public notice, comment, access to documentation, and participant funding (Joseph, 2013; Van Hinte et al., 2007; Wozniak, 2004). Public engagement can be beneficial at all stages of the EA process, and by effectively involving the public in the decision-making process it is possible to:

- define the problem more effectively and identify socially acceptable solutions;
- bring forward different viewpoints and information, including traditional knowledge;
- pinpoint potential areas of conflict and minimize costly delays;
- ensure more balanced decision-making and increase the comfort level of decision-makers;
- promote social learning, and foster trust and mutual respect;;
- facilitate implementation; and
- reduce the possibility of legal challenge (Noble, 2009a; Sadar, 1996).

**Box 2.10: Indicators for Evaluating if the EA process is Participative**

*Does the EA process require public meaningful engagement?*

- Does the public engagement process provide stakeholders with the genuine capacity to influence outcomes of the EA process?
- Is the public engagement process initiated early and sustained through all relevant steps of the EA process?
- Is the public engagement process well planned and focused on negotiable issue?
- Is the public engagement process supportive to participants, by providing adequate information and financial

support to facilitate fair participation?

- Is the public engagement process open and transparent, and do all those interested in participating have access to all relevant information that is available in an understandable format?
- Is the public engagement process adapted to the context of the places and communities affected by the proposed development?
- Does the public engagement process promote consensus building and collaborative-shared decision-making?
- Does the process ensure that the views of stakeholders are taken into account in decision-making?

**Source:** Andre et al., 2006; Joseph, 2013; Gibson et al., 2005; IAIA, 1999; Lawrence, 2003; Sadler, 1996; Sinclair and Doelle, 2010; Van Hinte et al., 2007; Wood, 1995; Wozniak, 2004

### ***Obligations to First Nations Met***

Jurisdictions that are conducting the EA must ensure that their legislation, policies, guidelines, and fiduciary obligations reflect and address the constantly evolving law of the land with respect to Aboriginal and treaty rights and title (Joseph, 2013; Plate et al., 2009; Van Hinte et al., 2007). Potential issues related to aboriginal interests, rights and title, and the fiduciary obligations of governments to First Nations should be considered at the onset of an EA (Plate et al., 2009). In addition, consultation with First Nations is the responsibility of Canada and BC and should not be delegated to project proponents alone; however, the proponent should be well informed about the law of the land regarding Aboriginal rights and title before approaching a First Nation about a potential project on their territory (Plate et al., 2009).

#### **Box 2.11: Indicators for Evaluating if Obligations to First Nations are Met**

*Does the EA process reflect and address the law of the land with respect to Aboriginal and Treaty rights and title?*

- Are project proponents well informed about the law of the land regarding Aboriginal rights and title?
- Is there an explicit First Nations consultation policy that meets the legal obligations of the government to consult and accommodate First Nations?
- Is consultation with First Nations primarily the responsibility of Canada and BC throughout the EA?

**Source:** Joseph, 2013; Plate et al., 2009; Van Hinte et al., 2007

### ***Monitored and Enforced Compliance***

The EA process should clearly outline the mechanisms by which the assessment commitments and approval conditions are monitored and enforced, including clear notification and penalties for infractions and non-compliance (Gibson et al., 2005; Sadler, 1996; Van Hinte et al., 2007; Wood, 1995). Clear and accessible guidance on the procedures and techniques associated with impact monitoring and compliance

enforcement, throughout the EA process, should support proponents, decision-makers, environmental authorities, and the public (Sadar, 1996;Wood, 1995). Specific technical and organizational mechanisms for impact monitoring and compliance should include: monitoring that is performed by an impartial and independent body; development of comprehensive approval statements; explicitly assigned enforcement responsibilities and resources; substantial legislated penalties and remediation requirements for non-compliance; and more recently, critical vigilance from informed civil society organizations and motivated local stakeholders (Gibson et al., 2005; Joseph, 2013). These measures can collectively ensure that desired economic, environmental, and social goals are achieved during all project phases (Van Hinte et al., 2007).

**Box 2.12: Indicators for Evaluating How the EA process is Monitored and Enforced**

*Does the EA process feature clearly outlined mechanisms by which the assessment commitments and approval conditions are monitored and enforced?*

- Does the process include comprehensive approval statements regarding procedures and techniques associated with impact monitoring and compliance enforcement?
- Is the process monitored by an impartial and independent body?
- Does the process include explicitly assigned enforcement responsibilities and resources?
- Does the process include substantial legislated penalties and remediation requirements for non-compliance?
- Do informed civil society organizations and motivated local stakeholders have the ability to monitor compliance, and is effectiveness publicly reported?

**Source:** Gibson et al., 2005; Joseph, 2013; Sadar, 1996;Wood, 1995

### ***Features an Appeal Process***

The EA process should include an accessible appeal mechanism to an independent review body for participants dissatisfied with the process or its outcomes (Lawrence, 2003; Van Hinte et al. 2007). In the case that any major decision violates procedural requirements prescribed by guidelines, goals, or objectives, stakeholders should be afforded the right to challenge such decisions, during the application, screening, scoping, or final decision-making stage (Joseph, 2013; Van Hinte et al., 2007; Wood, 1995; Wozniak, 2004). The appeal process should feature some test to ensure that appeals are grounded on solid reason or argument, and should strive to prevent unnecessary delays to the decision-making process by being efficient and narrowly defined (Joseph, 2013, Van Hinte et al., 2007; Wozniak, 2004). Appeals challenging procedural steps should go to the courts, while appeals on matters of substance should be reviewed by independent appeal boards with expertise on substantive matters

(Joseph, 2013). Finally, appeal bodies should have sufficient expertise, resources, and authority to consider and evaluate new evidence and, to overturn a final decision and return it back to the original decision-maker (Joseph, 2013; Van Hinte et al., 2007).

**Box 2.13: Indicators for Evaluating the Appeal Process**

*Does the EA process feature an accessible appeal mechanism?*

- Is the appeal process efficient and narrowly defined, in order to prevent unnecessary delays?
- Are appeals allowed on matters of substance and procedure?
- Are appeals heard by independent review bodies, instead of the original decision-makers?
- Are appeals dealing with procedural steps allocated to the courts, while appeals on matters of substance allocated to independent appeal boards with expertise on substantive matters?

**Source:** Joseph, 2013; Van Hinte et al., 2007; Wood, 1995; Wozniak, 2004

### ***Mechanism for Adaptive Management and Continuous Learning***

The EA process should feature an adaptive management mechanism for monitoring key environmental and socio-economic indicators throughout the lifespan of the project, in order to acknowledge, anticipate, and respond to changing project conditions and circumstances (Lawrence, 2003; Sadar, 1996; Wozniak, 2004). In order to properly address project problems, opportunities, risks, and uncertainties, adaptive management design should include preference for diversity, safe-fail technologies (that can fail without causing serious damage), reversibility and substitutability, and the preparation of fall-back options and plans for careful monitoring (Gibson et al., 2005). An adaptive approach should also rely on and promote learning throughout the process, as continuous observation and adjustment allows personnel to deal with unavoidable uncertainties more successfully (Gibson et al., 2005). Stakeholder engagement and informed citizenry is crucial and should inform the design, implementation, and adjustment of monitoring programs (Gibson et al., 2005, Wood, 1995; Wozniak, 2004).

Precautionary approaches are preferable for adaptive management, and should influence project implementation, monitoring, follow-up, and evaluation (Gibson et al., 2005; Lawrence, 2003). Precautionary approaches can allow for flexible adaption to varying contexts and proposals and action-specific circumstances, and can reduce the occurrence and severity of serious, irreversible, and catastrophic environmental harm (Gullett, 1997; Lawrence, 2003). Ultimately, the most desirable EA process is one that is

responsive to monitoring, adjustment, and public interest, and functions in a predictable manner in a world of uncertainty and complexity.

**Box 2.14: Indicators for Evaluating Adaptive Management and Continuous Learning**

*Does the EA process feature provisions for adaptive management?*

- Do these provisions include preference for diversity?
- Do these provisions include preference for safe-fail technologies?
- Do these provisions include preference for reversibility and substitutability?
- Do these provisions include preference for the preparation of fallback options and plans?
- Do adaptive management provisions include a role for stakeholder and informed citizens to inform the design, implementation, and adjustment of monitoring programs?

**Source:** Gullett, 1997; Joseph, 2013; Lawrence, 2003; Sadar, 1996; Wozniak, 2004

### ***Impartial and Democratically Accountable Administration***

Major decisions throughout the EA process should be directed by impartial and expert authorities, which are accountable through the democratic process (i.e., elected officials) (Joseph, 2013; Van Hinte et al., 2007). Designing a decision making structure that is both expert based and democratically accountable is challenging. One approach is to have politicians set the broad parameters through legislation and policy documents and rely on government appointed expert panels to make the final decisions. Another approach is to have expert panel decisions provided as recommendations to politicians for ratification. However, there is no consensus on which models work best (Joseph, 2013). The administration process should be subject to independent auditing with public reporting (Gibson et al., 2005).

**Box 2.15: Indicators for Evaluating if Administration is Impartial and Democratically Accountable**

*Are major decisions throughout the EA process administered by impartial and expert authorities?*

- Are expert authorities accountable through the democratic process to those affected by the decision?
- Are expert authorities subject to independent auditing with public reporting?

**Source:** Joseph, 2013; Gibson et al., 2005; Van Hinte et al., 2007

### ***A Strong Legislative Foundation***

EA should be grounded on a strong legislative foundation, which establishes the EA process as a mandatory and enforceable practice (Joseph, 2013; Van Hinte et al., 2007; Wozniak, 2004). A legally mandated, obligatory, and well specified EA process provides decision makers with the authority to properly carry out their roles and responsibilities, and provides clarity, certainty, fairness, and consistency to the overall

EA process (Joseph, 2013; Gibson et al., 2005; Sinclair and Doelle, 2010; Van Hinte et al., 2007; Wozniak, 2004). Additionally, the legal text should describe the EA process using language that is mandatory and not discretionary, and include the words “must” and “shall”, not “may” (Boyd, 2003; Joseph, 2013).

**Box 2.16: Indicators for Evaluating the Legislative Foundation of the EA process**

*Is the structure of the review and approval formally structured through legislation and regulations?*

- Does the EA legislation and its regulations:
  - Have a clearly stated purpose, and does it promote sustainability?
  - Include monitoring and enforcement provisions.
  - Enforce meaningful engagement of the public and First Nations?
  - Use mandatory and non-discretionary language?
  - Specify the roles, responsibilities, and authority of those involved?

**Source:** Boyd, 2003; Joseph, 2013; Gibson, 1993; Gibson et al., 2005; Lawrence, 2003; Sadler, 1996; Sinclair and Doelle, 2010; Van Hinte et al., 2007; Wood, 1995; Wozniak, 2004

**Table 2-2: EA Best Practices Evaluation Criteria**

Best Practices Principle	Discussion
<b><i>Clearly Defined Roles and Responsibilities</i></b>	<ul style="list-style-type: none"> <li>• The roles and responsibilities of all those involved in the EA should be fully and explicitly described.</li> </ul>
<b><i>Clearly Defined Decision-Making Criteria</i></b>	<ul style="list-style-type: none"> <li>• The EA’s decision-making process should be guided by a consistent set of decision criteria, which is clear, comprehensive, well integrated, and accordingly elaborated on for the case at hand.</li> </ul>
<b><i>Sound and Clearly Defined Methods of EA</i></b>	<ul style="list-style-type: none"> <li>• EA should only utilize sound methods of project review and employ practices and techniques that are appropriate to address the problems being investigated.</li> </ul>
<b><i>Adequate and Objective Information</i></b>	<ul style="list-style-type: none"> <li>• EA decisions should be based on adequate and objective information, which considers the best available scientific, technical, traditional, and local knowledge that is gathered by reliable and objective parties.</li> </ul>
<b><i>Alternative Assessment</i></b>	<ul style="list-style-type: none"> <li>• The EA process should require the proponent and decision-makers to conduct a comprehensive examination of alternative means to undertaking the proposed undertaking.</li> </ul>
<b><i>Process Efficiency</i></b>	<ul style="list-style-type: none"> <li>• The EA process should be efficient in that it results in adequate decisions that are reached within a reasonable time and cost.</li> </ul>
<b><i>Consideration of Cumulative Impacts</i></b>	<ul style="list-style-type: none"> <li>• The EA process should consider additive or interactive effects, which result from the recurrence of actions over time when undertakings build on or add to the impacts of previous impacts.</li> </ul>
<b><i>Fair and Equitable Outcomes</i></b>	<ul style="list-style-type: none"> <li>• The EA process and its outcomes should contain legal mechanisms that ensure that project benefits are equitably distributed, and that people directly affected by projects have equal access to compensation.</li> </ul>
<b><i>Adequate Resources</i></b>	<ul style="list-style-type: none"> <li>• The decision-making bodies throughout the EA process should be adequately</li> </ul>

	resourced to ensure an effective and efficient decision-making process.
<b><i>Participative</i></b>	<ul style="list-style-type: none"> <li>The EA process should require public engagement and contain provisions related to public notice, comment, access to documentation, and participant funding.</li> </ul>
<b><i>Obligations to First Nations Met</i></b>	<ul style="list-style-type: none"> <li>Jurisdictions that are conducting the EA must ensure that their legislation, policies, guidelines, and fiduciary obligations reflect and address the constantly evolving law of the land with respect to Aboriginal and treaty rights and title.</li> </ul>
<b><i>Monitored and Enforced Compliance</i></b>	<ul style="list-style-type: none"> <li>The EA process should include a follow-up program that clearly outlines the mechanisms by which the assessment commitments and approval conditions are monitored and enforced, including a clear notification of penalties for agreement infractions and non-compliance.</li> </ul>
<b><i>Features and Appeal Process</i></b>	<ul style="list-style-type: none"> <li>The EA process should include an accessible appeal mechanism to an independent review body for participants dissatisfied with the process or its outcomes.</li> </ul>
<b><i>Mechanism for Adaptive Management and Continuous Learning</i></b>	<ul style="list-style-type: none"> <li>The EA process should feature an adaptive management mechanism for monitoring key environmental and socio-economic indicators throughout the lifespan of the project, in order to acknowledge, anticipate, and respond to changing project conditions and circumstances.</li> </ul>
<b><i>Impartial and Democratically Accountable Administration</i></b>	<ul style="list-style-type: none"> <li>Major decisions throughout the EA process should be directed by impartial and expert authorities, which are accountable through the democratic process to those affected by the decisions.</li> </ul>
<b><i>A Strong Legislative Foundation</i></b>	<ul style="list-style-type: none"> <li>The structure of the EA regimes should be formally structured through legislation and regulations.</li> </ul>

**Sources:** Based on the Best Practice principles developed by: CEN (1988); Gibson et al. (2005); IAIA (1999); Joseph (2013); Lawrence (2003); Sadar (1996); Plate et al. (2009); Van Hinte et al. (2007); Wood (1995); and Wozniak (2004)

## **Chapter 3.**

# **Environmental Assessment in Canada and British Columbia**

### **3.1. Chapter Overview**

In order to effectively evaluate the divergent findings of the two Project EAs, it is important to understand the regulatory and approval frameworks that were applied to the undertaking. This chapter provides a comprehensive description of Canada and BC's respective EA frameworks, as both levels of government were directly involved in assessing the Project. First Nations case law is also described, as First Nations have a certain degree of jurisdiction over the Project, which stems from Aboriginal rights and title claims.

#### **3.1.1. Multi-Jurisdictional EA**

Under the Canadian *Constitution Act* (1867) both the provincial and federal governments may be responsible for administering separate or joint EA legislation for major projects that impact environmental, economic, and social values (Kwasniak, 2008). This division of powers between the federal government and the provinces does not allocate total control over environmental issues to either level of government and assures that constitutional authority over environmental protection is shared by both jurisdictions (McKenzie, 2002) (appendix table B.1).

Identifying the boundaries between federal and provincial jurisdiction over environmental issues is a difficult task. Provincial heads of power are frequently subject to limitations that arise from either exclusive or concurrent federal jurisdiction over subject matters that overlap with provincial legislative power (Doelle, 2008). Provincial jurisdiction is also limited to the territory of the province, which is an ongoing area of

uncertainty in some coastal areas (Doelle, 2008). With respect to federal side jurisdiction, the list of legislative power is more focused and much longer; however, federal power with respect to environmental issues is still evolving, making it difficult to identify respective constitutional boundaries (Doelle, 2008). The result is a complex framework of jurisdictional power over environmental issues, where in some cases the federal powers restrict provincial powers, while in other areas the two jurisdictions operate simultaneously.

The EA for the Project provides a clear example of environmental decision-making that has multi-jurisdictional dimensions. Given the nature of this multi-jurisdictional EA framework, the Project was subject to two EA processes; one administered by the federal government and one administered by the province.. Therefore, this chapter highlights Canada's federal level EA, which is established by the *Canadian Environmental Assessment Act (CEA Act)*, and BC's provincial level EA, which is established by the *Environmental Assessment Act (BC EAA)*.

Finally, as the policies and guidelines developed for the *CEA Act* and the *BC EAA* also include procedures for consulting and involving First Nations, the final section of this chapter will provide an overview of First Nations jurisdictional standing in EA. Specifically, First Nations in Canada are acknowledged to have particular rights affirmed by Section 35 of the *Canadian Constitution Act (1867)*, through specific legal treaties, and through specific case law that has upheld the requirement that government is obliged to both consult with and accommodate First Nations (Booth & Skelton, 2010). This confers specific considerations with regard to the impacts of developments that are subject to EAs (Booth & Skelton, 2010).

### **3.2. Origins and Evolution of the Federal EA Framework**

EA entered the Canadian federal agenda shortly after the emergence of the US National Environmental Policy Act of 1969 (NEPA)(Gibson and Hanna, 2009). Canada did not follow the American EA model because the US experience showed that the broadly scoped legislated process of NEPA was becoming disruptive to business-as-usual in many agencies (Gibson and Hanna, 2009). As a result, the first step in

Canadian EA was the adoption of Environmental Assessment and Review Process (EARP) guidelines, which outlined a recommended EA process but lacked the force of law (Gibson and Hanna, 2009). EARP was approved in December of 1973; however, it never became enshrined in legislation, making EA requirements essentially voluntary (Gibson and Hanna, 2009). The Federal Environmental Assessment Review Office (FEARO) was charged with administering EARP (Hazell, 1999). The work of EARP and FEARO was not significant among the power brokers of Ottawa, and mainly occurred in places where the federal government enjoyed exclusive authority (Hazell, 1999). Canada's non-legislated approach, which was used for the first 20 years of EA, failed to achieve meaningful and consistent environmental protection (Gibson and Hanna, 2009).

In 1984, the federal government formally registered EARP as a *Guidelines Order* under the Government Organization Act of 1979; however, the perceived voluntary nature of its guidelines was not able to secure greater commitment to EA by federal authorities (Herring, 2009). In 1989, an unexpected decision regarding the application of the *Guidelines Order* to Saskatchewan's Rafferty-Alameda water management project changed the face of federal EA in Canada. The Federal Court of Canada ruled that the *Guidelines Order* was mandatory for this development (Gibson and Hanna, 2009). The Federal Court of Appeal upheld this ruling in 1990, and the Supreme Court of Canada made a single ruling in the Oldman River Dam case in 1992 (Gibson and Hanna, 2009). These court rulings initiated more serious attention to federal EA and significantly reduced the discretionary nature of the process (Gibson and Hanna, 2009). Shortly after this, the federal government developed a new legislated EA process and in 1990, it introduced a bill to establish the *Canadian Environmental Assessment Act* S.C. 1992, c. 37. The *CEA Act* received legislative approval in 1992, and after multiple rounds of consultations in 1995, it was proclaimed in force along with a key set of regulations governing its application (Herring, 2009). The *CEA Act* (1992) underwent a five-year ministerial review, commencing in 1999 and resulting in a report in 2001, and amendments to the Act in 2003.

In the spring of 2012, Canada's federal government included provisions in its omnibus budget implementation bill (Bill-C38) to replace Canada's longstanding *CEA Act* (1992) with a new EA process set out in the *Canadian Environmental Assessment*

*Act*, 2012, SC 2012, c 19, s 52 (*CEA Act*, 2012 or the *new Act*). These changes were part of the federal government's *Economic Action Plan* of 2012 and specifically relate to that plan's *Responsible Resource Development* strategy (NRC, 2012). Major notable changes included:

- Moving toward a “one project, one review” system for reviews of major projects, which recognizes provincial processes as substitutes or equivalents to federal ones as long as they meet the requirements under the *CEA Act*, 2012;
- Setting timelines for hearings and assessments, namely, 24 months for panel reviews, 18 months for National Energy Board hearings and 12 months for standard EA;
- Setting legally binding timelines for key regulatory permitting processes, including the *Fisheries Act*, the *Species at Risk Act*, the *Navigable Waters Protection Act*, the *Canadian Environmental Protection Act* and the *Nuclear Safety and Control Act*;
- Consolidating the number of organizations responsible for reviews from more than 40 to three: The Canadian Environmental Assessment Agency, the National Energy Board and the Canadian Nuclear Safety Commission; and
- Focusing federal assessment efforts on major projects that can have significant environmental effects (NRC, 2012).

### **3.3. Origins and Evolution of the Provincial EA Framework**

BC established its initial EA procedures under policy guidelines rather than specific legislation (Rutherford, 2009), and in the decade preceding its first *Environmental Assessment Act (BC EAA)*, the province carried out assessments through separate *ad hoc* processes (Haddock, 2010). Different types of projects, including metal-mine development, coal development, and energy projects, were subject to different assessment frameworks (appendix table B.2).

In 1994, the BC NDP government replaced all of these assessment processes by passing the first *Environmental Assessment Act 1994*, S.B.C.1994, c.35 (*BC EAA*, 1994), and establishing the Environmental Assessment Office (BC EAO), reporting to the Ministry of Environment, to oversee its administration (Haddock, 2011; Rutherford, 2009). The legislative purpose of the original *BC EAA* (1994) was to ‘promote sustainability by protecting the environment and fostering a sound economy and social

well-being' and 'to prevent or mitigate adverse effects of reviewable projects' through 'timely and integrated assessment of the environmental, economic, social, cultural, heritage and health effects of reviewable projects' (*BC EAA*, s.2, 1994)).

In 2002, the newly elected BC Liberal Party amended the *BC EAA* (1994) and replaced it with a new *Environmental Assessment Act* 2002, SBC 2003, c 53 (*BC EAA*, 2002). The Liberal government stated that EA legislation should 'provide greater procedural flexibility' and focus on project specific 'issues and circumstances' while 'retaining many fundamental elements of the previous act' (BC EAO, 2003). There were several controversial changes to the original *BC EAA* (1994). Notably, the new *BC EAA* (2002) eliminated the provisions requiring engagement of First Nations and local governments on project committees and the provisions allowing for inclusion of other stakeholders in public advisory committees (Haddock, 2010). The new *BC EAA* (2002) also omitted the purposes section, which guided courts and decision-makers in determining the *raison d'être* of EAs. The new legislation did not refer to sustainability, cumulative effects assessment, or other broad goals often associated with EA (Haddock, 2012; Rutherford, 2009).

### **3.4. A Review of Canada's and BC's EA Framework and Legislation**

This section will jointly review Canada and BC's EA frameworks and legislation, which directed the two assessments of the Project. The review will describe each EA framework's: purpose; process; triggers; responsible persons for conducting and overseeing the EA; available EA tracks; time limits; decision making provisions; compliance and enforcement rules; federal and provincial cooperation provisions; and, public participation requirements. The review is set out side by side in Table 3.1. Given the recent amendments to the federal process as a result of the new *CEA Act* (2012), appendix table B.3 provides supplemental information on the most significant changes to federal EA legislation and the implications for EA.

**Table 3-1: Review and Comparison of the Federal and Provincial EA Process that Directed the Assessment of the Project**

Canada's Federal EA Process	BC's Provincial EA Process
<b><i>The EA Legislative Basis</i></b>	
<i>Canadian Environmental Assessment Act, SC 1992, c 37</i>	<i>Environmental Assessment Act, SBC 2002, c 43,</i>
<b><i>The Stated Purposes of the EA Legislation</i></b>	
<p>Section 4(1) of the CEA Act (1992) sets out the following purposes:</p> <ul style="list-style-type: none"> <li>(a) to ensure that projects are considered in a careful and precautionary manner and to ensure that such projects do not cause significant adverse environmental effects;</li> <li>(b) to encourage responsible authorities to take actions that promote sustainable development               <ul style="list-style-type: none"> <li>o (b.1) to ensure that responsible authorities carry out their responsibilities in a coordinated manner with a view to eliminating unnecessary duplication;</li> <li>o (b.2) to promote cooperation and coordinated action with provincial governments;</li> <li>o (b.3) to promote communication and with Aboriginal peoples;</li> </ul> </li> <li>(c) to ensure that projects do not cause significant adverse environmental effects outside the jurisdiction; and</li> <li>(d) to ensure opportunities for timely and meaningful public participation throughout the EA process.</li> </ul> <p style="text-align: right;">(CEA Act, s.4, 1992)</p>	<p>The BC EAA (2002) does not contain a preamble or description of the legislative purpose, and does not refer to sustainability, cumulative effects assessment, or other broad goals often associated with EA (Rutherford, 2009)</p> <p>The main focus of the provincial EA process, as described in the Guide to the British Columbia Environmental Assessment Process, is to determine whether a project will have significant adverse environmental, economic, social, heritage, or health effects and, where possible, on preventing such effects or reducing them to an acceptable level (BC EAO, 2003; Rutherford, 2009).</p> <p>The guide also highlights a series of EA principles, which include: access to information; balanced decision making; comprehensiveness; consultation; coordination; flexibility; integration; neutral administration; and, timeliness (BC EAO, 2003).</p>

<b>The EA Process</b>	
<p>The primary stages for completing an EA under the <i>CEA Act</i> (1992) are:</p> <ul style="list-style-type: none"> <li>• The <b>triggering</b> of the <i>CEA Act</i> and start-up of the assessment;</li> <li>• The <b>development</b> of the EA;</li> <li>• The <b>decision</b> by the responsible authority; and,</li> <li>• <b>Post-decision activities</b>, including implementation and follow-up (Herring, 2009)</li> </ul>	<p>The primary stages for completing an EA under the BC EAA (2002) include:</p> <p><b>The EA Pre- Application Stage</b></p> <ul style="list-style-type: none"> <li>• <b>Early Project Definition:</b> <ul style="list-style-type: none"> <li>○ Determining if the EAA applies</li> <li>○ Determining the review</li> </ul> </li> <li>• <b>Definition of Project Scope, Issues, and the Assessment:</b> <ul style="list-style-type: none"> <li>○ Determining how the assessment will be conducted</li> <li>○ Developing and approving the Terms of References</li> </ul> </li> </ul> <p><b>Application Review Stage</b></p> <ul style="list-style-type: none"> <li>• <b>Application Preparation and Review</b> <ul style="list-style-type: none"> <li>○ Preparing and submitting the application for EA certificate</li> <li>○ Reviewing the application for an EA certificate</li> </ul> </li> <li>• <b>Project Decisions</b> <ul style="list-style-type: none"> <li>○ Preparing the assessment report and referring to the ministers</li> <li>○ Deciding whether to issue/not issue an EA certificate.</li> </ul> </li> </ul>

<b>EA Triggers</b>	
<p>The <i>CEA Act</i> (1992) took a “<b>trigger</b>” approach, whereby an assessment was legally monitored when:</p> <ul style="list-style-type: none"> <li>• any federal authority is the proponent of a project;</li> <li>• a federal authority makes or authorizes payments or provides a guarantee for a loan for the purposes of enabling a project to be carried out;</li> <li>• a federal authority has the administration of federal lands and sells, leases or otherwise disposes of the lands for the purposes of enabling a project to be carried out; and/or</li> <li>• a federal authority issues a permit or license for the purpose of enabling a project to be carried out. (<i>CEA Act</i>, s.5, 1992)</li> </ul> <p>The <i>CEA Act</i> (1992) may also be triggered by the <b>minister of the environment</b>.</p>	<p>The <i>BC EAA</i> (2002) takes a <b>project-threshold approach</b>, where a proposed activity can be designated as a reviewable project and subject to an assessment if:</p> <ul style="list-style-type: none"> <li>• It is included in the Reviewable Project Regulation, which designates projects on the basis of size, production or storage capacity, timing, geographical location, potential for adverse effects, type of industry, and type of proponent;</li> <li>• It is designated as reviewable by the Minister of Environment under section 6 of the BC EAA; and,</li> <li>• It is designated as reviewable by the executive director of the BC EAO under section 6 of the BC EAA. (BC EAO, 2003; Rutherford, 2009)</li> </ul>

<b>Responsible Authorities for Conducting an EA</b>	
<p>Under the previous CEA Act (1992), the primary responsibility for the EA process rests with <b>federal authorities</b> that have to make section 5 decisions on a project (see previous section).</p> <p>These federal authorities were designated as <b>responsible authorities (RA)</b>.</p> <p>Under the previous CEA Act (1992), up to 40 federal departments and agencies had authority for project reviews.</p>	<p>Under the <i>BC EAA</i> (2002) the <b>Minister of Environment</b> is responsible for the Act.</p> <p>A separate agency, the <b>BC Environmental Assessment Office (BC EAO)</b>, coordinates the EA.</p> <ul style="list-style-type: none"> <li>• The BC EAO has several roles:</li> <li>• Providing the information required for a proper EA;</li> <li>• Ensuring access to that information;</li> <li>• Providing opportunities for government agencies, First Nations, local governments, stakeholders, and the public to comment on the Project;</li> <li>• Carrying out the province's legal duty to consult and accommodate First Nations' rights and titles;</li> <li>• Ensuring that all potential environmental, economic, social, heritage, and health effects of a Project are considered; and</li> <li>• Writing an assessment report and providing recommendations to Ministers, who make the decision on issuance of an EA certificate (BC EAO, 2010).</li> </ul>

<b>The Development of the EA</b>	
<p>Under the previous <i>CEA Act</i> (1992), the responsible authority determined which of four EA tracks needs to be pursued:</p> <ol style="list-style-type: none"> <li>1. <b>Screening</b>- The most basic level of EA and applied to 99 per cent of all projects (OAG, 2009). Screenings represented a systematic approach to documenting environmental effects and determining future steps that need to be undertaken (Herring, 2009). <b>Class screenings</b> were used to streamline the process and are applied to projects where the environmental effects and mitigation measures were well documented (Herring, 2011).</li> <li>2. <b>Comprehensive Study</b>- A level of EA applied to projects that are by nature large-scale complex and more likely to have significant adverse</li> </ol>	<p>Under the <i>BC EAA</i> (2002), the executive director of the EAO must determine which of three EA options, for determining scope, methods, and procedures of the EA, is most appropriate:</p> <ol style="list-style-type: none"> <li>1. For projects where the executive director decides that an EA certificate is required because of the potential of significant adverse effects, he/she will set in motion a <b>typical BC EAA assessment process mandated by the EAO</b>;</li> <li>2. For projects where the executive director considers that there is no potential for significant adverse effects, he/she may <b>wave the requirement for an assessment under the BC EAA</b>;</li> <li>3. The executive director may <b>refer the project to the Ministry of Environment</b> for a decision about scope, procedures, and methods. The</li> </ol>

environmental effects (OAG, 2009). All such projects were described in the *Comprehensive Study List*, which could include large-scale oil and natural gas developments, nuclear power developments, electrical-generation projects, industrial plants, and major works for national parks.

3. **Mediation**- A voluntary process of negotiation in resolving EA disputes when a few interested stakeholders are willing to participate in resolving issues that appear to be resolvable (Herring, 2009). Mediation has never been used. Sessions could be mediated by government- appointed mediators, who would be responsible for helping various parties resolve their differences.
4. **Panel Review**- The minister of the environment could order a panel review when there was uncertainty of a project's environmental effects and/or public concerns warrant further investigation (Herring, 2009). The panel review was the strongest of the four assessment tracks, and was involuntary and allowed the public to formally participate in the EA process (Herring, 2009). An independent panel of informed and unbiased experts completed the panel. The panel review process was powerful because all parties and the public have the opportunity to present evidence, concerns, and recommendations (Herring, 2009). A review panel submitted its recommendations to the minister of the environment and to the RA.

minister may order an assessment by commission, hearing, panel, or other process (Rutherford, 2009 p. 306-307).

If the executive director determines that an EAO managed EA is required, the EAO develops and issues a **Section 11 Order** that outlines the scope, procedures, and methods for the assessment (BC EAO, 2010; Rutherford, 2009). The MOE may issue a similar procedural order.

As highlighted by the EAO User Guide (2009), the **Section 11** Order deals with:

- The project scope;
- The procedures and methods to be used in conducting the EA;
- The potential effects to be taken into account during the EA;
- The information required from the proponent (through a terms of reference/ application information requirements);
- Information from sources other than the proponent;
- First Nations consultation requirements;
- Public consultation requirements; and
- Time limits for activities in the EA (BC EAO, 2010; Rutherford, 2009).

**Application Information Requirements/ Terms of Reference:**

- The *application information requirements* (formerly referred to as the terms of reference) describes project information requirements, the consultation that will take place, the scope and methodology of the assessment, and information on the project's potential adverse environmental affects, including proposed mitigation measures (BC EAO, 2010). First Nations and the general public are given the opportunity to comment on the draft application information requirements.
- After the final version of the application information requirements is approved by the EAO, the proponent undertakes the required studies and consultation, and completes the activities outlined in the application information requirements.

After this, the proponent prepares and submits to the EAO an application for the **EA-certificate**.

<b>Time Limits</b>	
<p>The previous CEA Act (1992), <b>did not feature formal statutory timelines</b> for completion of and EA.</p>	<p>Under the <i>BC EAA (2002)</i>, <b>The Prescribed Time Limits Regulation</b> includes the following time limits:</p> <ul style="list-style-type: none"> <li>▪ <b>30 days</b> for the EAO executive director to decide whether to accept an application for an EA certificate for review;</li> <li>▪ <b>180 days</b> for the EAO executive director to review an EA certificate and produce the assessment report;</li> <li>▪ <b>45 days</b> for the minister(s) to make a decision about whether to issue an EA certificate;</li> <li>▪ <b>3 years</b> for the proponent to provide additional information requests by the EAO executive director at various times during the assessment process.</li> </ul> <p>The EAO Executive Director has discretion to extend these time limits, and these limits do not bind federal reviewers.</p> <p style="text-align: right;">(BC Reg 372/2002)</p>

<b>Decision Making</b>	
<p>Under the previous <i>CEA Act (1992)</i>, <b>responsible authorities had considerable discretion</b> to decide whether or not to exercise powers, duties or functions to allow a project to proceed.</p> <p>The <b>final decision</b> whether to exercise a power, or perform a duty of function under section 5 to allow the project to proceed is:</p> <ul style="list-style-type: none"> <li>• <b>For screenings</b>, made by the responsible authority after it satisfied itself that it has met EA process requirements;</li> <li>• <b>For comprehensive studies</b>, made by the responsible authority after the appropriate Minister has reviewed and approved the EA process; and</li> <li>• <b>For panel reviews</b>, made by responsible authority with the approval of the Governor General (Doelle, 2008).</li> </ul> <p>Decision-making provisions were highlighted in section 37 of the <i>CEA Act (1992)</i>, which highlighted that:</p> <ul style="list-style-type: none"> <li>• <b>Responsible authorities may exercise</b> any power or perform any duty or</li> </ul>	<p>Under the <i>BC EAA (2002)</i>, the Minister of Environment (and sometimes other provincial ministers responsible for the type of proposed Project) holds decision-making authority with respect to <b>granting, suspending, cancelling, extending, or re-instating certificates</b>.</p> <p>Specifically the minister(s) have <b>45 days</b> to:</p> <ul style="list-style-type: none"> <li>• issue an EA certificate; or</li> <li>• refuse to issue an EA certificate; or</li> <li>• require further assessment.</li> </ul>

<p>function that would permit a project to be carried out for projects that <b>are not likely</b> to cause significant environmental effects;</p> <ul style="list-style-type: none"> <li>• <b>Responsible authorities may exercise</b> any power or perform any duty or function that would permit a project to be carried out for projects that <b>are likely</b> to cause significant environmental effects <b>that can be justified</b>;</li> <li>• <b>Responsible authorities may not exercise</b> any power or perform any duty or function that would permit a project to be carried out for projects that <b>are likely</b> to cause significant environmental effects <b>that cannot be justified</b>.</li> </ul> <p>(CEA Act, s.37, 1992).</p>	
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<b>Compliance and Enforcement</b>	
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<p>The previous <i>CEA Act</i> (1992) <b>did not contain any explicit legal tools</b> to ensure <b>compliance</b> and promote <b>enforcement</b>.</p> <p>The CEAA informally encouraged consistency in the implementation and compliance with the former <i>Act</i>.</p> <p>Amendments to the original <i>CEA Act</i> (1992) in 2003 modestly improved compliance and enforcement measures, by introducing an <b>EA coordinator</b> to encourage more consistent and better-coordinated implementation of the legislation (Doelle, 2008).</p>	<p><b>Offences</b> under the <i>BC EAA</i> (2002) include:</p> <ul style="list-style-type: none"> <li>• Violation of section 8 (1) or (2);</li> <li>• Noncompliance with an EA certificate; and</li> <li>• Providing false or misleading information (<i>BC EAA</i>, s.41. 2002)</li> </ul> <p><b>Penalties</b> under the <i>BC EAA</i> (2002) include:</p> <ul style="list-style-type: none"> <li>• <i>Corporation</i>-first conviction \$100 000, subsequent conviction not more than \$200 000;</li> <li>• <i>Individual</i>-first conviction \$100 000 to imprisonment for not more than 6 months or both.</li> <li>• <i>Individual</i>-second conviction \$200 000 to imprisonment for not more than 12 months or both.</li> </ul> <p>(<i>BC EAA</i>, s.43. 2002).</p>
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<b>Federal and Provincial Cooperation</b>	
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<p>The previous <i>CEA Act</i> (1992) provided for limited cooperation with provincial authorities on joint reviews, and coordination among multiple jurisdictions was inefficient and left to be worked out informally (Doelle, 2008).</p> <p>The 2003 amendments to the legislation that provided for an EA coordinator also</p>	<p>BC is part of a <b>bilateral EA harmonization</b> agreement with the Government of Canada. Under the <b>Canada-British Columbia Agreement for Environmental Assessment Cooperation (2004)</b>, projects that require EA by both levels of government can undergo a single assessment, which is administered cooperatively. The assessment results in a single report, but each jurisdiction makes separate decisions about the approval of the project.</p>
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applied to multijurisdictional cooperation. The role of the coordinator was limited to process, where their only real power was to set timelines for the completion of various EA responsibilities. The coordinator did not have authority over the scope of the assessment, the provisions for public participation, and the final project decision (Doelle, 2008)

BC is pursuing the substitution and equivalency provisions of the new *CEA Act* (2012). The EAO openly states that one of its main goals continues to be "**One Project, One Process**" (EAO, 2012).

### Public Participation

In the original CEA Act (1992), the **importance of meaningful public participation is reflected in the purpose section**, which explicitly states that one of the Act's primary purposes is to:

- "Ensure that there be opportunities for timely and meaningful public participation throughout the environmental assessment process" (CEA Act, s.4, 1992).

Importantly, the CEA Act (1992) defined **interested party** as:

- "Any person or body having an interest in the outcome of the environmental assessment for a purpose that is neither frivolous nor vexatious" (CEA Act, s.2, 1992)

Despite requiring some form of monitored public involvement for three out of four process options established in the CEA Act (1992), the legislation did not clearly set out the role of the public and did not impose obligations on the public (Doelle, 2008)

- The *Public Consultation Regulation* under the *BC EAA* (2002) defines public involvement in EA.
- The regulation provides that a provincial EA should have at least one formal comment period; however, the EAO will typically require the proponent to provide two comment periods:
  - one on the *Terms of Reference*; and,
  - one at the time the proponent submits its EA certificate application for review (Haddock, 2010)

### **First Nations**

The **purpose** section of the *CEA Act* (1992) established the role of First Nations by promoting:

- “communication and cooperation between responsible authorities and Aboriginal peoples with respect to environmental assessment” (*CEA Act*, s.4, 1992)

The **definition of environmental effects** section considers biophysical changes to:

- “the current use of lands and resources for traditional purposes by aboriginal persons”; and,
- “any structure, site or thing that is of historical, archaeological, paleontological or architectural significance” (*CEA Act*, s.2, 1992)

**Section 16** of the *CEA Act* (1992) highlights that:

- “Community knowledge and aboriginal traditional knowledge may be considered in conducting an environmental assessment (*CEA Act*, s.16.1, 1992)

- Under the *BC EAA* (2002), First Nations have a unique role in the provincial EA process through their inclusion in the Working Group, which is an EAO chaired technical review committee comprised of federal, provincial, local and First Nations government groups.
- Specific provisions under section 11 of the *BC EAA* (2002) also provide consultation directions to proponents (Haddock, 2010).
- First Nations have the opportunity to submit a separate report to relevant provincial ministers after the completion of an EA.

**Sources:** BC EAO, 2009; BC EAO, 2012; Doelle, 2008; Rutherford, 2009;

**Cases Cites:** *BC EAA*, 1994; *BC EAA*, 2002; *CEA Act*, 1992; *CEA Act*, 2012

### **3.5. Overview of First Nations Jurisdictional Standing in EA**

The law mandates First Nations involvement in federal and provincial EA. Modern and historical duties and a series of high profile court cases have affirmed that First Nations have rights and title to certain lands and natural resources (Booth & Skelton, 2011). The Supreme Court of Canada has determined the nature of Aboriginal rights and title, the necessity of consultation and possible accommodation when rights or title might be infringed or limited, and the considerations that must be included during consultation (Pearse & Hillyer, 2004). This section will provide an overview of the key concepts of Canadian Aboriginal law and will illustrate the importance of Aboriginal law for conducting EA.

#### **3.5.1. Division of Powers**

Aboriginal law in Canada is also influenced by the constitutional division of powers to enact legislation, between the federal Parliament and the ten provincial legislatures (Isaac & Knox, 2004). This division of powers is found in Sections 91 and 92 of the *Constitution Act, 1867* (30 & 31 Vict, c 3). Section 91 (24) of the *Constitution Act, 1867*, granted legislative authority to the federal government over “Indians, and Lands reserved for the Indians,” which gave law-making authority to the federal Parliament over Aboriginal peoples and their lands (*The Constitution Act, 1867*, 30 & 31 Vict, c 3 in Hogg, 2009). Provincial legislation applies to Indians or Indian Reserve lands if it: (1) is of a general nature; (2) does not deal specifically with Indians or lands reserved for the Indians; (c) it is not conflicting with federal legislation dealing with Indians or Indian reserves (*The Constitution Act, 1867*, 30 & 31 Vict, c 3 in Isaac & Knox, 2004). Considering the theme of this paper, provinces exercise powers related to, amongst other things, provincially owned land, local works, and natural resource undertakings (Isaac & Knox, 2004).

#### **3.5.2. Aboriginal Law Prior to the *Constitution Act, 1982***

The modern process of defining and recognizing Aboriginal rights started with the decision of the Supreme Court of Canada in *Calder et al. v. Attorney-General of British*

*Columbia*, [1973] S.C.R. 313. This was the first time that Canadian law recognized the existence of Aboriginal title, despite colonial proclamations (Blanchard, 2008; Hogg, 2009). This recognition caught the attention of the Government of Canada, which began to negotiate land claim agreements with First Nations that were without treaties (Hogg, 2009). The *Calder* case was symbolic of the legal status of Aboriginal peoples in Canada prior to the *Constitution Act, 1982*, in that it exposed that Canada recognised Aboriginal rights and title, and the courts could grant remedies for breach of those rights, but that those rights had little constitutional protection (Hogg, 2009). This lack of constitutional protection would not be explicitly remedied until the early 1980s.

### **3.5.3. The *Constitution Act, 1982***

Aboriginal and treaty rights receive constitutional protection under the *Constitution Act, 1982*. The relevant provision of the enacted *Constitution* was Section 35, which stated:

1. The existing Aboriginal and treaty rights of the Aboriginal peoples of Canada are hereby recognized and affirmed.
2. In this Act, "Aboriginal peoples of Canada" includes the Indian, Inuit and Métis peoples of Canada.

The importance of Section 35 for Aboriginal peoples is clear; however, its tentative language contained a large degree of ambiguity with respect to the definitions of "Aboriginal rights," "Aboriginal title," "treaty rights," and the infringement of those rights. In subsequent subsections the paper will describe each of the concepts and relate them to landmark court rulings that clarified and demarcated the provisions of Section 35.

#### ***Aboriginal Rights***

Aboriginal rights are "customs, practices, and traditions that are integral to a First Nation" (Pearse & Hillyer, 2004). These are inherent rights associated with Aboriginal occupancy prior to European contact, and are shared equally by all members of the Aboriginal group (Bedidickson, 2009). *R. v. Sparrow*, [1990] 1 S.C.R. 1075 was the first Supreme Court of Canada decision concerning Aboriginal rights under Section 35(1) of the *Constitution Act, 1982* (Morellato, 2009). The *R. v. Sparrow* decision

provided general guidelines for interpreting the provisions of Section 35(1), and articulated a new extinguishment, entrenchment, and justification approach that would shape Aboriginal people's legal landscape for decades to come (Elliott, 2008). Specifically, the case set out the *Sparrow* test for the recognition of Aboriginal rights (Benidickson, 2009). Pearse and Hillyer (2004) note that the *Sparrow* test substantiates Aboriginal rights if:

- An activity is an element of a practice, custom or tradition of central significance, or integral, to the distinctive culture of the Aboriginal group claiming the right.
- The activity is of independent significance to the Aboriginal culture in which it exists.
- The activity has continuity with the traditions, customs and practices that existed prior to European contact (*R. v. Sparrow*, [1990] 1 S.C.R. 1075 in Pearse & Hillyer, 2004)

As noted earlier, the *Sparrow* test deals with the interpretation of Section 35. After the test identifies whether a specific activity is an Aboriginal right, it must consider whether governments pursuing a legitimate objective can justify the infringement of that right (Pearse & Hillyer, 2004).

Another leading case on Aboriginal rights under Section 35 of the *Constitution Act, 1982*, is *R. v. Van der Peet* [1996] 2 S.C.R. 507. In this case, the ruling by the Supreme Court of Canada further characterized Aboriginal rights and expanded on the test for determining if Aboriginal rights exist (Slattery, 2008). The Court in *R. v. Van der Peet* held that:

- First Nations have the right to engage in practices, customs or traditions that are integral to the distinctive historical culture of the Aboriginal group claiming the right (*R. v. Van der Peet* [1996] 2 S.C.R. 507 in Slattery, 2008 p. 24);
- To be integral to a particular culture, a practice, custom or tradition must be a central and significant part of the culture, one of the things that makes the society distinctive (*R. v. Van der Peet* [1996] 2 S.C.R. 507 in Slattery, 2008 p. 24);
- The practices, customs, and traditions, which constitute Aboriginal rights, are those which have continuity with the practices, customs and traditions that existed prior to contact with European society (*R. v. Van der Peet* [1996] 2 S.C.R. 507 in OOGRG, 2004 p. 74); and

- A practice, custom, or tradition existing prior to European contact, and resumed after an interval, may still form the basis for an Aboriginal right; therefore, continuity does not necessarily need to be uninterrupted (*R. v. Van der Peet* [1996] 2 S.C.R. 507 in OOGRG, 2004 p.74).

Additionally, guidelines for determining the scope of Aboriginal rights were also demarcated in the *R. v. Van der Peet* case, which, as highlighted by Donovan and Griffith (2003), include:

- The practice must have been integral to the culture prior to contact with European society;
- Incidental or occasional activities do not qualify, nor do aspects of an Aboriginal society that are true of everyday society; and
- The scope and content of the Aboriginal right must be determined on a case-by-case basis (Donovan and Griffith [2003] in Van Hinte, 2005 p. 105).

Finally, the *R. v. Van der Peet* decision also distinguished between specific Aboriginal rights and Aboriginal title (OOGRG, 2004).

### ***Aboriginal Title***

Aboriginal title is a *sui generis* (unique) interest in the land and is a right of a First Nation to use and occupy such lands for a variety of reasons (Pearse & Hillyer, 2004). Aboriginal title is a sub-category of Aboriginal rights, and represents a special legal interest that some Aboriginal peoples may possess in specific lands not covered by treaties (Isaac, 2008). At the time of the Project EAs, the foremost case on the nature of Aboriginal title was *Delgamuukw v. British Columbia* [1997] 3 S.C.R. 1010. In *Delgamuukw*, the Supreme Court of Canada substantially clarified several key aspects of Aboriginal title. Particularly, the Court ruled that Aboriginal title depends upon an Indigenous group exercising exclusive occupancy at the time of the assertion of sovereignty by the colonial power, which for BC was 1846 (*Delgamuukw v. British Columbia* [1997] 3 S.C.R. 1010 in Lambert, 2009 p. 37). Once Aboriginal title is established, it confers a real title to the land. The use of the land is not restricted to traditional purposes; however, the treatment cannot destroy the characteristics of the land that sustained past generations and can sustain future titleholders (Lambert, 2009; OOGRG, 2004). To summarize, in *Delgamuukw* Chief Justice Lamer clarified three relevant aspects of Aboriginal title:

1. Aboriginal title encompasses the right to exclusive use and occupation of land;
2. Aboriginal title encompasses the right to choose to what uses land can be put, subject to the ultimate limit that those uses cannot destroy the ability of the land to sustain future generations of Aboriginal peoples; and
3. The lands held pursuant to Aboriginal title have an inescapable economic component (*Delgamuukw v. British Columbia* [1997] 3 S.C.R. 1010 in Lambert, 2009 p.37).

### ***Treaty Rights***

Treaty rights are those rights that are contained in written agreements entered into between the Crown and Aboriginal peoples (Isaac, 2008). Specifically, they can identify obligations held by a First Nation and the Crown. Treaties can deal with specific rights, such as those related to fishing, hunting, and trapping, or broader provisions, such as those related to the surrender and release of Aboriginal rights and title. *R. v. Badger*, [1996] 1 S.C.R. 771 was the leading Supreme Court of Canada case that considered the scope of Aboriginal treaty rights. Notably, it was the first Court decision to apply the *Sparrow* test to treaty rights (Elliott, 2008). In *R. v. Badger* the Court found that *Sparrow* justification criteria are generally applicable to cases involving treaty infringements, and also defined the fiduciary concept of treaties as requiring fairness, reasonableness, and the keeping of promises (Elliot, 2008).

#### **3.5.4. Infringement of Aboriginal Rights**

Even with constitutional protection under Section 35 of the *Constitution Act*, 1982, Aboriginal rights and title can be infringed upon. The Supreme Court of Canada has set out tests to determine infringement of Aboriginal rights in *Sparrow*, infringement of treaty rights in *Badger*, and infringement of Aboriginal title in *Delgamuukw* (Isaac & Knox, 2004). If an infringement is found, the onus is on the government to prove justification of that infringement. To do so, the government must prove it has a compelling and substantial legislative objective (*R. v. Sparrow*, [1990] 1 S.C.R. 1075 in Olthuis, Kleer and Townshend, 2008 p. 42), and the Crown's actions are consistent with upholding the "honour of the Crown" (*Delgamuukw v. British Columbia* [1997] 3 S.C.R. 1010 in Olthuis, Kleer and Townshend, 2008 p. 42). As highlighted by Olthuis, Kleer and

Townshend (2008), the range of valid legislative objectives is fairly broadly and can include: the conservation and management of natural resources; furthering the good of whole communities and regions, and the pursuit of general economic development (42). If a valid legislative objective is found to justify infringement, governments must deal with upholding the “honour of the Crown.” The questions that address if the Crown’s actions are compatible with the Crown’s honour include: whether there has been as little infringement as possible; whether fair compensation is available in situations of expropriation; and whether the Aboriginal group in question has been consulted and where appropriate accommodated (*R. v. Sparrow*, [1990] 1 S.C.R. 1075 in Isaac and Know, 2004 p. 7 and Olthuis, Kleer and Townshend, 2008 p. 62)

### **3.5.5. Duty to Consult**

The duty to consult is a step that the Crown must take to justify infringement of Aboriginal rights, as well as a means to reconcile the relationship between the Crown and First Nations (Olthuis, Kleer and Townshend, 200). As a reconciliatory action, the Crown, which includes both provincial and federal governments, must demonstrate that Aboriginal peoples and their perspectives and concerns have been taken into account and accommodated prior to any decisions that may affect their asserted rights or potential interests. For consultation to be meaningful, it must include the collection and analysis of adequate information to determine effects of proposed undertakings on Aboriginal rights or title (OOGRG, 2004).

Several Supreme Court of Canada rulings have developed the framework of the duty to consult. These landmark cases include: *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73; *Taku River Tlingit First Nation v. British Columbia (Project Assessment Direc)*, 2004 SCC 74; and *Mikisew Cree First Nation v. Canada (Minister of Canadian Heritage)*, 2005 SCC 69. In the *Haida* and *Taku River* decisions in 2004, the Supreme Court of Canada concluded that where the federal or provincial Crown has “knowledge, real or constructive” of the potential existence of an Aboriginal right, treaty right or title, and intends to undertake actions that may adversely affect that right or title, the “honour of the Crown” requires the Crown to consult, and accommodate that interest where appropriate (Tzimas, 2005). In addition, the Courts ruled that

governments cannot delegate their constitutional duties to consult Aboriginal people, even to third parties that have specific obligations assigned to them to assist with the overall consultation process (Tzimas, 2005). Through the *Mukisew Cree* decision, the Supreme Court of Canada extended the duty to consult by making it a procedural requirement even where historic treaty rights are concerned (Pape, 2009).

### **3.5.6. Additional Court Rulings and EA**

Specific court rulings that brought First Nations engagement squarely into the scope of EA include the *Dene Tha' First Nation v. Canada (Minister of Environment)* [2007] 1 C.N.L.R. 6 ("*Dene Tha'*") and *Chicot v. Canada (Attorney General)* [2007] 4 C.N.L.R. 102 ("*Ka'a'Gee Tu*") cases. In the *Dene Tha'* case, the *BC Supreme Court* determined that affected First Nations must have the opportunity to be meaningfully involved in the design and Terms of Reference of the EA process, if the process is expected to fulfill some aspect of the Crown's duty to consult (Pape, 2009). In the *Ka'a'Gee Tu* case, the federal court determined that affected First Nations must have full and transparent involvement through all stages of the EA, if the process is expected to fulfill some aspect of the Crown's duty to consult (Pape, 2009). If these court rulings are respected, the EA process could be used to satisfy certain informational and investigative aspects of the Crown's duty to consult

## **Chapter 4.**

### **Description of the Project**

#### **4.1. Chapter Overview**

This chapter provides a description of the originally proposed Project, which as reviewed in 2009 and 2010. Parts of the chapter also compare the originally proposed Project to the New Prosperity plan, which was the proposed alternative mine plan that replaced the original rejected Project. The information in this chapter is based on: the EA reports of the Panel and the BC EAO; the environmental impact statement (EIS) documents provided by the proponent; and the presentations and technical reports provided by independently mandated consulting firms. The Project is described in terms of its: proponent; location and setting; main components; phases and timing; evaluated alternatives; study areas and anticipated effects (as outlined by the proponent); and its economic benefits.

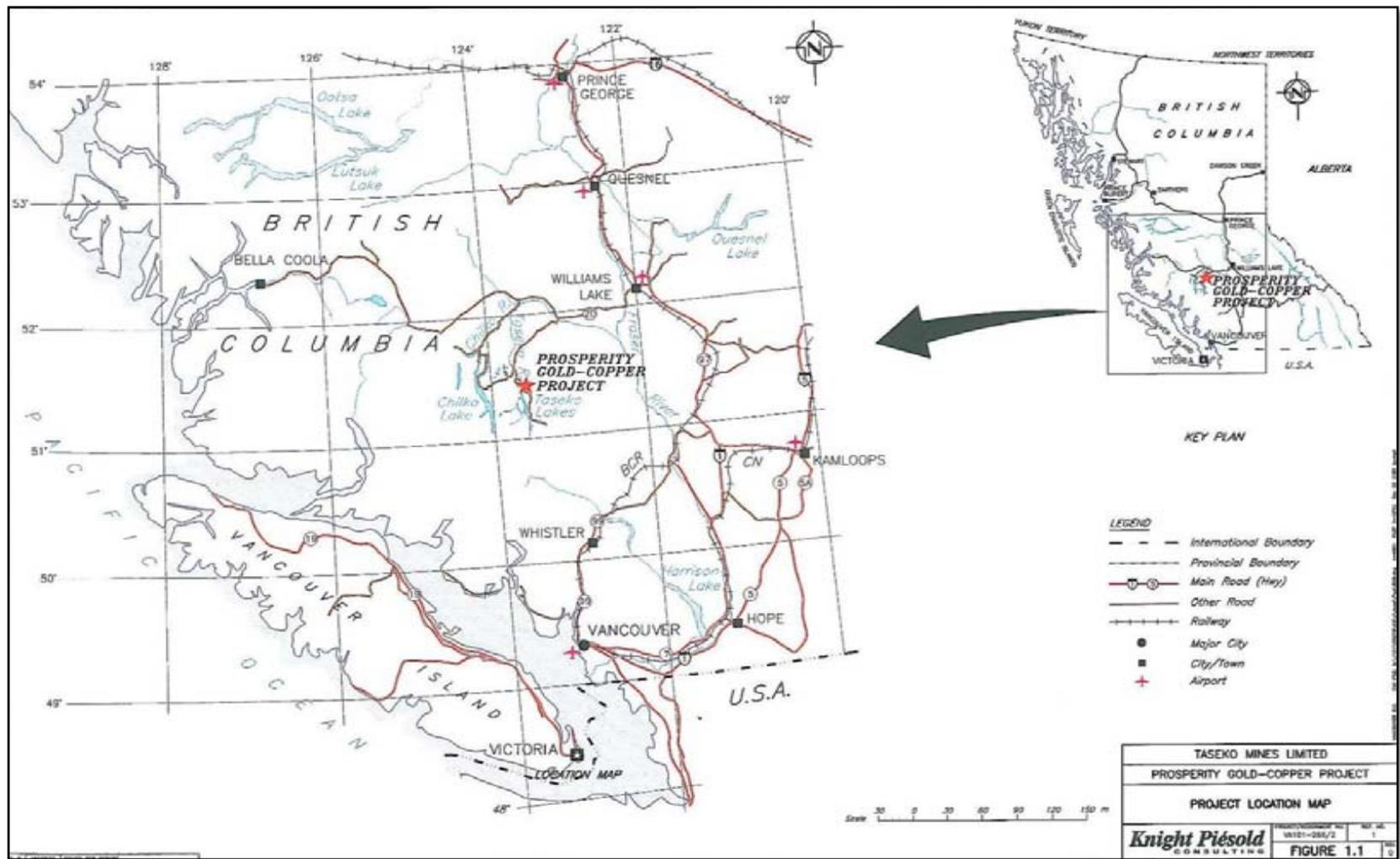
#### **4.2. Project Proponent**

The proponent for the Project is Taseko Mines Limited (TML), a BC-based mining exploration, development, and production company headquartered in Vancouver, BC (TML, 2012). The proponent has four key assets all located in British Columbia, which include: Gibraltar Mines Limited, a copper-molybdenum mine near Williams Lake; the Harmony gold prospect on Queen Charlotte Islands; the Aley niobium prospect near Williston Lake; and the Prosperity gold-copper prospect near Williams Lake (TML, 2012). The proponent wholly owns the proposed Prosperity and New Prosperity developments.

### **4.3. Project Location and Setting**

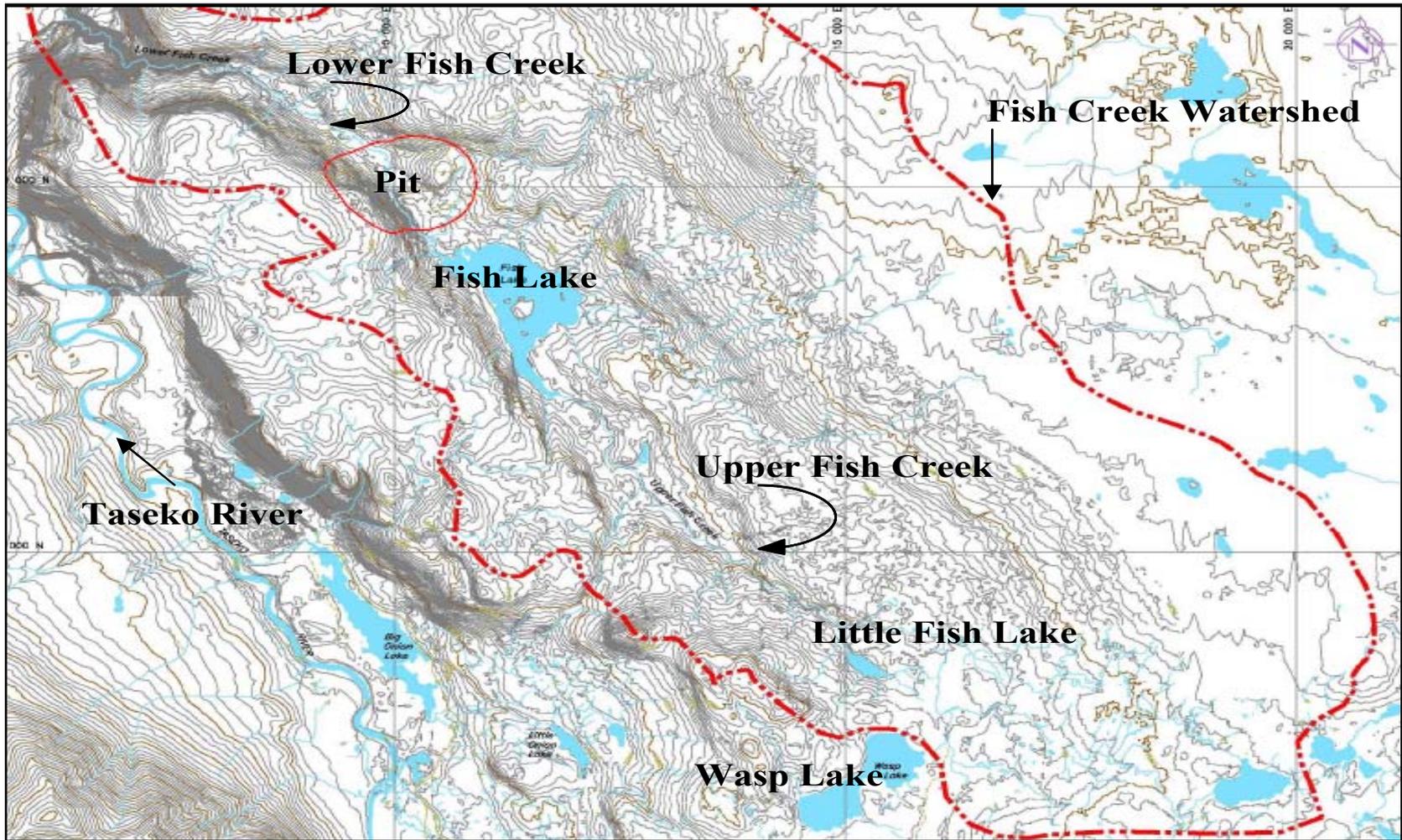
The Project would be located 125 km southwest of Williams Lake, on the Fraser Plateau in the Caribou-Chilcotin Regional District in south central BC (figure 4.1) (CEAA, 2010; EIS, 2009, v.1). The Project site was projected to occupy a 35km<sup>2</sup> portion of Provincial Crown land (CEAA, 2010). The gold-copper deposit is described as being located 1 km north of Fish Lake (Teztan Biny) and 10 km northeast of Lower Taseko Lake (Dasiqox Biny), and within the Fish Creek (Teztan Yeqox) watershed (figure 4.2) (CEAA, 2010; EIS, 2009, v.1). The Fish Creek watershed is approximately 93.4 km<sup>2</sup> in size and characterized by subdued topography with elevations ranging from 1450 to 1600 meters above sea level (BC EAO, 2009; EIS, 2009, v.1). Specifically, the deposit is buried under a 5 to 65 meter thick blanket of surficial cover at the north end of Fish Lake, and is reported to be oval in shape, approximately 1500 meters long, 800 meters wide, and extending to a maximum-drilled depth of 880 meters (EIS, 2009, v. 1).

Figure 4-1: Map of the Project Location



Source: EIS 2009, vol. 1, 7-2

**Figure 4-2: Map of the Project Setting**



**Source:** Modified version of *Taseko Mines Limited, Prosperity Gold-Copper Project: Reclamation and Closure Plan* found in Vol.3 of EIS (2009). Retrieved from CEAA 2010.

## 4.4. Project Components

### 4.4.1. Project Overview

The Project involves the construction, operation, decommissioning, and abandonment of a large-scale gold-copper open-pit mine, with an operating life of 20 years and a production capacity of 70, 000 tonnes per day (CEEA, 2010). The main elements of the Project include a mine site, a 125km transmission line, an access road and transportation corridor, and fish compensation works (CEEA, 2010; EIA, 2009, v.1) (table 4.1).

**Table 4-1: Summary of the Main Project Elements of the Prosperity and New Prosperity Proposals.**

Project Elements	Description for Prosperity	Description for New Prosperity
<b>Mine Site</b> (Includes Change)	The main features of the mine include the open pit, waste rock stockpiles, primary crusher and overland conveyor, the plant site, and the tailings storage facility.	
	Non-potentially acid generating (non-PAG) waste rock and overburden would be stored in the Waste Storage Area located between the open pit and the tailings storage facility, where Fish Lake is currently located.	Non-potentially acid-generating (PAG) waste would be located in the Waste Storage Area to the northeast of the open pit, approximately 2 km upstream of Fish Lake.
<b>Access Road and Transportation Corridor</b> (No Change)	Construction of approximately 3 km of new road to access the plant site.	
<b>Transmission Line</b> (No Change)	A 125 km long, 230 kV power transmission line connected to the BCTC transmission corridor in the vicinity of Dog Creek.	
<b>Concentrate Rail Load-Out Facility</b> (No Change)	Concentrate will be trucked to the CN Rail mainline at the existing Gibraltar Mine Concentrate Load-out Facility near Macalister	
<b>Fish Compensation Works</b> (Includes Change)	To compensate for the loss of Fish Lake and upstream and downstream spawning habitat, fish compensation works will be developed to be consistent with MOEs and the DFO's policies and legislation.	Fish compensation works to compensate for the loss of Little Fish Lake and upstream and downstream spawning habitat were developed.

Source: EIS, 2009, v.1; Taseko, 2011

## ***The Mine Site***

The mine site for both proposals would include an open pit, waste rock stockpiles, primary crusher and overland conveyor, a plant site, and a tailings storage facility (TSF) (EIS, 2009, v.1; Taseko, 2011). The open pit would provide 70,000 tons per day of mill throughput with an average daily mining rate of approximately 120,000 tons of material (Taseko, 2011). It would be conical in shape, 1200–1600 meters in diameter at the pit rim, and 525 meters deep to an elevation of 945 meters (EIS, 2009, v.1). The non-ore material types mined from the pit would be subdivided into overburden, waste rock and low-grade ore. These would be further subdivided into PAG waste rock and non-PAG waste rock (EIS, 2009, v.1).

## ***General Mine Site Changes***

The treatment of waste rock and overburden is the main difference between the original Prosperity and New Prosperity proposals. In the original proposal PAG overburden material would be placed in the TSF located in the Upper Fish Creek valley, starting approximately 1 km south of the mill site (EIS, 2009, v.1). Non-PAG material would be stored in the Waste Storage Area located to the south of the open pit on the current site of Fish Lake (EIS, 2009, v.1). This would involve the dewatering and destruction of Fish Lake. In the updated proposal PAG overburden material would be stored under water within the TSF located in the Upper Fish Creek valley, starting approximately 2 km south of Fish Lake (Taseko, 2011). Non-PAG waste rock and overburden produced during active mining and not used in TSF embankment construction, and the ore stockpile, would be located in the Waste Storage Area to the northeast of the open pit, approximately 2 km upstream of Fish Lake (Taseko, 2011).

## ***Transmission Line, Access Road and Rail Load-Out Facility Components***

Electricity to the mine site would be supplied through a 125km long, 230 KV power transmission line, connected to a new switching station at the BC Hydro north-south transmission corridor near Dog Creek (CEAA, 2010; EIS, 2009, v.1). Access to the mine site would be via a 2.8 km access road, which would be extended from the existing transportation corridor around Williams Lake (EIS, 2009, v.1). The ore would be processed at the mill and the resulting concentrate would be trucked out to the CN Rail

mainline at the existing Gibraltar Mine Concentrate Load-out Facility near Macalister (EIS, 2009, v.1; Taseko, 2011). There are no changes to the proposed transmission line, access road, or rail load-out facility components for the updated proposal.

### ***Fish Compensation Works***

The Fish Compensation Plan provided in the original proposal was developed to compensate for the unavoidable loss of fish and fish habitat in the Fish Creek watershed, specifically Fish Lake. Some of the key components of the proponent's fish and fish habitat compensation plan, as outlined in the *Feasibility Design of Fisheries Compensation Report*, include:

**Fish Salvage:** Prior to dewatering of Fish Lake and disturbance of the mine site area, approximately 12,000 fish of various size and age classes would be live-caught from Fish Lake and placed into recipient lakes (Feasibility Design of Fisheries Compensation Report, 2010, found in CEEA, 2010).

**Prosperity Lake:** The proponent would create the 113 ha Prosperity Lake, to compensate for the loss of Fish Lake and Little Fish Lake, upslope of the south embankment of the proposed TSF (Levy, 2009). Prosperity Lake would be created by building a 1550-meter dam, stripping vegetation and soils from the basin where the lake would be situated, and allowing the basin to fill with runoff collected by a headwater diversion channel (Feasibility Design of Fisheries Compensation Report, 2010, found in CEEA, 2010). It was projected that it would support approximately 20,000 fish, stocked with fry from the Clearwater Hatchery (Feasibility Design of Fisheries Compensation report, 2010, found in CEEA, 2010).

**Headwater Diversion Channel and Headwater Retention Pond:** The proponent would design a headwater diversion channel, which would direct clean water around the eastern side of the Fish Creek Valley and direct it either downstream into the headwater retention pond or upstream for return into lower Fish Creek Valley north of the proposed open pit (Feasibility Design of Fisheries Compensation report, 2010, found in CEEA, 2010). The proponent would also create a headwater retention pond that

would be non-fish bearing but could contribute nutrients and organic materials to downstream fish habitats (Levy, 2009).

## **4.5. Project Phases and Timing**

Development and operation of the Project would be carried out through four phases: the construction phase; the operation phase; the closure phase; and the post-closure phase (EIS, 2009, v.1; Taseko, 2012)(appendix table C.1). These phases are unchanged for the revised proposal. The construction phase spans a period of roughly two years, starting with the issuance of appropriate development permits and ending at the point at which the concentrator reaches commercial production (EIS, 2009, v.1; Taseko, 2012). At this point the operation phase would begin and continue for approximately 20 years until no tailings are generated by the concentrator or through to the end of milling (EIS, 2009, v.1; Taseko, 2012). The closure phase would begin at the cessation of tailings production through to the time period when the open pit would fill with water and start discharging to Lower Fish Creek (EIS, 2009, v.1; Taseko, 2012). The mine plan projects a 24-year closure phase. Post-closure activities are related to environmental monitoring and follow-up, and would begin when the open pit has filled with water and started to discharge to the receiving environment (EIS, 2009, v.1; Taseko, 2012). This phase would continue until Taseko was relieved of its responsibilities under the Reclamation Code, Mines Act, and other permits, authorizations, and approvals (EIS, 2009, v.1; Taseko, 2012).

## **4.6. Alternative Project Development Options**

In their original EIS, the proponent undertook an analysis of alternative means of carrying out the Project. The driving facts in their assessment of alternatives primarily included economic considerations, and the geographic proximity of the ore body to Fish Lake. The proponent considered four different mine development plans with varying degrees of mitigation to Fish Lake. The four options include:

**Mine Development Plan 1-** This was the most environmentally sound option, which located the tailings in the Tête Angela Creek watershed, approximately 8 km north-east of the open pit (CEAA, 2010; EIS, 2009, v.2). This is upstream of Fish Lake, thereby maintaining the ecological integrity of the Fish Creek ecosystem. However, the proponent did not perceive this option to be economically feasible due to a projected operating cost of \$536 million above the preferred option (CEAA, 2010; EIS, 2009, v.2).

**Mine Development Plan 2-** This development plan was proposed to provide partial mitigation for the effects of mining activities on Fish Lake. In this plan the tailings would be located at the southern reaches of the Fish Creek watershed, thereby avoiding the destruction of Little Fish Lake and some of upper Fish Creek (CEAA, 2010; EIS, 2009, v.2). The proponent did not perceive this option to be economically feasible due to a projected operating cost of \$337 million above the preferred option (CEAA, 2010; EIS, 2009, v.2).

**Mine Development Plan 3-** This option was identified early on in the planning stage as the preferred mine development plan. In this plan tailings would be located south of Fish Lake, and would eliminate Fish Lake, Little Fish Lake, and the majority of upper Fish Creek (CEAA, 2010; EIS, 2009, v.2). This option included a fish compensation plan that would compensate for the loss of the water bodies. The proponent asserted that, with appropriate mitigation, this plan was the most environmentally and fiscally responsible, as it confined all the project components within a single watershed and could contain tailings most effectively in the event of dam failure (CEEA, 2010; EIS, 2009, v.2).

**Mine Development Plan 3b-** This plan would use the preferred tailings location in the upper Fish Creek watershed, and would store waste rock, low-grade ore, and overburden stockpiles to the north-east of the open pit, thus preserving Fish Lake (Teztan Biny) (CEAA, 2010; EIS, 2009, v.2). This option was abandoned because the proponent's analysis showed that long-term seepage from the removed TSF would eventually negatively impact water quality in Fish Lake (Teztan Biny) to bellow acceptable ecological standards (CEAA, 2010). It was not economical for this plan to provide mitigation for long-term loss of fish and fish habitat.

The proponent also performed a Multiple Accounts Analysis (appendix table C.2), which led to the conclusion that, with appropriate mitigation, Mine Development Plan 3 was the only technically and economically feasible option.

#### **4.6.1. The New Prosperity Alternative**

Higher long term prices for both gold and copper have resulted in a direct increase in capital revenue of \$200 million and a \$100 million in direct operating revenue over the 20-year mine life; therefore, it is currently economically feasible for the proponent to locate the tailings away from Fish Lake (Taseko, 2011). Due to improved mine economics, the proponent's revised 2011 EIS most closely outlines the previously unfeasible Mine Development Plan 3b.

### **4.7. Project Study Areas and Anticipated Environmental and Socioeconomic Effects**

The following section provides a description of the Project's spatial study areas and anticipated environmental and socioeconomic effects i.e., assessment components. The proponent has established study areas based on two zones of the Project's influence. The zones include a Local Study Area (LSA) and a Regional Study Area (RSA). The LSA is defined as "the area that would be directly affected by the activities associated with the proposed project" (EIS, 2009. Retrieved from BC EAO, 2009 p.27). The RSA is aligned with the cumulative impact assessment, and is defined by "the furthest extent that measurable or demonstrable proposed project-specific effects may act in combination with similar effects from other projects on VEC's" (EIS, 2009. Retrieved from BC EAO, 2009 p. 27).

#### **4.7.1. Employment and Economic Benefits**

The Project is predicted to have a beneficial effect on the labour market, income, government revenue, and local and regional economic development, during stages of construction, operation, and decommissioning (CEAA, 2010; EIS, 2009, v.6). Based on a capital cost estimated at \$1 billion and anticipated annual operating expenditures of

\$200 million, the proponent expects that the Project will generate in excess of \$5 billion in economic benefit over its anticipated 20 years of operation (EIS, 2009, v.6; Taseko, 2011). The proponent also notes that the Project would help diversify the economic base, create new opportunities for contractors and suppliers, and indirectly generate demand for new housing units, improved infrastructure, and other associated construction opportunities (BC EAO, 2009; EIS, 2009, v.6)

#### **4.7.2. Background Information**

The Cariboo-Chilcotin Region in which the Project would take place is characteristic of a typical rural BC economy. There is a heavy reliance on the primary resource sector for employment and income, by a labour sector that is characterised by low levels of white collar and service workers and high levels of trade and technical workers (BC EAO, 2009). The region is particularly dependent on a forestry sector that has been negatively impacted by BC's mountain pine beetle infestation. The region's economic base, particularly forestry's share of future employment, is expected to decline (BC EAO, 2009; Taseko, 2011). BC-Stats unemployment values for November 2009 showed that the region had an unemployment rate of 12 percent, compared to BC's decreasing rate of 7.4 percent for that same month (BC EAO, 2009). Unemployment rates for First Nation's populations were significantly higher than those exhibited by the region as a whole.

#### ***Proponent's Assessment of Employment Benefits***

The proponent indicated that the Project would positively stimulate the labour market, and significantly increase regional employment during construction and operation. The proponent has stated that it would increase labour market benefits to the local region by: considering local hiring policies, providing education and training opportunities, looking at local procurement policies, and working with First Nations (EIS, 2009, v.6; BC EAO, 2009). The proponent estimates that the Project's annual payroll would be \$30 million, with \$29 million paid locally, which represents 2.7 percent of the total regional income (CEAA, 2010; EIS, 2009, v.6) (appendix table C.3).

### ***Direct Employment***

On a provincial scale the Project would directly generate approximately 378 jobs annually during construction, approximately 377 jobs annually during operations, and approximately 10 jobs annually during closure (CEAA, 2010; EIS, 2009, v.6). On a regional scale, local hiring would include approximately 94 direct jobs annually during construction, approximately 354 direct jobs annually during operations, and approximately 10 direct jobs annually during closure (CEAA, 2010; EIS, 2009, v.6).

### ***Indirect Employment***

Indirect employment refers to workers employed at businesses supplying goods or services to Taseko (CEAA, 2010). On a provincial scale, the Project would indirectly generate approximately 124 jobs annually during construction, approximately 110 jobs annually during operations, and approximately 3 jobs annually during closure (CEAA, 2010; EIS, 2009, v.6). On a regional scale, local hiring would include approximately 238 indirect jobs annually during construction, approximately 324 indirect jobs annually during operations, and approximately 9 jobs indirect annually during closure (CEAA, 2010; EIS, 2009, v.6).

### ***Induced Employment***

Induced employment refers to workers employed by businesses benefiting from re-spending of direct and indirect income (CEAA, 2010). On a provincial scale, the Project would generate approximately 83 induced jobs annually during construction, approximately 290 induced jobs annually during operations, and approximately 8 induced jobs annually during closure (CEAA, 2010; EIS, 2009, v.6). On a regional scale, local hiring would include approximately 29 induced jobs annually during construction, approximately 118 induced jobs annually during operations, and approximately 3 induced jobs annually during closure (CEAA, 2010; EIS, 2009, v.6).

#### **4.7.3. Proponent's Assessment of Economic Benefits**

The proponent estimated the total annual operating expenditures to be \$200 million, for a total of \$5 billion over the project's 20-year operating life (EIS, 2009, v.6).

The average annual total income is expected to be \$41.9 million in the construction phase and \$52.7 million in the operation phase, while purchases from regional suppliers and businesses are expected to total up to \$22 million (EIS, 2009, v.6).

### ***Government Revenue***

The proponent expects that the Project would generate total annual government revenues of \$26.2 million in the construction phase, \$48.4 million in the operating phase, and \$0.3 million in the closure phase (EIS, 2009, v.6; Taseko, 2011). Overall, the Project is expected to generate \$340 million in GDP annually (EIS, 2009, v.6; Taseko, 2011) (appendix table C.4).

## **Chapter 5.**

# **Summary of the Provincial Environmental Assessment Report for the Project**

### **5.1. The Project's Unique EA Process**

Two separate EA processes were carried out for the original Project. The Project was determined reviewable under the *BC EAA (2002)*, in accordance with Part 3 of the Reviewable Project Regulation, as the mine development would have a production capacity of greater than 75, 000 tonnes per year of mineral ore (BC EAO, 2010). In accordance with the *CEA Act (1992)*, the Project also required federal approval to proceed, as an EA must be completed before federal departments are able to issue any permits, approvals or authorizations (CEAA, 2010).

In accordance with the *Canada-British Columbia Agreement on Environmental Assessment Cooperation (2004)*, provincial and federal governments developed a joint review panel process and agreed to a common *Terms of Reference* (CEEA, 2010; Haddock, 2011). However, in June 2008, the provincial Minister of the Environment Barry Penner issued a Section 14 order under the *BC EAA (2002)*, which required the BC EAO to carry out its own separate EA, rather than a joint review process with the federal government (CEEA, 2010). The Ministers simply stated that a joint review panel process was “not warranted in the circumstances” (as quoted in Haddock, 2011).

It is important to note that a joint review panel had previously rejected a Kemess North gold-copper mine proposal in March 2008, following the recommendations of the joint panel (Haddock, 2011). Shortly after, Taseko challenged the soundness to a joint review panel process, and indicated a preference for a separate provincial review.

Despite opposition from First Nations, BC's Minister of Environment pulled out of the joint panel review process and directed the BC EAO to proceed with a separate EA

Nevertheless, in October 2008 the CEAA and the BC EAO released joint draft *Terms of Reference* and draft EIS guidelines for the Project (CEAA, 2010). Following a public comment period, Canada's Minister of the Environment and the BC EAO jointly issued finalized EIS guidelines to the proponent in January 2009. Canada's Minister of Environment upheld the federal government's commitment to an independent EA process and appointed the federal Panel in January, 2009 (Haddock, 2011). These are the events that led to the unique circumstance of two separate EA being conducted for the same Project, which resulted in divergent EA conclusions despite corresponding *Terms of Reference* and EIS guidelines. Appendix table E.25 directly compares the conclusions of the divergent findings.

## **5.2. The Provincial EA**

This chapter features a narrative summary of the *Prosperity Gold-Copper Project Assessment Report* that was prepared by the BC EAO and issued on December 17, 2009. The report was prepared with respect to the Application by Taseko Mines Limited for an EA Certificate pursuant to section 17 of the *BC EAA* (2002). The summary contains five main components: (1) an overview of the provincial assessment process, including its triggers, development and methodology; (2) an overview of BC EAO's assessment of potential environmental, heritage, health, social and economic effects of the Project, including how the proponent proposes to mitigate the effects; (3) an overview of the Project's potential effect on First Nations; (4) a summary of BC EAO's assessment of the alternative means of undertaking the Project; and (5) a summary of BC EAO's conclusions of the potential for significant adverse effects, and their justification analysis.

### 5.3. The Provincial EA Trigger and EA Development

Given that the Project was a mine facility that would have a production capacity of greater than 75, 000 tonnes per year of mineral ore, it was reviewable under the *BC EAA* (2002) in accordance with Part 3 of the Reviewable Project Regulations (BC EAO, 2009). The provincial EA process was formally initiated on June 22, 2008, after the provincial Minister of Environment issued an Order in accordance with section 14 of the *BC EAA* (2002), ordering that the provincial EA be undertaken by the BC EAO (BC EAO, 2009). A summary of the provincial EA process is provided in table 5.1, while a more detailed description is provided in appendix table D.1.

**Table 5-1: Steps of the Provincial EA Review Process**

Date	Stages of the Provincial EA Review
<i>February 19, 2007</i>	<ul style="list-style-type: none"> <li>▪ DFO referred the Project to the Minister of Environment for referral to a Panel.</li> </ul>
<i>October 2008</i>	<ul style="list-style-type: none"> <li>▪ The CEAA and the BC EAO released joint draft EIS guidelines.</li> </ul>
<i>June 22, 2008</i>	<ul style="list-style-type: none"> <li>▪ The provincial Minister of Environment issued an Order pursuant to section 14 of the <i>BC EAA</i> (2002) ordering that the provincial EA be undertaken by the BC EAO.</li> </ul>
<i>January 9, 2009</i>	<ul style="list-style-type: none"> <li>▪ The BC EAO approved the final <i>Terms of Reference</i>.</li> </ul>
<i>January 26, 2009</i>	<ul style="list-style-type: none"> <li>▪ The proponent submitted the Application to the BC EAO.</li> </ul>
<i>March 11, 2009</i>	<ul style="list-style-type: none"> <li>▪ Taseko submitted its final EIS to the Panel and the BC EAO.</li> </ul>
<i>March 16, 2009</i>	<ul style="list-style-type: none"> <li>▪ Review of the Application was initiated.</li> </ul>
<i>December 17, 2009</i>	<ul style="list-style-type: none"> <li>▪ The BC EAO completed its review in accordance with its 180 day timeline</li> <li>▪ The BC EAO issued the <i>Prosperity Gold-Copper Project Assessment Report</i>.</li> </ul>
<i>January 14, 2010</i>	<ul style="list-style-type: none"> <li>▪ The provincial Ministers of the Environment and Energy, Mines and Petroleum Resources accepted BC EAO's recommendations and an EA certificate was issued.</li> </ul>

Source: BC EAO, 2009 p.19-22

### 5.4. The Provincial EA Methodology

In its evaluation of the Application, the BC EAO assessed whether the Project would have *significant adverse* environmental, social, economic, heritage and health

effects. The BC EAO also assessed potential effects on First Nation's Aboriginal rights and title. For each of the assessment components, the BC EAO:

- provided relevant background information;
- identified the potential for significant adverse effects, considering the mitigation measures proposed in the Application or developed through the EA process as a result of consultation; and
- assessed whether any residual effects would be significant (BC EAO, 2009).

Where the Project was found to be likely to cause *significant adverse effects*, the BC EAO also considered whether the effects were justified. The BC EAO considered the Project's influence based on spatial boundaries beyond which the potential environmental, cultural and socio-economic effects were expected to be non-detectable (BC EAO, 2009). Furthermore, the BC EAO also considered temporal boundaries, or the periods when valued assessment components would be affected by the Project (BC EAO, 2009). Finally, the BC EAO considered the cumulative impacts of the Project, which it defined as the "changes caused by activities associated with a proposed project in combination with other past, current and reasonably foreseeable activities" (BC EAO, 2009 p. 31). A detailed summary of the assessment methodology undertaken by the BC EAO is provided in appendix table D.2.

## **5.5. BC EAO's Assessment of Potential Environmental, Heritage, Health, Social and Economic Effects of the Project.**

This section summarizes the BC EAO's evaluation of the Project's potential effects on the identified assessment components (table 5.2). Those wishing more detail on the specific facts that the BC EAO considered for each of the assessment components should consult appendix D.3-D.15. The BC EAO's final conclusions on the likelihood that the Project would have a significant adverse effect on environmental, heritage, health, social and economic components are summarized in table 5.3.

**Table 5-2: A Summary of the Assessment Components Considered in BC EAO's EA**

Effects Considered	Assessment Components
<i>Environmental</i>	Metal Leaching and Acid Rock Drainage; Water Quality and Aquatic Ecology; Fish and Fish Habitat; Air Quality; Vegetation; Terrain and Soils; and, Wildlife.
<i>Economic</i>	Economic Issues
<i>Social</i>	Social Issues
<i>Heritage</i>	Archeological and Heritage Resources
<i>Health</i>	Human Health and Healthy Living

Source: BC EAO, 2009

### 5.5.1. Environmental Effects

#### ***Metal Leaching and Acid Rock Drainage***

The BC EAO considered the information outlined in the proponent's application and the information provided by project review participants, and identified several issues related to metal leaching (ML) and acid rock drainage (ARD) (appendix table D.3). As defined by the BC EAO in the provincial *Assessment Report*, ML and ARD are naturally occurring processes when minerals containing sulphides come in contact with both air and water (BC EAO, 2009 p. 32). When sulphides come into contact with water and oxygen they rust or oxidize, which can produce acid (BC EAO, 2009 p. 32). When streams and other water bodies carry this acid, it is called ARD, and when the acid in ARD leaches metals, such as copper, zinc and lead, it is called ML (BC EAO, 2009 p. 32). As these elements dissolve, they adversely affect water quality and ecosystem health. The BC EAO concluded that *the Project is not likely to have significant adverse effects in respect of metal leaching and acid rock drainage* (BC EAO, 2009 p. 37).

#### ***Hydrology and Hydrogeology***

As defined by the BC EAO in the provincial *Assessment Report*, hydrology is the study of the movement and distribution of water on the surface of the earth, and addresses water resources, availability and patterns of flow (BC EAO, 2009 p. 37). Hydrogeology is the study of water as groundwater below the surface of the earth, and addresses the unseen movement and availability of subsurface water resources (BC EAO, 2009 p. 37). After considering the relevant issues with regard to the proponent's mitigation measures and commitments (appendix table D.4), the BC EAO concluded that

*the Project is not likely to have significant adverse effects on hydrology and hydrogeology* (BC EAO, 2009 p. 42).

### ***Water Quality and Aquatic Ecology***

The BC EAO identified several issues related to water quality and aquatic ecology (appendix table D.5). These environmental components can be directly or indirectly affected by mine construction activities in or near aquatic environments, and directly or indirectly affected by various mine discharges (BC EAO, 2009). The BC EAO was satisfied with the material provided by the proponent and assessment participants, and was of the opinion that sufficient information was available to assess the potential for significant adverse effects. The BC EAO concluded that *the Project is not likely to have significant adverse effects on water quality and aquatic ecology* (BC EAO, 2009 p. 51).

### ***Fish and Fish Habitat***

At the local level, the Project would affect the Fish Creek watershed, which contains a monoculture population of rainbow trout with about 85,000 residing in Fish Lake and 5,000 in Little Fish Lake (BC EAO, 2009). At the regional level the Project would affect MOE's Management Unit 5-4, which contains several small and large lakes with both self-sustaining monoculture rainbow trout and other multi-species populations, and hatchery released rainbow trout (BC EAO, 2009). For their analysis of Project impacts on fish and fish habitat, the proponent chose lower Fish Creek salmonids and upper and middle Fish Creek rainbow trout as their indicator species, as these species are representative of the environment and highly susceptible to the Project's environmental effects.

After considering these relevant issues with regard to the proponent's mitigation measures and commitments (appendix table D.6), the BC EAO assessed the potential for *significant adverse effects* that would result from the loss of Fish Lake and Little Fish Lake. Their assessment was as follows:

- ***Magnitude*** – The Project would have severe effects on Fish Lake and Little Fish Lake. Fish Lake, which is a major producer of rainbow trout, would be dewatered. Little Fish Lake would be covered by the proposed TSF.

- **Geographic Extent** – In a local context, the Project would encompass the entire geographic extent of the lakes and upper Fish Creek that flows between them. Fish Lake has regular but low use and is distinctive for its high elevation setting and remote location.
- **Duration and Frequency** – The losses of Fish Lake and Little Fish Lake would occur once but would be immediate and permanent. The Project's effects would begin with the dewatering of Fish Lake in pre-construction and the filling of the Fish Lake cavity with non-PAG waste rock. Little Fish Lake would be inundated by the TSF as it expands.
- **Reversibility** – Should Fish Lake be dewatered and filled with waste rock, and Little Fish Lake covered by the TSF, these losses would be irreversible.
- **Context** – While the proposed site has been subject to drilling and exploration related to the Project, Fish Lake and Little Fish Lake could be described as undisturbed.
- **Probability** – The losses of Fish Lake and Little Fish Lake are certain with the present mine plan, since the proponent has determined that other options that would not affect the lakes are not feasible and/or raise environmental security and health concerns with mine construction and operation (BC EAO, 2009 p. 60).

The BC EAO concluded that *the Project is likely to have significant adverse effects on fish and fish habitat* (BC EAO, 2009 p. 61). Conclusion on whether effects to fish and fish habitat should be considered justified are discussed in section 5.8.

### **Air Quality**

The BC EAO identified two issues related to air quality (appendix table D.7). The analysis of the Project's effect on the atmosphere considered Criteria Air Contaminants (CAC) and Greenhouse Gases (GHG) as the key indicators of air quality. CACs are identified as nitrogen dioxide, carbon monoxide, sulphur dioxide and particulate matter. As highlighted in the provincial *Assessment Report*, CACs qualify as primary indicators of air quality and are associated with human health impacts (primarily through inhalation) and environmental impacts that include aesthetic, visibility, depositional effects, and the formation of acid rain (BC EAO, 2009). GHGs are identified as carbon dioxide, methane, and nitrous oxide. GHGs qualify as primary indicators of the Project's effect on the atmosphere because emissions of these gases can potentially contribute to climate change, as they can absorb outgoing terrestrial infrared radiation and consequentially

lead to global warming (BC EAO, 2009). The BC EAO concluded that *the Project is not likely to have a significant adverse effect on air quality* (BC EAO, 2009 p. 64).

### **Vegetation**

The BC EAO assessed information on communities, species groups, and ecosystems that have intrinsic ecological or social values, are sensitive to Project activities, and are representative of overall ecosystem conditions (appendix table D.8). Specific vegetation studies were conducted on seven key indicators, which include: old growth forest; wetland ecosystems; riparian ecosystems; grassland ecosystems; rare plants; ecological communities of conservation concern; and forest capability (BC EAO, 2009). The BC EAO concluded that *the Project is not likely to have a significant adverse effect on vegetation* (BC EAO, 2009 p. 71).

### **Terrain and Soils**

The key issue for terrain resources associated with the Project is the potential for change or alteration of terrain stability due to Project activities such as site clearing and contouring, trenching and blasting, and the development of infrastructure components (BC EAO, 2009) (appendix table D.9). The main concern is the potential for mass wasting events to occur as a result of altered terrain stability. The key issues for soil resources associated with the Project are changes to physical and chemical soil properties (including contamination). The BC EAO concluded that *the Project is not likely to have significant adverse effects on terrain and soils* (BC EAO, 2009 p. 75).

### **Wildlife**

The key indicator wildlife species assessed were selected based on strong regional interest, their conservation status, and their socio-economic value as hunted and subsistence species (BC EAO, 2009). In 2006, a Working Group approved a wildlife list based on a key indicator analysis, and a species of Provincial Concern analysis (BC EAO, 2009). More than 30 wildlife species were assessed in the Application. After considering the relevant issues with regard to the proponent's mitigation measures and commitments (appendix table D.10), the BC EAO concluded that *the Project is not likely to have a significant adverse effect on wildlife* (BC EAO, 2009 p. 84).

### **5.5.2. Economic Effects**

The Project would result in economic effects at the regional and local scale during all phases of the undertaking. Key economic issues concern the labour market, employment income, government revenues and finances, regional economic development, tourism, and hunting (BC EAO, 2009) (appendix table D.11). The BC EAO concluded that *the Project is not likely to have significant adverse effects on local, regional, and provincial economies* (BC EAO, 2009 p. 91).

### **5.5.3. Social Effects**

The Application addressed the Project's effects on population structure, workforce settlement and housing, transportation and traffic, community services, and health and medical services (BC EAO, 2009) (appendix table D.12). While the loss of Fish Lake and associated recreation sites would have adverse social effects on a local scale, the BC EAO concluded that nearby areas would have the capacity to absorb that recreation activity. The BC EAO concluded that *the Project is not likely to have significant adverse social effects* (BC EAO, 2009 p. 95).

### **5.5.4. Heritage Effects**

Within the mine site study area, a total of 15,882 shovel tests and five evaluation units were excavated between 1994 and 2007 (BC EAO, 2009). This resulted in the identification of 79 sites:

- 73 of which featured lithic components;
- 21 of which featured subsistence or habitation features;
- 10 of which featured faunal components; and
- one that featured a potential historic human burial (BC EAO, 2009 p. 96).

After considering the relevant issues with regard to the proponent's mitigation measures and commitments (appendix table D.13), the BC EAO came to the conclusion that *the Project is not likely to have significant adverse effects on archeological and heritage resources* (BC EAO, 2009 p. 98).

### **5.5.5. Health Effects**

#### ***Human Health***

The key indicators considered in the assessment of human health were chemical risks to human and ecological health from exposure to aerial emissions and water discharge from the Project (appendix table D.14). The proponent also included an analysis of the Project's effect on country foods and fish tissue. The BC EAO concluded that *the Project is not likely to have a significant adverse effect on human health* (BC EAO, 2009 p. 101).

#### ***Healthy Living***

During the time of the Application the Government of BC had the goal of leading the way in North America in healthy living and fitness; therefore, the proponent also considered the Project's effects on several specific aspects of healthy living, including:

- how the Project would contribute to environmental health;
- how the Project would enable or enhance physical activities and fitness; and
- how the Project would contribute to the health education of employees (BC EAO, 2009)

The healthy living section of the provincial *Assessment Report* only addressed the latter two issues (appendix table D.15). The BC EAO determined that the Project would support healthy living if the proponent operates a dry camp, and provides recreational facilities and healthy food options to employees. The BC EAO concluded that *the Project is not likely to have significant adverse effects on healthy living* (BC EAO, 2009 p. 103).

## **5.6. First Nations Consultation**

The Project lies within the traditional territory of the Tsilhqot'in and Secwepemc Nations. The BC EAO was aware of the *Tsilhqot'in Nation v. British Columbia*, [2007] BCSC 1700 court ruling (from here on referred to as the *William* decision), and recognized that in the *William* decision, the court accepted that Tsilhqot'in people have an Aboriginal right to hunt and trap birds and animals through the "Claim Area", which is

within the area of the Project (*William*, pp. in-v in BC EAO, 2009 p. 123). At the time, the BC EAO also understood that in the *William* decision the court declined to find that Tsilhqot'in people have Aboriginal title to any portion of the "Eastern Trapline Territory", which is also within the area of the Project (*William*, para 893, 898-900 in BC EAO, 2009 p. 123). Appendix table D.16 outlines the steps of the provincial consultation process.

BC EAO's *Assessment Report* identifies 12 affected First Nations and how they may be affected by components of the Project (appendix table D.17). The following section will first describe how First Nations directly participated in the EA process, and then separately examine specific Aboriginal rights, context, and consultation issues with respect to affected Secwepemc and Tsilhqot'in Nations.

The Alkali Lake Band (of the Secwepemc Nation) and the Tsilhqot'in National Government (TNG) directly participated and/ or submitted comments for consideration in the application review stage, while the Canoe Creek Indian Band participated in the pre-application stage (appendix table D.18). No other First Nations chose to directly participate in the EA process. The BC EAO directly met with the TNG, the Alkali Lake Band First Nation, Williams Lake Indian Band, and Canoe Creek Indian Band, and provided \$42,000, \$60, 000, \$165, 000, and \$25, 000 in participation funding to each of the First Nations respectively (BC EAO, 2009).

Specifically, the BC EAO analyzed the Project in relation to asserted or established Aboriginal rights and the potential for impacts to those rights. The BC EAO emphasized that, for the affected First Nations, "*consultation was engaged in by proponent, under the direction of BC EAO, and by the BC EAO itself, on behalf of the Province, both preceding and during the EA of the Project*" (BC EAO, 2009 p. 118). The BC EAO's primary information sources included:

- traditional knowledge and traditional use studies commissioned by the proponent, which specifically include the *Heritage Significance of the Fish Lake Study Area: Ethnography* and *An Overview of the Heritage Significance of the Proposed Power and Transportation Corridors Servicing the Fish Lake Project* studies;
- information obtained during Working Group meetings;
- information obtained during meetings directly with First Nations;

- comments submitted by First Nations and the proponent's responses;
- information obtained from James Teit's comprehensive Shuswap ethnography (1908), which was perceived by the BC EAO to be the main source of information on pre- and early post contact Secwepemc; and
- subsequent information received during the Application review; (BC EAO, 2009 p. 106-107).

### **5.6.1. BC EAO Conclusions on the Project's Effects on the Secwepemc and Tsilhqot'in First Nations**

For its assessment of the Project's effect on Secwepemc Nation's Aboriginal Rights and Title, the BC EAO concluded that "*consultation has been reasonable and appropriate and has been carried out in good faith and with the intention of substantially addressing specific concerns expressed by the potentially affected Secwepemc First Nations*" (BC EAO, 2009 p. 121). The BC EAO also concluded that "*given the mitigation measures and commitments proposed by the proponent, residual effects of the Project on the ability of Secwepemc bands to continue to practice aboriginal rights, whether asserted or proven, and to carry out traditional activities are not significant, and that impacts on any established and admitted rights are justifiable*" (BC EAO, 2009 p. 122). Assessment conclusions for each of the Secwepemc Nation's bands is summarized in appendix table D.19.

The BC EAO also recognized asserted and proven Aboriginal rights of the members of the Tsilhqot'in Nation based on the reasons highlighted by Mr. Justice Vickers in the *William* case. Based on the *William* decision, the BC EAO understood that:

- There are six Tsilhqot'in bands and one additional Tsilhqot'in community (see Appendix 5.17);
- "The Tsilhqot'in people have an Aboriginal right to hunt and trap birds and animals throughout the "Claim Area" defined in the *William* decision, for the purposes of securing animals for work and transportation, food, clothing, shelter, mats, blankets and crafts, as well as for spiritual, ceremonial and cultural uses" (*William*, pp. iv-v in BC EAO, 2009 p. 123);
- "The Tsilhqot'in people have a right to trade in skins and pelts as a means of securing a moderate livelihood" (*William*, p. v in BC EAO, 2009 p. 123); and

- “The Tsilhqot’in people do not have aboriginal title to any portion of the “Eastern Trapline Territory” as defined in the *William* decision, and the proposed mine site is located in the “Eastern Trapline Territory” (*William*, para 893, 898-900 in BC EAO, 2009 p. 123).

For its assessment of the Project’s effect on Tsilhqot’in Nation’s Aboriginal Rights and Title (appendix table D.20), the BC EAO concluded “*the process of consultation has been appropriate and reasonable and has been carried out in good faith and with the intention of substantially addressing specific concerns expressed by the Tsilhqot’in Nation or understood by the BC EAO from available sources*” (BC EAO, 2009 p. 135). The BC EAO was also satisfied with the proponent’s commitments to ensure that impacts on the Tsilhqot’in Nation asserted and established rights are avoided, mitigated or minimized.

Overall, in weighing societal interests against the Project’s potential impacts on asserted and established First Nation’s rights, the BC EAO was of the view that “*any impacts on established and admitted rights were justifiable*” (BC EAO, 2009 p. 135). In reaching this conclusion, the BC EAO emphasized that:

- The Project is not viable without the loss of Fish Lake;
- The Project is significant to the regional and provincial economies in an area that has been severely impacted by the mountain pine beetle.
- The Project would offer significant employment opportunities during construction and operations; and,
- The Project would bring employment and training opportunities to several First Nations communities suffering from high levels of unemployment (BC EAO, 2009 p. 135-136).

## **5.7. Review of the Proponent’s Alternatives Assessment**

In the concluding sections of their EA report, the BC EAO specifically reviewed and highlighted the Alternatives Assessment portion of the proponent’s application. For the purpose of the assessment, the BC EAO defined alternative means of carrying out the Project as “the various technically and economically feasible ways that the Project can be implemented” (BC EAO, 2009 p. 136). The BC EAO assessed each of the

identified alternatives for the Project, the environmental effects of any such alternative means, and the proponent's reasons for selecting the preferred alternative.

During the Application Review, EC, the MEMPR, DFO, MTCA, and First Nations, provided comments regarding the proponent's Alternatives assessment. The foremost area of concern shared amongst these EA participants related to the rationale for the Project's tailings, PAG (TSF), and non-PAG storage locations, and their negative effects on Fish Lake and the Fish Creek watershed. In response to these concerns, amongst others, the proponent presented its analysis of several TSF and non-PAG storage locations, which were subjected to four *fatal flaw criteria*. Alternatives were considered fatally flawed or unacceptable if:

- Their cost exceeded \$1 billion over the life of the mine;
- The methodology for the alternative was not proven effective for the ML/ ARD mitigation measures;
- There was uncertainty of self sustaining water cover at closure; and
- There was unacceptable environment liability (BC EAO, 2009 p. 139).

As highlighted in Section 4.6, mine development option 3, which involves the dewatering of Fish Lake and the TSF located immediately upstream, is the proponent's preferred plan. The proponent concluded that options 1 and 2 are unacceptable and fatally flawed because they result in projects with excessive economic risk. In their assessment of the proponent's analysis, the BC EAO noted that it does not appear that the proponent applied the four "fatal flaw" criteria to this reduced number of options, and that the proponent did not specify how economic risk was determined to be a fatal flaw of options 1 and 2. Specifically, BC EAO noted that the proponent did not apply an economic "fatal flaw" threshold of \$1 billion additional costs over the life of the mine, rather additional costs of options 1 and 2 were reported as being \$440 and \$340 million respectively, and were in turn described as fatal flaws (BC EAO, 2009 p.142). Despite this lack in specificity, the BC EAO accepted that options 1 and 2 would have substantially greater costs than option three. With regard to this lack of specificity, the BC EAO noted that the overall degree of information and analysis supplied by the proponent exceeds that which is typically required or presented in the EA of mine projects.

The BC EAO highlighted that at the time of the completion of the *Assessment Report*, EC had not completed its analysis of the proponent's supplemental alternatives assessment report, DFO and MTCA had not commented on the report, and that the MEMPR found the mine development plan and alternatives assessment to be sound (BC EAO, 2009 p. 142). The BC EAO stated that, irrespective of the financial considerations, there were environmental consequences to all the options. The BC EAO specifically noted that:

- Due to the location of the ore body, Fish Lake may be adversely affected by mining operations regardless of where tailings and PAG are stored;
- Active mining activities themselves, such as blasting and trucking, may impact the integrity and use of Fish Lake by both people and wildlife;
- Mine development options 1 and 2 would also be expected to have some impact on Fish Lake; and
- Potential future expansion of the open pit, to access the entire gold and copper reserve, would result in the eventual loss of Fish Lake, as the ore body runs towards the lake (BC EAO, 2009 p. 143).

## **5.8. A Summary of BC EAO's Conclusions**

After considering all the relevant issues set out above with regard to the proponent's mitigation measures and commitments, the BC EAO concluded that *the Project would not result in significant adverse effects, with the exception of the loss of Fish Lake and Little Fish Lake* (BC EAO, 2009 p. 143). The BC EAO concluded that the Project would have a one-time and permanent significant adverse effect on fish and fish habitat through the loss of Fish Lake and Little Fish Lake; however, this effect should be considered justifiable because the proponent comprehensively addresses the loss of Fish Lake and related habitat through a proposed compensation plan (BC EAO, 2009 p. 145). In addressing the provincial MOE and MEMPR, the BC EAO also set out a number of facts to aid their decision on the issuance of an EA certificate under the *BC EAA* (2002) (appendix table D.21). The BC EAO specifically noted that the Project would have economic benefits and would positively contribute to community development.

In making its final conclusions, the BC EAO considered:

- the information contained in the proponent's Application;
- the information retrieved from participating First Nations, government agencies, and the public;
- the proponent's efforts at consultation with First Nations, government agencies, and the public; and
- the proponent's commitments, mitigation measures, and pledge to ongoing consultation (BC EAO, 2009 p. 146)

Based on these considerations, the BC EAO was of the opinion that:

- *“the EA process has adequately identified and assessed the potential significant adverse environmental, economic, social, heritage and health effects of the Project,”*
- *“consultation with First Nations, government agencies, and the public, and the distribution of information about the Project have been adequately carried out by the Proponent and that efforts to consult with First Nations would continue on an ongoing basis”; and*
- *“the provincial Crown has fulfilled its obligations for consultation and accommodation to First Nations relating to the issuance of an EA Certificate for the Project”* (BC EAO, 2009 p. 147).

**Table 5-3: A Summary BC EAO's Conclusions**

<b>Environmental Effects</b>	
<b><i>Metal Leaching/ Acid Rock Drainage</i></b>	No significant adverse effects with metal leaching and acid rock drainage (p. 37).
<b><i>Hydrology and Hydrogeology</i></b>	No significant adverse effects on hydrology and hydrogeology (p. 42).
<b><i>Water Quality and Aquatic Ecology</i></b>	No significant adverse effects on water quality and aquatic ecology (p. 51).
<b><i>Fish and Fish Habitat</i></b>	A significant adverse effect on fish and fish habitat (p. 61).
<b><i>Air Quality</i></b>	No significant adverse effect on air quality (p. 64).
<b><i>Vegetation</i></b>	No significant adverse effect on vegetation (p. 71).
<b><i>Terrain and Soils</i></b>	No significant adverse effects on terrain and soils (p. 75).
<b><i>Wildlife</i></b>	No significant adverse effect on wildlife (p. 84).
<b>Economic Effects</b>	
<b><i>Economic Issues</i></b>	No significant adverse effects on local, regional, and provincial economies (p. 91).
<b>Heritage Effects</b>	
<b><i>Archaeological and Heritage Resources</i></b>	No significant adverse effects on archaeological and heritage resources (p. 98).
<b>Social Effects</b>	
<b><i>Social Issues</i></b>	No significant adverse social effects (p. 94).
<b>Health Effects</b>	
<b><i>Human Health</i></b>	No significant adverse effects on human health (p. 101).
<b><i>Healthy Living</i></b>	No significant adverse effects on healthy living (p. 103).

Source: BC EAO, 2009

## **Chapter 6.**

# **Summary of the Federal Environmental Assessment Report for the Project**

### **6.1. Chapter Overview**

This chapter features a narrative summary of the federal EA process, which was conducted by a review panel established by the federal Minister of the Environment. The summary contains three components: (1) an overview of the EA trigger, its participants, and its development; (2) an overview of assessment component evaluations; and (3) a summary of the Panel's conclusions and recommendations.

### **6.2. The Federal EA Trigger**

In accordance with the *CEA Act* (1992), an EA needed to be completed because the Project required authorization from Fisheries and Oceans Canada under the *Fisheries Act* (1985); a licence from Natural Resources Canada under the *Explosives Act* (1985); and a permit from Transport Canada under the *Navigable Waters Protection Act* (1985) (CEAA, 2010). Given these triggers, in January 2009 the federal Minister of Environment announced that the Project would undergo an EA by a three-member federal review panel.

### **6.3. Participants in the Federal EA**

Several groups participated in the federal review process, including provincial and federal government departments, local governments, First Nations, non-governmental organizations, local businesses, and members of the public (CEAA, 2010). Contribution from the participating groups ranged from submitting written comments to

the Panel, to directly partaking in the review of the proponent's EIS, to presenting before the Panel during the public hearings (CEAA, 2010).

### **6.3.1. Federal Participation and The Panel**

The federal government departments that participated in the EA included Fisheries and Oceans Canada (DFO), Transport Canada (TC), Natural Resources Canada (NRCan), Environment Canada (EC), and Health Canada (HC). The first three departments were particularly important because they participated in the review process as responsible authorities (RAs) (appendix table E.1). The RAs referred the Project to the federal Minister of the Environment for referral to a review panel, as per subsection 21(2)(b) of the *CEA Act* (1992) (CEAA, 2010). In consultation with the RAs, the Minister of the Environment also fixed the Panel's *Terms of Reference*, which defined the specific mandate and scope for the EA of the Project.

The Panel's mandate included an assessment of the changes that the Project may cause on the environment, as well as an assessment of the effects that such changes may have on: health and socio-economic conditions; physical and cultural heritage; and the current use of lands and resources for traditional purposes by Aboriginal persons (CEAA, 2010). The Panel evaluated these facts by considering whether potential effects would be adverse, whether after implementation of mitigation measures the potential adverse effects would be significant, and whether potential significant adverse effects were actually likely to occur (CEAA, 2010) (appendix table E.2).

Unlike the BC EAO, the Panel's mandate did not include determining whether any likely significant adverse effects after mitigation were justifiable. Instead, the Panel was instructed to simply provide information that would assist in making this determination. As the Panel's *Terms of Reference* stated: "should the Panel conclude, taking into account applicable mitigation measures, that the Project is likely to cause a significant adverse environmental effect, it shall include in its report information to assist decision makers with respect to the justifiability of any such effect" (CEAA, 2010 p. 26).

Finally, the Panel's had the mandate to invite information from First Nations related to the potential adverse impacts or infringements that the Project may have on potential or established Aboriginal rights or title. Section 16.1 of the *CEA Act* (1992) states that community knowledge and Aboriginal traditional knowledge may be considered in conducting an EA; therefore, the Project's potential impacts on local First Nations clearly fell within the Panel's mandate to assess the environmental effects (CEAA, 2010). However, the Panel did not have the mandate to make determinations as to the validity and strength of these rights, the scope of the Crown's duty to consult First Nations, and whether Canada had met its duty to consult and accommodate the rights recognised and affirmed by section 35 of the *Constitution Act* (1982) (CEAA, 2010).

### **6.3.2. First Nations Participation in the Federal EA**

Throughout the federal EA process, the most actively engaged First Nations participants were the Esketemc (Alkali Lake Band) and the Tsilhqot'in National Government [representing the Esdilagh (Alexandria Band), Yunesit'in (Stone Band), Tl'esqox (Toosey Band), Xeni Gwet'in (Nemiah Band), Tl'etinqox (Anaham Band), and Tsi Del Del (Redstone Band)] (CEAA, 2010) (appendix table E.3). Both First Nations actively participated in the various hearing sessions, commented to the Panel at various stages of the EIS review, examined the draft *Terms of Reference*, and reviewed information regarding the possible cumulative effects of an extended mine life scenario.

### **6.3.3. Provincial Participation in the Federal EA**

The provincial government ministries that participated in the federal EA process included; the Ministry of Environment (MOE); the Ministry of Energy, Mines and Petroleum Resources (MEMPR); and the Ministry of Tourism, Culture and the Arts (MTCA). These ministries participated in the review of the proponent's EIS and contributed comments during the consultation on the sufficiency of the information to proceed to the public hearings (CEAA, 2010). Specifically, the Panel significantly benefited from the provincial Working Group, which was established by the BC EAO. The Working Group, comprised of provincial and federal officials, local governments, and First Nations, commented on the documentation prepared by the BC EAO and

proponent, and provided technical and First Nation’s input throughout the review process.

## 6.4. The Development of the Federal EA

The federal EA process was informally initiated on February 19, 2007, after the RAs concluded that the Project had the potential to cause significant adverse environmental and social effects. It was at this time that Fisheries and Oceans Canada, Transport Canada, and Natural Resources Canada initially referred the Project to the Minister of the Environment for referral to a review panel [subsection 21(2)(b) of the *CEA Act*, 1992](CEAA, 2010). A summary of the federal EA process is provided in table 6.1, while a detailed description is provided in appendix table E.4.

**Table 6-1: Steps of the Federal EA Process**

Date	Stages of the Provincial EA Review
2006	<ul style="list-style-type: none"> <li>• Taseko activated the federal EA process, with DFO, TC and NRCan acting as RAs.</li> </ul>
February 19, 2007	<ul style="list-style-type: none"> <li>• The RAs referred the Project to the Minister of the Environment for referral to a review panel as per subsection 21(2)(b) of the <i>CEA Act</i> (1992).</li> </ul>
October 2008	<ul style="list-style-type: none"> <li>• The CEEA issued a draft <i>Terms of Reference</i> for establishing a federal review panel for the Project.</li> <li>• The CEEA and the BC EAO released joint draft EIS guidelines for the Project.</li> </ul>
March 16, 2009	<ul style="list-style-type: none"> <li>• Taseko submitted its final EIS to the Panel and the BC EAO.</li> </ul>
February 2, 2010	<ul style="list-style-type: none"> <li>• The Panel announced that the EIS, supplemented with the additional information submitted by Taseko, was sufficient to proceed to the public hearing.</li> </ul>
March 22 to May 3, 2010	<ul style="list-style-type: none"> <li>• The Panel held public hearing sessions in the Cariboo- Chilcotin area.</li> </ul>
July 2, 2010	<ul style="list-style-type: none"> <li>• The Panel submitted its report containing its conclusions and recommendations with respect to the Project to the Ministers of Environment, DFO, TC, and NRCan.</li> </ul>

Source: CEAA, 2010

## 6.5. The Federal Evaluation of the Assessment Components

As noted earlier, the Panel’s mandate required it to consider and provide conclusions on the significance of the Project’s effects on several assessment components (Table 6.2). Those wishing more detail on the specific facts that the Panel

considered for each of the assessment components should consult appendix E.5-E.23. The Panel's final conclusions are summarized in table 6.3.

**Table 6-2: A Summary of the Assessment Components Considered in the Panel's EA.**

Effects Considered	Assessment Components
<i>Environmental</i>	Surface Water and Groundwater; Fish and Fish Habitat; Terrain and Soils; Vegetation; Wildlife and Wildlife Habitat; Atmospheric Environment, Noise; Archeology; and Cumulative Effects.
<i>Socio-Economic</i>	Land and Resource Uses; Navigation; Traffic; and Human Health.
<i>First Nations</i>	Use of Lands and Resources for Traditional Purposes, and Aboriginal Rights and Title
<i>Other</i>	Capacity of Renewable Resources; Biodiversity; Effects of the Environment on the Project; Measures to Enhance any Beneficial Environmental Effects; and Accidents/ Malfunctions
<i>Need, Purposed, Alternatives</i>	Purpose and Need of the Project; Alternatives to the Project; and, Alternatives Means of Carrying Out the Project

Source: CEAA, 2010

### **6.5.1. Need For, Purpose, and Assessment of Alternatives for the Project**

#### ***Need for, Purpose, and Alternatives to the Project***

According to the proponent, the need and purpose of the Project is to utilize proven mineral reserves to create value and opportunity for the people of BC and Canada, and for the shareholders of Taseko (Taseko, 2011). In their original assessment of the Project, *the Panel concluded that the proponent was aware of the many variables that would affect the Project's viability, and that the proponent sufficiently outlined the purpose and need for the Project for the purpose of the EA* (CEAA, 2010 p. 34).

The proponent also considered alternatives to the Project that involved an underground mine, and a combination open pit and underground mine. The proponent also considered alternative selection of the transmission line corridor. Based on the information provided in the EIS, *the Panel concluded that the proponent's decision that an open pit mine was the only feasible alternative to mine ore of this grade was reasonable* (CEAA, 2010 p. 36) (recommendation 1: Table E.24).

## ***Alternative Means of Carrying Out the Project***

Alternative means of carrying out a project refers to the various technically and economically feasible means for implementing a Project, and is different from considering alternatives to the project. As noted by the CEAA, this includes consideration of alternative locations, routes and methods of development, implementation, and mitigation techniques (CEAA, 2010). Given that the *CEA Act* (1992) requires the “examination of alternative means of carrying out the project that are economically feasible”, the Panel considered the proponent’s section of preferred alternatives to be consistent with the requirements of the *Act*. Therefore, *the Panel concluded that the proponent’s rationale for selecting its preferred alternative for the mine development plan was reasonable for the purpose of the EA* (CEAA, 2010 p. 51).

### **6.5.2. Environmental Effects**

For its assessment of the Project’s environmental effects, the Panel focused on areas where uncertainty in the proponent’s conclusions or proposed mitigation existed, areas where disagreement between experts occurred, and areas where relevant new information was received during the course of the review (CEAA, 2010). In addition, participants provided specific comments on several issues they considered important, such as the extent of the potential effects, the importance of affected ecosystem components, and the need for consideration of legislative requirements (CEAA, 2010).

#### ***Surface Water***

The Panel identified several issues relating to surface water including: changes to streamflow and watershed areas; changes to the annual water balance; the role of acid rock drainage (ARD) and metal leaching (ML) in developing the water quality model; receiving water quality and treatment methods; and, the effects on fish health in the Taseko River (appendix table E.5). The Panel came to three conclusions regarding the Project’s effect on surface water.

First, *the Panel concluded that the Project would not result in a significant adverse effect on surface water hydrology in the Project area* (CEAA, 2010 p. 68). This conclusion was reached because the Panel considered flow changes to be low in

magnitude and reversible at closure. The Panel recommended mitigative actions with respect to increased flow levels in Beece Creek (recommendation 2: Table E.24).

Second, *the Panel concluded that the Project would not result in a significant adverse effect on surface water quality* (CEAA, 2010 p. 69). Despite the uncertainty regarding ARD and the extent of ML from the mine waste rock, the Panel was of the view that the proponent was committed to mitigation, monitoring, and adaptive management principles. In addition, the Panel noted that the proponent had the means to utilize appropriate technology that could effectively treat the discharge to meet regulatory requirements and minimize effects on water quality and on fish health (CEAA, 2010).

Last, *the Panel concluded that the Project would not result in a significant adverse effect on fish health in the Taseko River* (CEAA, 2010 p. 69). The Panel noted, however, that First Nations would be apprehensive about fish consumption due to their perception of contamination.

### **Groundwater**

The Panel identified two key issues that related to quality and quantity of groundwater. These included changes to groundwater flow and the effects of seepage through the west embankment of the TSF (CEAA, 2010) (appendix table E.6). The Panel concluded that *seepage from the TSF would not result in a significant adverse effect on water quality in Big Onion Lake* (CEAA, 2010 p. 77). The Panel noted that the proponent had the means to collect hydrogeological data, incorporate it into a seepage collection system that has been shown to be an appropriate method for similar undertakings, and apply additional mitigation measures if needed (CEAA, 2010) (Recommendation 3: Table E.24). With respect to the changes in groundwater flow, the Panel noted that changes would be limited in geographic extent, reversible, and not result in adverse environmental effects in and of themselves (CEAA, 2010).

### **Fish and Fish Habitat**

The Panel identified several issues of importance related to the Project's effect on fish and fish habitat. This included an assessment of the feasibility and potential for

the proponent's proposed fish compensation plan to compensate for those effects. Key issues identified by the Panel include: permanent alteration and loss of fish and fish habitat in the Fish Creek watershed; impacts on recreational and sport fishing opportunities; and, the proposed fish and fish habitat compensation plan (appendix table E.6). The Panel concluded that the Project's effects on fish and fish habitat would be high magnitude, long-term, irreversible, and include loss of an area that is of value to several First Nations groups (CEAA, 2010). Given this view, *the Panel concluded that the Project would result in a significant adverse effect on fish and fish habitat in the Fish Creek watershed* (CEAA, 2010 p.98). Regarding the feasibility of the fish compensation plan, the Panel considered all the comments received and concluded that the plan posed an unacceptable level of risk. Some of the Panel's main concerns included:

- The compensation plan would not meet DFO's No Net Loss policy;
- There has been no experience with re-creating ecosystems in which spawning and rearing channels all function together on a self-sustaining basis;
- There was high uncertainty regarding Prosperity Lake's capacity to support the proposed fishery, as it would have a lower proportion of littoral habitat than Fish Lake, which was likely an important contributor to its high productivity; and,
- The proposed fish and fish habitat compensation works could become a burden to future generations, as these works would likely require ongoing maintenance and re-stocking of fish on a continuing basis for an undetermined period. The proponent would only be required to operate Prosperity Lake and be responsible for the measures listed in the EIS for the 'life of mine', defined as "the time period in which the mine is operational" (CEAA, 2010).

The Panel did not offer any recommendations that could mitigate the significant adverse effects of the Project on fish and fish habitat in the Fish Creek watershed, and noted that the proponent would not be able to modify the proposed compensation plan such that it would be acceptable to all parties (CEAA, 2010).

### ***Terrain and Soils***

The Panel identified two key issues relating to terrain and soils, which included terrain instability and related environmental effects (CEAA, 2010) (appendix table E.8). *The Panel concluded that the Project would not result in a significant adverse effect on terrain and soils* (CEAA, 2010 p. 100). The Panel noted that most of the effects were

reversible over time, extended over a relatively narrow geographic area, and with the prescribed mitigation measures would not lead to detrimental effects from soil mixing, compaction, rutting, and erosion (CEAA, 2010) (Recommendation 4, 5 and 6: Table E.24).

## **Vegetation**

Participants identified several concerns related to the Project's effect on vegetation, including: loss of old growth forest habitats; effects of invasive plants on grasslands; loss of wetland and riparian habitats; and, loss of plants of importance to First Nations (CEAA, 2010). For the environmental effects section, the Panel considered issues related to old growth forest and grasslands ecosystem, while their discussion on wetlands, riparian habitats, and First Nations issues was reserved for the latter sections of their report (appendix table E.9).

The Panel *concluded that the Project would not result in a significant adverse effect on old growth forest* (CEAA, 2010 p. 104). The Panel noted that total loss of old growth forest would be small in magnitude at both the mine site and along the transmission line, and that there was no assurance that the existing pine leading stands would survive the destruction associated with the current mountain pine beetle infestation (CEAA, 2010). Second, *the Panel concluded that the Project would not result in a significant adverse effect on grassland ecosystems* (CEAA, 2010 p. 104). The Panel noted that, with the proposed mitigation and environmental management measures, the residual effect on grassland ecosystems would be relatively short term, small in areal extent, and overall moderate (CEAA, 2010).

## **Wildlife and Wildlife Habitat**

The Panel focused its attention on four key issues related to the Project's effect on wildlife and wildlife habitat. These included: the Project's effect on grizzly bears; mule deer migration and ungulate winter habitat; the increased accessibility to the land; and, the wildlife habitat compensation plan (appendix table E.10).

The Panel *concluded that the Project would not result in a significant adverse effect on mule deer and moose and their habitat* (CEAA, 2010 p. 116) (Recommendation

7, 8 and 9: Table E.24). The Panel noted that the mine site was not considered to be a regionally important mule deer or moose winter habitat, and given its location, the mule deer would likely disperse around the mine site during migration. In addition, the Panel was of the opinion the effects of the transmission line corridor on mule deer and moose would be relatively small (less than 1%), and therefore not significant. Second, the Panel found that the Project would result in adverse impacts to wetlands and riparian habitat; however, was of the opinion that a wildlife compensation plan would mitigate the Project's adverse effects on wildlife, migratory birds, and species at risk (CEAA, 2010). Specifically, *the Panel concluded that provided a wildlife habitat compensation plan is developed and implemented, the Project would not result in a significant adverse effect on migratory birds and their habitat* (CEAA, 2010 p.117) (Recommendation 10: Table E.24).

### ***Atmospheric Environment***

The Panel identified three key issues related to the Project's effect on the atmospheric environment, which included criteria air contaminants (CAC), greenhouse gas emissions, and light pollution (appendix table E.11).

The Panel *concluded that emissions of particulate matter from the Project would not result in significant adverse effects* (CEAA, 2010 p. 121). The Panel noted that, with the exception of adverse effects on Taseko Lake Outfitters, the Project's effects on the atmospheric environment would be relatively minor, geographically limited, of limited duration, and reversible over time (CEAA, 2010). Regarding greenhouse gas emissions, *the Panel concluded that the contribution of greenhouse gases from the Project would not result in a significant adverse effect*, as the Project's total contribution to this category would be very small compared to the national and provincial emission targets (CEAA, 2010 p. 121). The Panel also noted that the proponent had the capacity to apply best management and mitigation practices to minimize greenhouse gas emissions (CEAA, 2010). Lastly, *the Panel concluded that light pollution from the Project would not result in a significant adverse effect* (CEAA, 2010 p. 121). The Panel noted that facts such as distance and topography would minimize the effects of light pollution on the noted receptors (CEAA, 2010).

## **Noise**

The Panel considered Project-related noise effects on nearby human receptors and on wildlife (appendix table E.12). *The Panel concluded that Project-related noise would not result in a significant adverse effect*, as the effects on the acoustic environment would be relatively minor, geographically limited, of medium term duration, and reversible over time (CEAA, 2010 p. 123). The Panel noted that there was some uncertainty regarding Project-related noise effects on receptors in the immediate area of the mine site, such as Taseko Lake Lodge.

## **Archeology**

In the environmental effects section of the EA, the Panel addressed the tangible Project-related effects on archeology (e.g. archeological finds) (appendix table E.13). Intangible and cultural issues (e.g. the values of ancestral artifacts) are addressed in the *First Nations issues* section. The Panel recognised that if the Project were to proceed, artifacts would need to be excavated and preserved, either at a facility operated by the Tsilhqot'in or at the Royal British Columbia Museum in Victoria (CEAA, 2010). The Panel noted that artifacts could be collected and preserved in an acceptable manner, if care was taken during construction and if First Nations were involved in the process (CEAA, 2010). Should the Project proceed, *the Panel concluded that, provided the recommendation identified by the Panel is implemented* (Recommendation 11: Table E.24), *the Project would not result in a significant adverse effect on physical heritage and sites of archaeological importance* (CEAA, 2010 p 128).

## **Cumulative Effects**

In accordance with Section 16(1)(a) of the *CEA Act* (1992), the Panel considered cumulative environmental effects (appendix table E.14). The Panel's main directive was to assess the cumulative environmental effects to vegetation, wildlife, surface and groundwater and fish and fish habitat that could arise from the effects of the Project in combination with the effects of past, present and reasonably foreseeable future forestry harvesting activities in response to the mountain pine beetle infestation and the possible mine life extension.

The Panel *concluded that the Project would not result in a significant adverse cumulative effect on vegetation* (CEAA, 2010 p. 139). With respect to the loss of pine and non-pine forests, the Panel considered the overall reduction of non-pine forest to be relatively small, and was confident in the proponent's conclusion that old growth pine in the Project area would be lost due to the mountain pine beetle infestation, regardless of Project activities (CEAA, 2010). Additionally, the Panel recognised that the Project would further reduce the available area for First Nations to gather plants for food, medicine, and spiritual uses; however, they noted that other areas do remain for this purpose, and that on its own the loss of these plants for traditional uses is not significant (CEAA, 2010).

Regarding the Project's cumulative effects on wildlife, the *Panel concluded that the Project, together with past, present and reasonably foreseeable future forestry activities in the area, would result in a significant adverse cumulative effect on the South Chilcotin grizzly bear population but would not result in a significant adverse cumulative effect on deer, moose, and other wildlife* (CEAA, 2010 p.141). With respect to mule deer and moose, the Panel agreed with the proponent's assessment that cumulative effects of the Project together with past, present and reasonably foreseeable future forestry harvesting activities would be low and insignificant, due to presently sustainable population numbers. The grizzly bear populations conversely were stated to be approaching endangered levels, and the Panel was of the opinion that the Project would contribute to a further decline of the population (CEAA, 2010). The Panel noted that intensifying forestry activities in combination with Project related activities, which include increased road traffic and habitat fragmentation, would result in high magnitude, long-term, and significant effects on the sustainability of grizzly bear populations in the South Chilcotin region (CEAA, 2010)

With respect to cumulative effects on surface water and groundwater, *the Panel concluded that the Project, in combination with an extended mine life proposal, would not result in a significant adverse cumulative effect on surface water and groundwater* (CEAA, 2010 P.141). Regarding surface water and a mine life extension, the Panel was of the opinion that annual water requirements for the site would not change, that the concentration of contaminants would not change, and that the proponent would still have

the capacity to treat water to meet surface discharge requirements (CEAA, 2010). The Panel also noted that the proponent's proposed groundwater monitoring mitigation measures would allow for predicted groundwater flow and contaminant measures. This would allow sufficient time for corrective action to be taken if any problems arose and would also provide accurate data to enable a higher degree of confidence in the predicted effects on groundwater of a future mine life extension (CEAA, 2010).

Lastly, *the Panel concluded that the Project, in combination with an extended mine life proposal would further increase the likelihood of failure of the fish and fish habitat compensation plan and thus result in a significant adverse cumulative effect on fish and fish habitat* (CEAA, 2010 p.142). The Panel noted that a future mine life expansion would place further stress on the proposed fish habitat compensation works, as an increase in elevation of the TSF and additional construction of the enlarged embankments could adversely affect water quality, the survival possibility of fish populations in the lake, and proposed spawning channels (CEAA, 2010).

### **6.5.3. Socio-Economic Effects**

#### ***Land and Resource Uses***

The Panel identified four key issues related to the Project's effect on land and resource use, which include potential effects on the following: forestry; agriculture and ranching; hunting and trapping; and, recreation and tourism activities (appendix table E.15). The Panel *concluded that the Project would not result in a significant adverse effect on the forest industry* (CEAA, 2010 p.152) (Recommendation 12: Table E.24). The Panel noted that the Project's effect on the forestry industry would be relatively insignificant, as a relatively small area would become unavailable for future forestry practices. The Panel added that some of this area would be in a "no-harvest" zone, which normally restricts harvesting practices by the forest industry. The Panel specifically noted that the Project's transmission line corridor would become one of the largest clear cuts within the Esketemc Community Forest. This is an area that was reported to be important to the Esketemc for its sustainable forestry potential and wildlife and plant habitat (CEAA, 2010). The Panel was of the view that efforts should be made to avoid this area given its importance to the community.

The Panel's second conclusion was that *the proposed mine site would result in a locally significant adverse effect on the users of the meadows within the Fish Creek watershed due to the loss of grazing lands* (CEAA, 2010 p.153). The Panel recognised that the upland meadows, which would be lost within the Project's footprint, were heavily used by owners of horses and livestock under either formal grazing leases or as traditionally used areas (CEAA, 2010). As the proponent proposed no mitigation measures to offset these losses, the Panel was of the view that it would be unlikely that these grazing areas could be replaced. This would have a high magnitude and irreversible effect on local users (CEAA, 2010).

Third, *the Panel concluded that the Project would not result in a significant adverse effect on ranching and grazing along the transmission line corridor* (CEAA, 2010 p.153). The Panel was of the view that the proponent had the intention and capacity to minimize the Project's effects on ranching and grazing along the transmission line. The Panel concluded that *the Project would not result in a significant adverse effect on hunting in the region* (CEAA, 2010 p.154). The Panel noted that the Project would have a moderate long-term adverse effect on hunting by non-residential and residential hunters. They cited the main negative effects to be the loss of buffer areas for hunting activity, the disturbance of animal movements and productivity, and the potential for increased hunting pressure by employees and contractors (CEAA, 2010). The Panel justified their main conclusion because the mine footprint would only remove a relatively small area from hunting use.

The Panel's fourth conclusion was that *the Project would not result in a significant adverse effect on trapping in the region, but would result in a significant adverse effect on the Nemiah Band Sonny Lulua trap line that would be most affected by the mine site footprint* (CEAA, 2010 p. 154). Even though the Project would overlap several existing trapline areas, the Panel was of the understanding that little commercial trapping activity had been taking place in recent years because of low fur prices (CEAA, 2010). The Nemiah Band trap line was perceived to be important to several First Nations communities because of its high harvest levels, its value for trappers, and its traditional importance. As it was noted that the proponent did not fully assess the value

and productivity of this trap line, the Panel was of the view that it would be the most significantly and adversely affected by the Project.

The Panel's final conclusion was that *the Project would not result in a significant adverse effect on tourism and recreation in the region, but would result in a significant adverse effect on the Taseko Lake Outfitters tourism business* (CEAA, 2010 p.155) (Recommendation 13 and 14: Table E.24). The Panel heard that the Project would have a direct effect on public recreation and tourism due to the direct loss of land (Fish Lake, Little Fish Lake, Fish Creek) and the visual and noise pollution of the mine and its infrastructure; however, it was also noted that these effects would occur in an area with low tourist demand. Therefore, the Panel was of the view that, in the region as a whole, tourism would not be adversely affected. The Panel did find that the effects of the Project on Taseko Lake Outfitters would be high in magnitude and long-term. The business's proximity to the mine, its reliance on an exclusive wilderness setting, and the lack of compensation and mitigation measures put forth by the proponent would likely force the company to close.

### ***Navigation***

The key issue related to navigation was the direct effect that the Project would have on water bodies and waterways (appendix table E.16). Given these relevant facts, *the Panel concluded that the Project would result in a significant adverse effect on navigation* (CEAA, 2010 p.158) (recommendations 15, 16, and 17: Table E.24). For its assessment the Panel predominantly used the information provided by Transport Canada, which under the *Navigable Waters Protection Act* (1985), was required to provide specific information of the potential effects of the Project on navigable waters. Transport Canada indicated that the Project would interfere with navigation, and that there was a lack of suitable mitigation to compensate for these losses. The Panel concluded that the Project's effects on navigation in the absence of effective mitigation measures would be high magnitude and irreversible, and agreed with Transport Canada's conclusion that its effect on navigation would be significant and adverse.

## **Traffic**

The Panel identified the increased risk of traffic accidents resulting from the Project as the key issue relating to traffic (appendix table E.17). After considering the relevant facts *the Panel concluded that increased traffic from the Project would not result in a significant adverse effect* (CEAA, 2010 p. 161). While traffic patterns and road use was expected to intensify, the Panel was of the view that the proponent had the capacity to implement mitigation measures, which would involve strict enforcement of speed limits and radio monitoring of truck traffic.

## **Human Health**

The Panel identified two key issues related to the Project's effect on health. They focused on physical or human health and on health and social services (appendix table E.18). The Panel concluded that *the Project would not result in a significant adverse effect on human health from consuming fish, moose meat, and drinking water* (CEAA, 2010 p. 166) (Recommendation 18: Table E.24). The Panel noted that there are no downstream sources of drinking water in the vicinity of the mine and that drinking water in the area would not be negatively affected by the Project. With respect to consumption of fish and meat, the Panel was confident that the proponent would undertake a traditional foods consumption survey to address concerns raised by First Nations and Health Canada.

The Panel also concluded that *the Project would not result in a significant adverse effect on community health services* (CEAA, 2010 p.166). The Panel was aware that several Project induced changes in the environment would result in a change in social service demands; most notably the loss of the Fish Lake and Nabas areas for harvesting, which would result in the reduction in the availability of traditional foods and an increase in demand on community aid services. Nevertheless, the Panel was of the opinion that the increased pressures on community services would be counterbalanced by the surplus of service availability, which emerged during the population declines that have accompanied the decline in the region's forest industry (CEAA, 2010).

#### **6.5.4. First Nations Issues**

The Panel's mandate was to conduct an assessment of the environmental effects of the Project, which also includes a specific analysis of the effects that any environmental change may cause on the cultural heritage and the current use of lands and resources for traditional purposes by Aboriginal peoples (CEAA, 2010). The Panel's mandate also required an assessment of the manner in which the Project might adversely affect potential or established Aboriginal rights or title (CEAA, 2010). This section will specifically address the Panel's assessment of these First Nation's issues and, in a similar manner as the previous sections, provide an overview of how the Panel reached its conclusions and recommendations.

##### ***Current Use of Lands and Resources for Traditional Purposes***

The Panel identified several issues of importance related to the Project's effects on the current use of lands and resources for traditional purposes and on cultural heritage resources (appendix table E.19). For this topic, community-hearing sessions were a key source of information for the Panel. The Panel specifically focused its assessment on the Project's potential effect on current use practices, fishing, hunting and trapping, and plant gathering, by the Tsilhqot'in and Secwepemc Nations.

The Panel came to two distinct conclusions. First, *the Panel concluded that the Project would have a significant adverse effect on the Tsilhqot'in Nation regarding their current use of lands and resources for traditional purposes and on cultural heritage resources* (CEAA, 2010 p. 203). The Panel determined that the loss of the Fish Lake and Nabas areas for current use activities, ceremonies, teaching, and cultural and spiritual practices would have a long-term, high magnitude and irreversible effect on the Tsilhqot'in (CEAA, 2010). The Panel noted that, given the substantial value of these areas to the Tsilhqot'in, it was not able to provide any recommendations that would mitigate the significant adverse effects of the Project, should it be allowed to proceed.

Second, the Panel concluded that *the Project would not result in significant adverse effects on the Secwepemc Nation's current use of land and resources for traditional purposes and on cultural heritage* (CEAA, 2010 p. 204) (Recommendation 19: Table E.24). The Panel noted that the Secwepemc people expressed discontentment

towards the proposed transmission line corridor, as it may affect their ability to continue their current use practices due to increased access, loss of cultural connectivity with the land, and direct impacts to wildlife (CEAA, 2010). However, at the time of the hearings the location of the centerline for the transmission line right-of-way had not been selected, and the Panel was of the opinion that the potential adverse effects from the transmission line could be minimized. The Panel trusted that the proponent has the intent and capacity to implement its proposed mitigation measures and work with the Secwepemc Nation to implementing those measures. This would ensure that their current use activities would be considered when installing the transmission line groundwork.

### ***Aboriginal Rights and Title***

For its assessment of the Project's effect on potential or established Aboriginal rights or title, the Panel considered three categories of Aboriginal rights: "established" rights, which are rights that have been proven in court; "uncontested" rights, which are rights that have not been challenged by the government; and "asserted" or "potential" rights, which are rights that have not been proven in court (CEAA, 2010) (appendix table E.20). First Nations members submitted information related to the nature and scope of established rights and title, and provided specific information on their current use of lands and resources for traditional purposes. The Panel believed that there was a direct relationship between current use of lands and resources for traditional purposes and potential or established Aboriginal rights and title. In addition, the Panel was also referred to several court cases, which provided additional context on the issue of Aboriginal rights and title (court cases are described in Section 3.4). The Tsilhqot'in and Secwepemc Nations provided a majority of the information.

The Panel concluded that *the Project would result in a significant adverse effect on established Tsilhqot'in Aboriginal rights as defined in the William case* (CEAA, 2010 p. 218). The Panel noted that, given the permanent alteration of the mine site area, the Tsilhqot'in would no longer be able to exercise their rights, even after reclamation. In addition, they believed that the effect of the Project on the established Tsilhqot'in Aboriginal rights would be irreversible. The Panel was also of the view that the proponent's compensation measures were insufficient.

Second, the Panel concluded that *the Project would result in a significant adverse effect on the potential Tsilhqot'in Aboriginal right to fish in Fish Lake* (CEAA, 2010 p. 218). The Panel noted that the right to fish could no longer be exercised, as the lake would be destroyed. They added that Prosperity Lake would not be an adequate replacement and that the Tsilhqot'in would be unlikely to fish there due to their likely perception of contamination. The Tsilhqot'in also have potential Aboriginal title to the Fish Lake area; therefore, the Panel also considered and assessed the Project's effect on the potential Aboriginal title. The Panel concluded that *the Project would result in a significant adverse effect on Tsilhqot'in Aboriginal title that could be granted* (CEAA, 2010 p. 219). The Panel noted that the Project would permanently alter the Fish Lake area, displace the Tsilhqot'in from their traditional territory, potentially result in the loss of evidence of continuous occupation, and therefore affect their claim to Aboriginal title (CEAA, 2010).

With respect to the Secwepemc Nation, the Panel came to two conclusions. First, *the Panel concluded that, provided the planned mitigation to avoid construction in sensitive locations would be applied in cooperation with the Secwepemc, the Project would not result in a significant adverse effect on established or potential Secwepemc rights* (CEAA, 2010 p. 219) The Panel noted that the Project's transmission line would have negative effects on Secwepemc Aboriginal rights to hunt and harvest plants, due to increased access, loss of cultural connectivity with the land, and direct impacts to wildlife. The Panel added that these effects may be long-term and potentially irreversible. However, as the centerline for the transmission line was not chosen at the time of the public hearing, the Panel was of the view that potential effects of the transmission line could still be minimized. The Panel was of the opinion that significant adverse effects to the Secwepemc Nations' Aboriginal rights could be minimized if, the proponent worked with the Secwepemc in implementing concerted mitigation measures, and the proponent considered placing the transmission line away from sensitive locations where Aboriginal rights were practiced (CEAA, 2010)

The Panel's final conclusion was that, depending on the size of the land settlement through the treaty process, *the Project may result in a significant adverse effect on any such title that could be granted to the Alkali Lake Band and the Canoe*

*Creek Band* (CEAA, 2010 p. 220). The treaty process has not yet reached the stage of land designation for the Alkali Lake and Canoe Creek Bands; therefore, it was difficult for the Panel to determine how the transmission line would affect their asserted traditional territories (CEAA, 2010). However, the Panel was aware that, depending on the size of the land settlement, the Project could have a significant adverse effect on title, as there was a potential for the loss of evidence regarding continued use of the land and historical resources, and a potential for reduction of available land for selection during the treaty process (CEAA, 2010).

### **6.5.5. Other Issues**

This section features the Panel's assessment of the additional facts that it was mandated to consider in accordance with the definition of "environmental effect".

#### ***Capacity of Renewable Resources***

The Panel concluded that the Project would have a significant adverse effect on fish and fish habitat and a significant adverse cumulative effect on the South Chilcotin grizzly bear population and fish and fish habitat (appendix table E.21) Therefore, it focused its assessment on the capacity of these two resources to meet the needs of present and future users. The Panel concluded that *the Project would result in the inability of the fisheries resource in the Fish Creek watershed and the South Chilcotin grizzly bear population to meet the needs of present and future generations* (CEAA, 2010 p.222). The Panel noted that there would be a likely increase in demand for lake fish for sustenance and that the fish and fish habitat compensation plan would not replace fish that would be lost. Additionally, the Panel noted that there was considerable uncertainty about the success and sustainability of the compensation plan itself. With respect to the grizzly bears, the Panel was of the view that the population would not likely be sustainable in the future due to the cumulative effects of the Project in combination with reasonably foreseeable future forestry activities. They determined that a further reduction in the population would mean that it may no longer be present for future generations to enjoy (CEAA, 2010).

## ***Biodiversity***

The CEEA's *Guide on Biodiversity and Environmental Assessment* describes biological diversity as "the variety of species, the genetic composition of species and communities, ecosystems and ecological structures, functions and processes at all levels." (CEAA-1, 2012). The Panel assessed the Project's effect on biodiversity by focusing on Fish Lake rainbow trout, the South Chilcotin grizzly bear population, and an endangered moss, *S. heterophyllum* (appendix table E.22).

The Panel concluded that *the Project would not result in a significant adverse cumulative effect on biodiversity* (CEAA, 2010 p. 225) (Recommendations 20: Table E.24). First, the Panel noted that even though the Project would have a significant adverse effect on the fish in Fish Lake, the overall effect on the biodiversity in the region would not be significantly adverse, as rainbow trout are a common species in the Cariboo- Chilcotin region (CEAA, 2010). Second, the Panel noted that, even though the Project would have a significant adverse cumulative effect on the South Chilcotin grizzly population, at a broader regional scale the total affected area would be relatively small. Further, the panel noted that the population of grizzly bears at the provincial level was more stable than the South Chilcotin population. Finally, the Panel was of the opinion that the proponent's mitigation measure for the endangered moss was an appropriate measure to protect the species.

## ***Effects of the Environment on the Project***

The Panel considered the proponent's five main natural environmental concerns that could have an effect on the Project, which include: climate change; extreme weather; forest fires; the potential amplifying effect of the mountain pine beetle; and seismic activity (appendix table E.23). The Panel was satisfied with the proponent's proposed mitigation measures and management plans for all five categories of environmental events. Therefore, the Panel concluded that the effects of the environment on the Project would not be significant (CEAA, 2010 p 228).

### ***Measures to Enhance any Beneficial Environmental Effects***

The proponent indicated that the fish and fish habitat compensation plan and the wildlife habitat compensation plan would not result in beneficial effects. The Panel concluded that the proponent's compensation plans were mitigation measures to offset negative effects of the Project, not enhance beneficial environmental effects. Therefore, *the Panel concluded that the proposed mitigation measures would not result in an enhancement of beneficial environmental effects (CEAA, 2010 p. 230)*

### ***Accidents and Malfunctions***

The Panel reviewed six types of accidents and malfunctions identified by the proponent: fuel spills; failures or major leakages from tailings or the reclaim pipeline; concentrate haul spills; road culvert failures; excessive water in the tailings storage facility; and loss of power to the tailings storage facility seepage recovery system (CEAA, 2010). Based on the information provided in the proponent's EIS, and the lack of concern raised by the participants, *the Panel concluded that the proposed mitigation measures, emergency plans and commitments to address the possibility of accidents and malfunctions were adequate (CEAA, 2010 p. 233) (Recommendations 21 and 22: Table E.24)*. The Panel specifically addressed the possibility of embankment failure, and was of the opinion that future emergency response planning for possible embankment failure was warranted.

### ***Environmental Management***

The Panel also reviewed the proponent's conceptual environmental management system. The purpose of the environmental management system was to: ensure continual improvement in sustainability; to establish communication between First Nations communities and regulatory agencies; and, to ensure that the commitments of the proponent regarding environmental management were implemented (CEAA, 2010). The Panel was of the opinion that the proponent's environmental management plans were consistent with good management practices to ensure that the effects of construction, operations, closure and decommissioning would be minimized, and that its commitments would be followed (CEAA, 2010). The Panel noted that an independent monitoring committee, consisting of government agencies, independent experts, First

Nation and, local non-First Nations members, would be the most appropriate means to independently review and monitor the Project's effects and implementation of mitigation measures (Recommendations 23 and 24: Table E.24).

## 6.6. A Summary of the Panel's Conclusions

In accordance with the *CEA Act* (1992), RAs could not exercise any duty or function that would permit the Projects to be carried out where a significant adverse environmental effect was found, unless these effects could be justified under the circumstances (CEAA, 2010). Therefore, the Panel also prepared a report to aid decision makers in reaching conclusions on whether the significant adverse effects of the Project are justified given the circumstances. The Panel itself did not reach any conclusions, or provide recommendations, on whether the significant adverse effects of the Project are justified given the circumstances. The Panel only presented information on: project alternatives; water quality, fish and fish habitat; wildlife; socio-economic effects; and, First Nations issues, in order to aid decision makers in deciding whether the significant adverse effects of the Project are justifiable

The Panel's overall conclusion was that *the Project would result in significant adverse environmental effects on fish and fish habitat, on navigation, on the current use of lands and resources for traditional purposes by First Nations and on cultural heritage, and on certain potential or established Aboriginal rights or title*. The Panel also concluded that *the Project, in combination with past, present and reasonably foreseeable future projects would result in a significant adverse cumulative effect on grizzly bears in the South Chilcotin region and on fish and fish habitat* (CEAA, 2010 p.ii).

In accordance with an additional mandate, the Panel also provided recommendations on the appropriate procedures for the management of environmental effects, should the Project proceed (appendix table E.24). These recommendations relate to the appropriate measures to mitigate potential adverse effects and assist in more effective consultation with First Nations (CEAA, 2010). The Panel noted that their recommendations, even if accepted, would not accommodate or eliminate the significant

loss that First Nations would experience if the Project were granted authorization and approval.

**Table 6-3: A Summary of the Panel’s Conclusions**

<b>Need, Purpose, and Assessment of Alternatives</b>	
<i>Need for, Purpose, and Alternatives to the Project</i>	<ul style="list-style-type: none"> <li>The proponent sufficiently outlined the purpose and need for the Project for the purpose of the EA and,</li> <li>The proponent’s decision that an open pit mine was the only feasible alternative to mine ore of this grade was reasonable.</li> </ul>
<i>Alternative Means to Carrying Out the Project</i>	<ul style="list-style-type: none"> <li>The proponent’s rationale for selecting its preferred alternative for the mine development plan was reasonable for the EA.</li> </ul>

<b>Environmental Effects</b>	
<i>Surface Water</i>	<ul style="list-style-type: none"> <li>No significant adverse effect on surface water hydrology in the Project area;</li> <li>No significant adverse effect on surface water quality; and</li> <li>No significant adverse effect on fish health in the Taseko River.</li> </ul>
<i>Groundwater</i>	<ul style="list-style-type: none"> <li>No significant adverse effect on water quality in Big Onion Lake.</li> </ul>
<i>Fish and Fish Habitat</i>	<ul style="list-style-type: none"> <li>A significant adverse effect on fish and fish habitat in the Fish Creek watershed;</li> </ul>
<i>Terrain and Soil</i>	<ul style="list-style-type: none"> <li>No significant adverse effect on terrain and soils.</li> </ul>
<i>Vegetation</i>	<ul style="list-style-type: none"> <li>No significant adverse effect on old growth forest, and</li> <li>No significant adverse effect on grassland ecosystems.</li> </ul>
<i>Wildlife and Wildlife Habitat</i>	<ul style="list-style-type: none"> <li>No significant adverse effect on mule deer and moose and their habitat, and</li> <li>Provided a wildlife habitat compensation plan is developed and implemented, no significant adverse effect on wildlife and its habitat.</li> </ul>
<i>Atmosphere</i>	<ul style="list-style-type: none"> <li>Emissions of particulate matter would not result in significant adverse effects;</li> <li>The contribution of greenhouse gases would not result in a significant adverse effect;</li> <li>Light pollution would not result in a significant adverse effect.</li> </ul>
<i>Noise</i>	<ul style="list-style-type: none"> <li>Project-related noise would not result in a significant adverse effect.</li> </ul>
<i>Archeology</i>	<ul style="list-style-type: none"> <li>Provided that the recommendation identified by the Panel is implemented, no significant adverse effect on archeological components.</li> </ul>
<i>Cumulative Effects</i>	<ul style="list-style-type: none"> <li>A significant adverse cumulative effect on vegetation;</li> </ul>
	<ul style="list-style-type: none"> <li>A significant adverse cumulative effect on the South Chilcotin grizzly bear population,</li> </ul>
	<ul style="list-style-type: none"> <li>No significant adverse cumulative effect on surface water and groundwater; and</li> </ul>
	<ul style="list-style-type: none"> <li>A significant adverse cumulative effect on fish and fish habitat in combination with an extended mine life proposal</li> </ul>

<b>Socio-Economic Effects</b>	
<i>Land and Resource Uses</i>	<ul style="list-style-type: none"> <li>No significant adverse effect on the forest industry;</li> </ul>
	<ul style="list-style-type: none"> <li>A locally significant adverse effect on the users of the meadows within the Fish Creek watershed due to the loss of grazing lands;</li> </ul>

	<ul style="list-style-type: none"> <li>No significant adverse effect on ranching and grazing along the transmission line corridor;</li> <li>No significant adverse effect on hunting in the region;</li> <li>A significant adverse effect on the Nemiah Band Sonny Lulua trap line.</li> <li>A significant adverse effect on the Taseko Lake Outfitters tourism business.</li> </ul>
<b>Navigation</b>	<ul style="list-style-type: none"> <li>A significant adverse effect on navigation.</li> </ul>
<b>Traffic</b>	<ul style="list-style-type: none"> <li>Increased traffic would not result in a significant adverse effect.</li> </ul>
<b>Human Health</b>	<ul style="list-style-type: none"> <li>No significant adverse effect on human health from consuming fish, moose meat, and drinking water, and</li> <li>No significant adverse effect on community health services.</li> </ul>

<b>First Nations Issues</b>	
<b>Current Use of Lands and Resources for Traditional Purposes</b>	<ul style="list-style-type: none"> <li>A significant adverse effect on the Tsilhqot'in Nation regarding their current use of lands and resources for traditional purposes and on cultural heritage resources, and</li> <li>No significant adverse effects on the Secwepemc Nation's current use of land and resources for traditional purposes.</li> </ul>
<b>Aboriginal Rights</b>	<ul style="list-style-type: none"> <li>A significant adverse effect on established Tsilhqot'in Aboriginal rights as defined in the William case,</li> <li>A significant adverse effect on the potential Tsilhqot'in Aboriginal right to fish.</li> </ul>
<b>Aboriginal Title</b>	<ul style="list-style-type: none"> <li>A significant adverse effect on Tsilhqot'in Aboriginal title that could be granted;</li> <li>No significant adverse effect on established or potential Secwepemc rights; and</li> <li>Depending on the size of the land settlement through the treaty process, a significant adverse effect on any such title that could be granted to the Alkali Lake Band and the Canoe Creek Band.</li> </ul>

<b>Other Issues</b>	
<b>Capacity of Renewable Resources</b>	<ul style="list-style-type: none"> <li>The Project would result in the inability of the fisheries resource in the Fish Creek watershed and the South Chilcotin grizzly bear population to meet the needs of present and future generations.</li> </ul>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>No significant adverse cumulative effect on biodiversity.</li> </ul>
<b>Effects of the Environment on the Project</b>	<ul style="list-style-type: none"> <li>The effects of the environment on the Project would not be significant.</li> </ul>
<b>Measures to Enhance any Beneficial Environmental Effects</b>	<ul style="list-style-type: none"> <li>The proposed mitigation measures would not result in an enhancement of beneficial environmental effects.</li> </ul>
<b>Accidents and Malfunctions</b>	<ul style="list-style-type: none"> <li>The proposed mitigation measures, emergency plans and commitments to address the possibility of accidents and malfunctions were adequate.</li> </ul>
<b>Environmental Management</b>	<ul style="list-style-type: none"> <li>The proponent's conceptual environmental management plans are consistent with good management practices to ensure that effects of the Project activities would be minimized and its commitments would be followed</li> </ul>

Source: CEAA, 2010 p.237-240 and 246-248

## **Chapter 7.**

# **Evaluation of Canada's and British Columbia's Environmental Assessments for the Project**

## **7.1. Chapter Overview**

This chapter evaluates the EA process used by the BC EAO and the Panel for the Project, using the EA best practices criteria developed in chapter two. It begins with a brief summary of the Project's divergent EA conclusions and the possible reasons for the differences. The beginning of the chapter also features a short overview of Haddock's report (2011), which also included a comparison of the divergent EAs using an alternative evaluation framework. The final chapter provides procedural and substantive recommendations on how to address the shortcomings identified in this chapter's best practice evaluation.

## **7.2. The Project's Divergent EA Findings**

The previous two chapters, which provide narrative summaries of the respective EA reports for the Project, show that the BC EAO and the Panel ultimately reached significantly different conclusions on the environmental and sociocultural effects of the proposed undertaking. Following BC EAO's recommendations, the BC government approved the Project in January 2010, while the Government of Canada, citing the recommendations of the Panel, rejected the same project in November 2010. Specifically, the BC EAO concluded that the only significant adverse effect of the Project would be on fish and fish habitat; however, that this adverse effect was justified given the significant economic and employment benefits of the Project, and the mitigation potential of the proponent's fish habitat compensation plan (BC EAO, 2009). In contrast, the Panel concluded the Project would result in several "significant adverse

environmental effects on fish and fish habitat, on navigation, on the current use of lands and resources for traditional purposes by First Nations, on cultural heritage, and on certain potential or established Aboriginal rights or title” (CEAA, 2010 p. ii). The Panel also concluded that the fisheries compensation plan would only partly offset the losses of fish and fish habitat and that the residual effects would be significant (CEAA, 2010 p. 242). Table 7.1 summarizes each of the divergent EA conclusions and provides possible reasons for the differences. As highlighted in the table, differences could have resulted from different information availability, different legislation and policy requirements, or different judgments and interpretation of evidence.

**Table 7-1: A Summary of the Divergent EA Conclusions and the Possible Reasons for their Differences**

Assessment Component	Findings of Significant Adverse Effects by the Panel	Findings of Significant Adverse Effects by the BC EAO	Possible Reason for Divergent Finding (Supplemented by Haddock’s 2011 Evaluation)
<b><i>Fish and Fish Habitat</i></b>	Yes	Yes but justified	<p><b><i>Different Judgments, Different Legislation/ Policy, and Different Information</i></b></p> <ul style="list-style-type: none"> <li>• The BC EAO decided that the significant adverse effects were justified given the significant economic and employment benefits of the Project</li> <li>• The BC EAO concluded that the proponent’s fisheries compensation plan would mitigate the adverse effect, while the Panel concluded that the compensation plan was inadequate.</li> <li>• The BC EAO did not have an established mitigation and compensation policy to evaluate the compensation plan, while the Panel had DFO’s rigorous mitigation and compensation policy, which allowed for a more comprehensive analysis of the fisheries compensation plan.</li> <li>• The BC EAO based its information on the proponent’s original and incomplete EIS, while the Panel had supplemental information from the proponent, experts, and First Nations, which allowed for a more comprehensive evaluation.</li> </ul>
<b><i>Land and Resource Uses</i></b>	Yes (On grazing rights, the Xeni Gwet’in trapline, and tourism)	No.	<p><b><i>Different Judgements</i></b></p> <ul style="list-style-type: none"> <li>• The BC EAO did not perceive effects to be significant because it assessed the impacts in the context of a larger geographic region, which discounted smaller scale impacts such as grazing rights, traplines, and tourism, to the point of insignificance. The Panel assessed impacts in the context of a smaller geographic region, and therefore found the impacts to be significant.</li> </ul>

<b>Navigation</b>	<b>Yes</b>	<b>No.</b>	<p><b>Different Judgements</b></p> <ul style="list-style-type: none"> <li>Because navigable waters are under federal jurisdiction, the BC EAO chose not to make a formal assessment of the Project's effect on navigation, despite obvious significant adverse effects on water-based activities at Fish Lake.</li> </ul>
<b>Current Use of Lands and Resources for Traditional Purposes</b> <b>Aboriginal Rights and Title</b>	<b>Yes</b> (On traditional land use and cultural heritage; Tsilhqot'in Aboriginal rights; and Tsilhqot'in Aboriginal title)	<b>No</b>	<p><b>Different Information and Different Judgments</b></p> <ul style="list-style-type: none"> <li>The BC EAO did not have the same information as the Panel from one of the First Nations (Tsilhqot'in), which withdrew from the provincial EA early in the process, but continued to participate in the federal process.</li> <li>While the BC EAO found that the Project would have potential impacts on traditional land-use and aboriginal rights, it considered these effects to be insignificant in the context of its large geographic study region. The Panel assessed effects to First Nations in the context of a smaller geographic region, and therefore found several impacts to be significant.</li> </ul>
<b>Cumulative Impacts</b>	<b>Yes</b> (On the South Chilcotin grizzly bear)	<b>No.</b>	<p><b>Different Judgements</b></p> <ul style="list-style-type: none"> <li>The BC EAO rejected the BC MOE's concerns regarding potential significant adverse effects on grizzly bears and adopted the proponent's position that with proposed mitigation measures and future planning processes to develop additional mitigation measures, the Project in combination with other projects would not have significant adverse effects on wildlife (including Grizzly bears). Through its cumulative impact assessment, the Panel concluded that the proposed mitigation measures were unsatisfactory and that the project would have significant adverse impacts on South Chilcotin grizzly bears.</li> </ul>
<b>Capacity of Renewable Resources</b> (Future Generations)	<b>Yes.</b>	<b>No.</b>	<p><b>Different Legislation/ Policy and Different Judgment</b></p> <ul style="list-style-type: none"> <li>The BC EAO did not have a legislated commitment to fully consider the Project's impacts to future generations, and as such it did not formally examine impacts to future generations. The <i>CEA Act (1992)</i> required RAs to promote sustainable development and consider the needs of future generations</li> <li>The BC EAO informally indicated that any costs of the loss of Fish Lake to future generations would be offset by induced social and economic benefits and the fish compensation plan.</li> </ul>

### 7.2.1. Haddock's Evaluation

In July 2011, The Northwest Institute for Bioregional Research released a report by environmental lawyer Mark Haddock, which similarly compared the BC and federal EAs for the Project. Haddock's (2011) driving question throughout the report was "how is

it possible that two separate assessments conducted for the same project, using the same terms of reference and assessing the same issues, can end up with such dramatically different results?” (p.65). Haddock’s (2011) main conclusion was that the federal review process was superior in that it allowed for a transparent and open public hearing process with community members and technical experts, which subsequently identified an array of adverse impacts. By contrast, he concluded that the BC EAO’s recommendation to approve the project was founded on incomplete evidence, which was the product of a rushed, inconsistent, and less than objective EA process (Haddock, 2011).

Haddock (2011) used the Panel’s identification of eight significant adverse project impacts to compare and contrast the different outcomes of the two assessments. He concluded that the main issues that explain the divergent outcomes include differences in: process; information; expertise; significance determinations; mitigation and compensation; standards and criteria; legislation; independence; and sustainability objectives. A summary of Haddock’s (2011) comparison is provided in appendix table F.1.

### **7.3. EA Best Practice Evaluation**

In this section, the divergent assessments for the Project are evaluated based upon the best practice principles outlined in chapter 2. Although the evaluation will utilize Haddock’s (2011) findings, it is based on a more comprehensive set of best practice evaluation criteria (section 2.5.). More importantly, it evaluates both the federal and provincial EA processes based on a common set of criteria and does not assume that one process is superior to the other. Haddock (2011) used the federal EA process as the benchmark for assessing and evaluating the provincial process; therefore, he did not include a full evaluation of the federal process itself.

### 7.3.1. Clearly Defined Roles and Responsibilities

**Principle:** The roles and responsibilities of all those involved in the EA should be clearly defined.

**Evaluation Criteria:**

- Do the roles provide guidance and clearly outline levels of authority and responsibilities?
- Are the roles defined in legislation and/or legal agreements?
- Do formal mechanisms support multi-jurisdictional collaborations?

#### **Evaluation of BC's Provincial EA Process**

The role and responsibility of the BC EAO is vaguely defined and no longer guided by an explicit list of legislated principles to help guide the purpose of an EA. In addition, the *BC EAA* (2002) emphasizes that for assessment of the potential effects of reviewable projects, government agencies such as the BC EAO, “must take into account and reflect government policy identified for the executive director” [s.11 (3)]. This means that the roles and responsibilities of government agencies that manage the provincial EA process can vary, and may be steered by changing external government policies.

For the provincial assessment of the Project, it was unclear if the role of the BC EAO staff was to act as facilitators of the EA process or as an expert assessment body. In certain parts of the provincial *Assessment Report*, the BC EAO took on a facilitation role and sought input from line agencies, First Nations, and the public. However, at other times the BC EAO also took on the role of an expert assessment body, particularly when it overruled the concerns and positions of line agencies and stakeholders, and provided its own analysis. Also, while the provincial *Assessment Report* identified four BC EAO staff handling the assessment, it did not reveal their qualifications or areas of expertise (Haddock, 2011).

Jurisdiction over the EA of the Project was divided between the provincial and federal governments under the Canadian Constitution. While the *Canada-British Columbia Agreement on Environmental Assessment Cooperation* was originally applied

to the Project, it has several shortcomings. Despite its intended purpose, the agreement is ambiguous, poorly defines the collaborative framework for joint assessments, and does not clearly define the circumstances that determine which government assumes the lead agency role in the joint assessments (Van Hinte et al., 2007). Consequently, for the Project the agreement was not able to increase efficiency and cooperation, while minimizing the uncertainty and duplication associated with many multi-jurisdictional assessments. The provincial Minister was able to withdraw from the joint review process and conduct a separate provincial EA, resulting in duplication and signifying that the agreement is essentially a voluntary mechanism for multi-jurisdictional cooperation.

Overall, for the provincial assessment of the Project, specific roles and responsibilities were inadequately defined and did not assist in keeping the process objective and independent. While general jurisdictional roles and responsibilities were outlined, the mechanisms that support multi-jurisdictional cooperation were vague, ambiguous, and voluntary. Finally, specific legal treaties and case law in Canada have affirmed that First Nations have a legal role in EA and its associated decision making process; however, this role was not clearly outlined in BC's EA framework or in the provincial *Assessment Report* for the Project.

### **Evaluation of Canada's Federal EA Process**

The Project was determined reviewable under the federal EA process because it required authorization from: the DFO under the *Fisheries Act* (1985); a licence from NRCan under the *Explosives Act* (1985); and a permit from TC under the *Navigable Waters Protection Act* (1985) (CEAA, 2010). Accordingly, the RA's (DFO, TC, and NRCan) jurisdiction over aspects of the Project was clearly defined in the federal *Assessment Report*. The federal Minister of Environment announced that the Projects would undergo an EA by a three-member federal review panel and the federal *Assessment Report* identified and provided biographical descriptions of each Panel member. In consultation with the RAs, the Minister of the Environment fixed the Panel's *Terms of Reference*, which defined the specific mandate and scope of the assessment.

While the roles and responsibilities of the RA's and Panel members were clearly defined and outlined, the inability of the federal EA framework to engage the province in

a joint EA compromised the clarity of the review process. The existence of two independent assessment processes created confusion regarding roles and responsibilities of parties involved in multi-jurisdictional assessments. It is not clear how the Panel interpreted the results of the provincial assessment in their own review. In addition, while the federal *Assessment Report* clearly outlines the role of the First Nations involved in the EA process, it did not describe their legal role in the decision-making process.

### **7.3.2. Clearly Defined Decision-Making Criteria**

**Principle:** *The EA's decision-making process should be guided by a consistent set of structured decision criteria, which are clear, comprehensive, well integrated, and accordingly elaborated on for the case at hand.*

#### **Evaluation Criteria:**

- Are the decision-making criteria clear and comprehensive?
- Do decision-making criteria guide objective judgment, and do they minimize discretion?
- Do decision-making criteria guide consistent and effective scoping practices?
- Do decision-making criteria reflect principles of sound decision-making, such as efficiency, accountability, transparency, consistency, and the precautionary principle?
- Are the review and decision-making process transparent and traceable?
- Do the review and decision-making process reflect principles of sustainability and application of sustainability-based objectives and criteria?
- Are decision-makers required to provide a rationale for their key findings and recommendations?

#### **Evaluation of BC's Provincial EA Process**

There is a lack of clear decision-making criteria within BC's EA process (Haddock, 2010), and it is uncertain what evaluation criteria were used by the BC EAO in arriving at its recommendations, and by the minister in reaching his final decision for the Project. As mentioned above, the BC EAO did not have an explicit list of principles to help guide the purpose of the Project EA. As a result, decision-making points throughout

the process were not guided by decision criteria leading to objective judgments that minimized discretion. This is a fundamental flaw of BC's current EA process, namely its broad and unstructured discretionary nature.

For its assessment of the Project, the BC EAO assessed whether the Project would have significant adverse environmental, social, economic, heritage and health effects, considering relevant background information in the proponent's EIS and developed through the EA process (EAO, 2009). In addressing what may constitute a significant adverse effect, the BC EAO described that it would use criteria that are "generally consistent with the analysis used in federal environmental assessments under the *Canadian Environmental Assessment Act*" (EAO, 2009 p. 25). The BC EAO relied on CEAA's reference guide entitled *Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects* (1994). The BC EAO also considered the Project's influence based on spatial boundaries, or the area beyond which the potential environmental, cultural and socio-economic effects were expected to be non-detectable (section 4.7) (BC EAO, 2009). Furthermore, the BC EAO also considered temporal boundaries, or the periods when valued assessment components would be affected by the proposed Project (BC EAO, 2009). Overall, the criteria used by the BC EAO were discretionary and general, and in practice, the BC EAO consistently discounted the significance of local impacts by evaluating them against a large geographic area, in some cases the entire Cariboo-Chilcotin region (Haddock, 2011). Vague decision making criteria left the decision makers considerable discretion over the entire EA process. In addition, the BC EAO and ministers did not communicate to stakeholders and the public how different information inputs led to different conclusions.

BC's EA process did not require the BC EAO to provide a rationale for their key findings and recommendations. The BC EAO overlooked the findings of relevant agencies without providing contrary expert opinion or a rationale for their judgments. The BC EAO did not provide rationales for several of their key findings of "no significant effect," even when there was clear agency disagreement on the significance. Specifically, the MOE expressed concerns about wildlife impacts and potential seepage of mine tailings into groundwater across watersheds (EAO, 2009; Haddock, 2010). The MEMPR expressed additional concern with the proponent's seepage control measures.

The BC EAO and executive director recommended certificate approval, despite a failure to satisfy the respective concerns of the MOE and MEMPR. The BC EAO seemed to adopt the proponent's findings and ignore the opinion of agency experts without providing justification for its decision. The BC EAO stated that it was ultimately satisfied that "the EA process has adequately identified and assessed the potential significant adverse environmental, economic, social, heritage and health effects of the proposed Project" (EAO, 2009 p.147). The BC EAO did discuss the different perspectives on the significance of adverse effects; however, it ultimately asserted that there would be no significant adverse effects on several assessment components that included conflicting expert opinions. The proponent's own reports and commitments are provided as the only rationales to explain why the BC EAO rejected the agency's recommendations and came to different conclusions.

The unstructured discretionary nature of BC's current EA process is a direct result of the lack of legislated substantive decision-making criteria. A high level of discretion is afforded to the BC EAO, its executive director, and minister(s) to conduct the assessment process, decide about certificate approval, and even waive completely the requirement for assessments. (Boyd, 2003; Rutherford, 2009). As BC's EA process lacks substantive legislated decision-making criteria, decision-makers may not base their assessment judgments on information that is consistent, accurate and objective. Consequently, there may not be a clear separation between the political and scientific aspects of BC's assessment process.

BC's EA framework and its legislation also fail to incorporate the precautionary principle into decision-making. The BC EAO did not reference this principle in its *Assessment Report*. The BC EAO did not sufficiently address the uncertainties and risks of using new technology, particularly the Fish and Fish Habitat Compensation Plan. Several external researchers that evaluated the proponent's EIS noted that it lacked an approach to dealing with impact uncertainty. For example, Dr. David Levy, who submitted a review of the Project's aquatic impact assessment to Mining Watch Canada, highlighted that the precautionary principle "needs to be adopted as a key feature of decision-making around the proposed Project and its impacts on fish habitats" (Levy, 2009 p. 20) Similarly, MOE's regional hydrologist Dr. Sabur communicated to the BC

EAO his findings that there was “a high degree of uncertainty in the assessment of environmental risks against baseline conditions, assessing functionality of fish compensation measures, and in assessment effectiveness of mitigation measures” (As initially quoted by Haddock 2010 p. 47). With the absence of a clear mandate or guidelines to incorporate the precautionary principle into EA, the BC EAO did not effectively deal with sources of uncertainty in a conservative decision making process, which should have also considered efforts at risk reduction.

The *BC EAA* (2002) and its associated regulations do not include an explicit commitment to sustainability and to the application of sustainability-based objectives and criteria. BC EAO’s *User Guide* (2011a) references sustainability when it explains that, “comprehensive and efficient environmental assessments result in well-informed and timely decision-making that supports sustainable development” (p.10). However, this isolated reference to sustainability does not carry the same weight as an explicit policy statement or legislated commitment (Rutherford, 2009). The BC EAO did not have a legislated commitment to fully consider the Project’s impacts on future generations, and it did not formally examine impacts to future generations.

The *BC EAA* (2002) does not utilize mandatory and non-discretionary language. The legislation predominantly focuses on what executive directors and ministers *may* do, and dictates that projects can be approved if the assessment finds no significant adverse effects. Throughout the legislated EA process, there is a lack of clarity and consistency on how the *significance* of project effects is determined, which leads to significance determinations that are subjective and flexible (Haddock, 2011; Plate et al., 2009) This collection of vague phrases failed to offer clear direction on how the BC EAO should apply its discretion throughout the Project EA.

Overall, the decision-making framework for assessing the Project was seriously deficient because it did not include substantive legislated criteria to guide the BC EAO and ministers in their recommendation and decision-making process. With the absence of substantive criteria, the Project case study shows that BC’s EA decision-makers cannot be expected to effectively identify all the environmental impacts, risks, and uncertainties of proposed undertakings. The lack of decision-making criteria may have

compromised the objectivity, accountability, transparency, consistency, and effectiveness of the provincial assessment of the Project. As emphasized by Joseph (2013), “clear criteria are the foundation of transparent decisions” while “ambiguous criteria foster conflict over decisions by those who disagree with the decisions” (p. 117). The BC EAO and ministers base their decisions on ambiguous criteria.

### **Evaluation of Canada’s Federal EA Process**

The federal *Assessment Report* for the Project specified that the Panel’s mandate was to conduct an assessment of the environmental effects of the Project, and to determine whether potential effects would be *adverse*, whether after implementation of mitigation measures the potential adverse effects would be *significant*, and whether potential significant adverse effects were actually *likely to occur* (CEAA, 2010). Like the BC EAO, the Panel determined the significance of adverse effects using the CEAA’s reference guide entitled *Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects* (1994). In reality, the significance and likelihood criteria that were used were general and could have been interpreted differently by different Panel members.

Discretion over major EA decisions was also imbedded within the core of the *CEA Act* (1992). The *Act* focused on what federal government actors “may” do, instead of addressing what they “shall” do, and dictated that projects can be approved if the assessment finds no “significant adverse effects,” or if such effects are “justified in the circumstances.” While the inclusion of these criteria are an improvement over the BC process, they are still relatively vague phrases that fail to offer clear direction on how this discretion is to be applied. While the Panel did not have authorization to reach conclusions on justifiability, it was required to include information to assist government decision makers in their determination of the justifiability of effects (CEAA, 2010). This indicates that extensive discretion was afforded to final government decision-makers because no guidance is provided on how to determine whether adverse effects are justifiable.

Scoping is also a critical decision stage in the EA process where key determinations are made that will largely define the type and focus of the assessment.

The scope of the Panel's assessment considered all the facts listed in subsections 16(1)(a) to(2) and 16(2) of the *CEA Act* (1992) (CEAA, 2010). The scoping of the assessment of the Project appeared sufficient to address all the potential adverse environmental effects of the undertaking, including a consideration of the precautionary principle and project rationale. However, given the current framework of the federal EA process, not all projects are scoped so comprehensively. While scoping is a critical stage in the EA process, federal decision-makers are granted wide discretion to scope projects narrowly or broadly (Doelle, 2008; Herring, 2009).

Federal EA trends in Canada show that RAs prefer to scope projects narrowly, and predominantly choose levels of EA that provide the lowest level of scrutiny (Boyd, 2003; Doelle, 2008; Hazell, 1999). As highlighted by Boyd (2003), of the 25,000 EAs conducted between 1995 and 2000, over 99.9 percent were screenings (p.152). As emphasized by environmental lawyer Stephen Hazell (1999), "projects subject to screening are rarely found to have significant adverse environmental effects" (p.157 as quoted by Boyd, 2003 p. 152-153). Boyd (2003) also reveals that during that same period, only 46 projects were subjected to comprehensive studies, only 10 projects were subjected to panel reviews, and no projects were subjected to mediation (p. 152). These disproportionate scoping trends have continued, which means that most federal EAs in Canada have not explicitly addressed important additional assessment facts, including the purpose of the project, alternative means of carrying out the project, and the need for follow-up and monitoring programs. While the assessment of the Project appeared to take a broad scoping approach, the *CEA Act* gives federal decision-makers the responsibility of resolving the tension between narrow and broad scoping perspectives on a case-to-case basis (Doelle, 2008).

Finally, when it came to the Project's final EA decisions, the federal government had the prevailing discretion to approve the undertaking even if the EA process forecasted significant adverse environmental impacts (Boyd, 2003; Nikiforuk, 2009). Under the *CEA Act* (1992), the final decision of whether a project could proceed rested with the RAs in many cases (See "Decision Making" in Table 3.2). If the circumstances were justifiable, the RAs could have approved the Project, even if they were the proponent or had invested in the project. The definition of justifiable circumstance were

not supported by a consistent set of decision criteria, and the RAs were not required to explain their justifications (Herring, 2009; Penny, 1996). Such a legislative framework clearly had the potential to create conflicts of interest. As supplemental material, appendix box F.2 highlights recent changes to the *CEA Act* (1992) with respect to decision-making criteria

### **7.3.3. Sound and Clearly Defined Methods of EA**

**Principle:** *EA should only utilize sound methods of project review and employ practices and techniques that are appropriate to address the problems being investigated.*

#### **Evaluation Criteria:**

- Are the EA methods able to perform basic functions of scoping, identifying, and measuring impacts, and interpreting and communicating impact significance?
- Are the EA methods that are used by the proponent clearly specified?
- Are there guidelines provided for applying the methods in a consistent and methodologically sound manner?

#### **Evaluation of BC's Provincial EA Process**

The *BC EAA* (2002) and its regulations are very general and provided the BC EAO with little practical guidance on the standard EA methodology that should have informed the assessment of the Project. Important elements of BC EAs are essentially negotiated between the BC EAO, agencies, and the proponent. Without a standard EA methodology, fundamental assessment elements can vary from assessment to assessment. This can include discrepancy in:

- the standards and requirements the proponent will have to meet in undertaking baseline studies;
- the methods for identifying adverse effects;
- evaluating mitigation measures and project alternatives;
- establishing spatial and temporal assessment boundaries; and,
- assessing cumulative impacts.

For the Project, the assessment methodology undertaken by the BC EAO had several shortcomings. In the methodology section the BC EAO indicated that its responsibility was to assess whether the Project was likely to cause significant adverse effects and whether those significant adverse effects were justified (BC EAO, 2009). In doing so, the BC EAO needed to consider the facts that constitute: significant adverse effects; the relevant facts that render significant adverse effects justifiable; and the spatial and temporal boundaries of the assessment. While this overlaps with the previous section on decision-making criteria, it is important to note that the BC EAO did not specify a standard assessment methodology on how these impacts would be identified and assessed. The BC EAO indicated that it would predominantly consider the proponents EIS and input from the Working Group and stakeholders.

Guidelines for the proponent's EIS were jointly developed by the CEAA and the BC EAO. The EIS guidelines clearly specified the scope, methods and extent of the information to be contained in the proponent's EIS (CEAA, 2010). In addressing the relevant facts that render significant adverse effects justifiable, the BC EAO relied heavily on the information set out in the proponent's EIS and *Terms of Reference*. This is problematic because the *BC EAA* (2002) and associated guidelines poorly defined EA methods and standards, and there is a lack of uniform training or professional guidelines for proponents (Lawrence, 2003). This compromised the reliability of impact predictions set out in the proponent's EIS for the Project. It is also likely that the proponent, who is considering costs and time, would take advantage of a lack of legislated EA standards and methods, and provide information in their application that is not based on an appropriate, objective, and professional EA analysis.

BC's EA framework also lacked methods and standards to guide the BC EAO's assessment of VECs and other important environmental values. Specifically, BC's *Wildlife Act* was not able to support the provincial assessment by providing standards and criteria against which to measure impacts to wildlife and wildlife habitat, even for endangered species (Haddock, 2011). This led to significance determinations that were subjective and may have led the BC EAO to miss significant adverse effects on the South Chilcotin grizzly bear population, and overlook several other wildlife-related issues that were of concern to the provincial MOE (Haddock, 2011). Overall, the EA

methodology described by the BC EAO was more linked to broad decision-making criteria. Furthermore, the BC EAO did not clearly identify the proponent's "standard methodology," and if that methodology was founded on sound methods of impact assessment that were able to identify and measure the incremental effects of the Project.

### **Evaluation of Canada's Federal EA Process**

Under the *CEA Act* (1992), the general methodology used for the assessment of the Project was largely determined through the scoping procedure, which as outlined in the previous section, was largely discretionary. The Minister of Environment and the RA's scoped the Project EA broadly. The Panel evaluated multiple facts and considered whether potential effects of the undertaking would be adverse, significant, and likely to occur. In determining whether the effects of the Project would be adverse, the Panel compared the existing state of the environment against the predicted state of the environment with the Project in place (CEAA, 2010). In determining whether the adverse effects of the Project after mitigation were significant, the Panel considered the magnitude, geographic extent, duration, reversibility, ecological context, and exposure of the effects (CEAA, 2010). Finally, in determining the likelihood of significant adverse effects, the Panel considered the probability of occurrence and associated scientific uncertainty (CEAA, 2010).

A combination of technical and scientific data, regulated standards, stakeholder values and concerns, and professional judgment aided the Panel in determining the significance of adverse environmental effects and their associated likelihood (CEAA, 2010; Haddock, 2011). The Panel consistently used the standards and methodology outlined in CEAA's reference guide for determining impact significance to all the environmental and social facts that are outlined in the federal *Assessment Report*. To measure impacts to Fish and Fish Habitat, and evaluate the associated compensation plan, the Panel referenced the rigorous standards and criteria outlined in DFO's No Net Loss policy.

In the federal *Assessment Report*, common EA methods that were used in the proponents EIS were described to include: multiple accounts analysis; remote sensing;

social impact assessment; stakeholder consultation; gathering traditional ecological knowledge; uncertainty evaluation; modelling; academic literature review; heritage assessment; expert consultation; economic impact assessment; cumulative impact assessment; biophysical impact assessment; and adaptive environmental assessment (CEAA, 2010; EIS, 2009). However, these methods are limited to predicting what effects are expected to result from the Project, and do not necessarily evaluate the importance of identified effects in the EA process. At the federal level, there is also a lack of standards and uniform training and professional guidelines for proponents preparing an EIS. In addition, while the predictive methods for informing decision makers of the potential effects of the Project are outlined, the methods by which decision-makers incorporated these predictions into their evaluation was unclear. As such, a purely objective scientific EA methodology for the Project may not have prevented value judgments throughout the federal EA process where decision-making methodology was uncertain.

#### **7.3.4. Adequate and Objective Information**

**Principle:** *EA decisions should be based on adequate and objective information, which considers the best available scientific, technical, traditional, and local knowledge that is gathered by reliable and objective parties.*

**Evaluation Criteria:**

- Do reliable and objective parties gather the information?
- Does the information consider the best available scientific knowledge?
- Does the information consider the best available traditional and local knowledge?

#### **Evaluation of BC's Provincial EA Process**

BC's EA of the Project was proponent driven because the proponent was responsible for preparing the initial project description and the application for an EA certificate (Haddock, 2010; Rutherford, 2009). The proponent has the responsibility of collecting and synthesizing scientific and technical information with respect to the potential environmental and socioeconomic impacts of the undertaking. The *Terms of*

*Reference* required the proponent to provide adequate information in order to effectively guide the EA. To satisfy this requirement, the BC EAO frequently requested additional information from the proponent during the review.

The major deficiency of this approach is that the majority of information and analysis is provided by the project proponent, which is not an objective party. Critics such as Doelle (2008) cite the concern that “the role of the proponent as the primary client of the EA professional will result in pressure to present the project in a favourable light” and consequently “overstate favourable aspects of the project and hide less desirable consequences” (p. 222). For the Project, this deficiency is combined with a lack of standards for required information, a lack of consistent training or professional guidelines for the proponents preparing applications, and by the BC EAO’s occasional reluctance to assume information quality control measures. (Haddock, 2010).

For the Project, the BC EAO exclusively based its assessment on the proponent’s original application, which was completed before some of the critical information was made available. The BC EAO did not wait for the DFO and First Nations to provide critical scientific, technical and traditional knowledge regarding the Fish and Fish Habitat Compensation Plan, grizzly bear impacts, and First Nation’s traditional land use and cultural heritage. Therefore, important information was omitted from the BC EAO’s and the minister’s factual records when making their recommendations and reaching their decisions. Considerable variation in the quality of information and unreliable impact predictions may have informed the majority of the Project EA.

### **Evaluation of Canada’s Federal EA Process**

The federal EA process for the Project suffered from the same major deficiency as the provincial EA. Namely, the majority of the information was provided by the Proponent, not an objective party. This can result in actual or perceived conflicts of interests, biased information, inconsistent application of the EA process, and quality control concerns (Doelle, 2008). However, the Panel did not rely on the proponent’s EIS as heavily as did the BC EAO.

The *CEA Act* (1992) required that adequate information guide an EA (Wozniak, 2004). In accordance with the *Terms of Reference*, the Panel was required to determine whether the EIS contained adequate information to enable the EA to proceed to public hearings (CEAA, 2010). The Panel issued several additional information requests and did not proceed with the public hearings until it decided that it had received adequate information.

The structure of the public hearing process, a more effective working relationship with First Nations, and the flexible timing of the assessment decision, allowed the Panel and federal to have a more complete and comprehensive collection of information for their analysis and decisions (Haddock, 2010). The Panel was able to collect critical information from DFO and First Nations and compile more adequate information concerning the proponent's Fish and Fish Habitat Compensation Plan, impacts to grizzly bears, and First Nations' cultural heritage and traditional land use (Haddock, 2011). While the Panel had more adequate information upon which to base its assessment, the majority of information was still provided by the non-objective proponent.

### **7.3.5. Alternatives Assessment**

**Principle:** *The EA process should require the proponent and decision-makers to conduct a comprehensive examination of alternative means of undertaking the proposed undertaking.*

#### **Evaluation Criteria:**

- Is there a comparative evaluation of the alternative means of undertaking the proposal?
- Is the alternatives assessment comprehensive, transparent, and systematic?
- Is the alternatives assessment incorporated into the early stages of the proposal?

#### **Evaluation of BC's Provincial EA Process**

BC's EA process poorly addressed alternatives assessment. The *BC EAA* (2002) does not require consideration and evaluation of project alternatives. In addition, BC

EAO's *User Guide* (2011a) fails to make any reference to this critical component of an effective EA. Vague authority is provided to the executive director to request an evaluation of alternatives by way of the section 11 orders; however, it appears that this discretion is not being exercised to require assessment of alternatives (Haddock, 2010). The proponent-driven nature of BC's EA process further compromised the usefulness of the alternatives assessments. It is not realistic to expect project proponents to be objective when evaluating whether the Project is needed and whether more preferable project alternatives exist. Haddock's (2010) review of selected proponent's alternative assessments found that they often appear "simplistic and self-serving" (p. 31).

For the Project, the BC EAO only reviewed the proponent's alternatives assessment because the *CEA Act* (1992) triggered the requirement for alternative assessment. Despite noting several flaws with alternatives assessment, the BC EAO accepted the evaluation without a full examination of the rationale behind the proponent's conclusions. In reality, the alternatives assessment provided was vague, and did not specify how important conclusions on alternative economic and technical matters were ultimately reached. The alternatives assessment for the Project appeared to be discretionary, vague, and based on subjective judgment criteria.

### **Evaluation of Canada's Federal EA Process**

The *CEA Act* (1992) explicitly stated that every EA by a review panel must include a consideration of the "alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means" (section 16 (2)(b)). The alternatives assessment of the Project included consideration of alternative locations, routes and methods of development, implementation, and mitigation techniques (CEAA, 2010). The Panel concluded that the proponent's rationale for selecting its preferred alternative for the mine development plan was reasonable for the purpose of the EA (CEAA, 2010 p. 51).

It is important to note that the EIS for the originally proposed Project included an alternate mine development plan (Mine Development Plan 3b) that would use the preferred tailings location in the upper Fish Creek watershed, and would store waste rock, low grade ore, and overburden stockpiles to the north-east of the open pit, thus

preserving Fish Lake (Teztan Biny) (CEAA, 201; EIS, 2009, v.2) (section 4.6). The proponent's original analysis showed that long-term seepage from the removed TSF would eventually reduce water quality in Fish Lake (Teztan Biny) to a level below ecological standards. In addition, the proponent concluded that it was not economically feasible for this plan to provide mitigation measures for the potential long-term loss of fish and fish habitat.

The weakness in the consideration of alternatives in the federal EA was illustrated by the fact that, after the federal government rejected the originally proposed Project, the proponent applied for an assessment of a revised mine development plan that the proponent had initially concluded was not feasible, even though it mitigated some of the environmental impacts. Due to relaxed economic constraints in its assumptions, as a result of increased long-term prices for both gold and copper, the proponent revised its original EIS and proposed a mine development undertaking that closely resembles the previously unfeasible Mine Development Plan 3b outlined above.

While the *CEA Act* (1992) required the proponent to assess alternatives for the Project, there are several major flaws with the way this assessment was performed. First, the proponent undertook the alternatives assessment, which may have compromised the objectivity of the practice. Second, the proponent was only required to conduct an alternatives assessment at the project-level, and did not conduct a comparative evaluation of its undertaking against other project alternatives that might fulfill similar needs and purposes. This is a deficiency that may be resolved by conducting government-administered SEA. Finally, the *CEA Act* (1992) only required a *consideration* of alternatives means of carrying out a project, and it was not clear how the outcomes of the alternatives assessment were incorporated into the final EA decision.

### **7.3.6. Process Efficiency**

**Principle:** *The EA process should be efficient in that it results in decisions that are reached within a reasonable time and cost.*

**Evaluation Criteria:**

- Does the assessment process achieve accepted objectives, within the limits of reasonable time and resources?
- Are guidelines provided to provide some degree of certainty in the length of the EA process?
- Can the costs of conducting assessments be determined and are they reasonable?
- Is potential overlap and duplication in the EA process minimized?

**Evaluation of BC's Provincial EA Process**

BC EAO's *User Guide* (2011a) that directed the assessment of the Project explains that, "comprehensive and efficient environmental assessments result in well-informed and timely decision-making that supports sustainable development" (p.10). This description encompasses elements of an efficient and effective EA process; however, a tremendous gulf exists between this portrayal and on-the-ground practices in BC. The provincial assessment of the Project showed that "comprehensive and efficient environmental assessment," and "well-informed and timely decision making," might be conflicting ideals. Efficiency may come at the cost of effectiveness, and vice versa. EAs that are narrow in scope, to be more efficient for proponents and reviewers, often sacrifice covering all significant environmental effects and stakeholder concerns.

The BC EAO's assessment of the Project might have been considered efficient and timely; however, it may have failed to achieve substantive assessment objectives. The provincial assessment was efficient in that it reached a decision within the limits of legislated time limits and resources; however, in keeping to its rigid review and comment period, the BC EAO missed subsequent information that was made available later in the process. By rushing its EA decision, the provincial assessment was based on a deficient evidentiary record. Imposing a rigid deadline onto a complex EA process may have resulted in an incomplete or rushed assessment, which did not effectively consider complete scientific and public information.

The Project EA was inevitably going to be costly and lengthy due to overlapping regulatory and approval requirements. This was further complicated when BC's Minister of Environment decided to back away from the cooperative joint review panel. With the BC EAO conducting its own assessment, the Project was subject to two EAs trying to address the same matters at the project level. The result was an overall EA that was ineffective and inefficient, and resulted in a more frustrating and uncertain experience for all the stakeholders involved.

### **Evaluation of Canada's Federal EA Process**

The Panel's assessment of the Project took longer than that of the BC EAO. While the Panel's *Terms of Reference* included a set of non-statutory timelines for different stages of the EA process, it did not specify time limits for the review of the EIS. Flexible assessment timing allowed the Panel to anticipate and incorporate critical information from the proponent, technical advisors, and First Nations. However, the lack of any time guidelines in the CEAA (1992) increased uncertainty regarding the length of the process. The federal EA process for the Project was less efficient but more comprehensive than the provincial EA. However, the key efficiency concern that remains is that the Project was subject to overlapping jurisdiction trying to address the same matters at the project-level. The poorly resolved overlapping regulatory and approval process ultimately resulted in an overall costly, lengthy, duplicative, and uncertain federal EA process. As supplemental material appendix box F.3 highlights recent changes to the *CEA Act* with respect to efficiency.

#### **7.3.7. Consideration of Cumulative Impacts**

**Principle:** *The EA process should consider additive or interactive effects, which result from the recurrence or addition of actions over time when undertakings build on or add to the impacts of previous impacts.*

##### **Evaluation Criteria:**

- Does the process require a cumulative effects assessment?
- Does the process suggest appropriate means to analyze and manage the cumulative impacts?

## **Evaluation of BC's Provincial EA Process**

The background section of the BC EAO's *Assessment Report* briefly stated that cumulative impacts would be considered through various means. However, there was no further mention of cumulative impact assessment throughout the remainder of the report. In practice, inconsistent practice around cumulative effects compromised the BC EAO's ability to identify significant adverse cumulative effects to the threatened population of South Chilcotin grizzly bears (Haddock, 2011). Such an outcome is likely because BC's EA legislation does not require formal cumulative impact assessment.

The *BC EAA* (2002) did not explicitly require the proponent of the Project to assess cumulative impacts. Section 11 of the *BC EAA* (2002) was amended in 2010 to give the executive director the discretion to require the evaluation of potential cumulative environmental effects; however, this is not a monitored requirement, does not define what constitutes cumulative effects, and does not provide any detail on cumulative effects assessment methodology. In addition, when cumulative effects are identified, the provincial EA process does not feature appropriate measures for managing the impacts. A cumulative impact assessment for the Project was only formally required because it triggered the federal EA process.

BC EAO's *User Guide* (2011a) states that cumulative impacts are considered to be an inherent part of the assessment process; however, the guide only provides a general outline of the information reviewed by the BC EAO when considering cumulative impacts. The reality is that several proponents have not considered cumulative effects, and the BC EAO has not required them to do so (Haddock, 2010). In addition, the BC EAO allowed the proponent of the Project to use an inappropriately large study area to consider cumulative effects. As a result, the proponent concluded that the incremental impacts of the Project were not significant when viewed within a larger geographical context. Without a mandated process, BC's EA practice for cumulative impact assessment was poorly defined, inconsistent, and not equipped to manage cumulative impacts when they were identified.

## Evaluation of Canada's Federal EA Process

Section 16 (1)(a) of the *CEA Act* (1992) required the Panel to consider any cumulative effects “that are likely to result from the project in combination with other projects or activities that have been or will be carried out.” The EIS guidelines also required the proponent to consider “the effects of the Project in combination with other future projects that are either *certain* or *reasonably foreseeable*” (CEAA, 2010 p. 128). The Panel’s main directive was to assess the significance of potential cumulative effects on vegetation, wildlife, surface and groundwater and fish and fish habitat. For their cumulative impact assessments, the Panel and the proponent were guided by CEAA’s Operational Policy Statement “*Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*, and CEAA’s “*Cumulative Effects Assessment Practitioner’s Guide*” (CEAA, 2010).

Unlike the BC EAO, the Panel concluded that the Project “would result in a significant adverse cumulative effect on the South Chilcotin grizzly bear population” (CEAA, 2010 p.141), and “in combination with an extended mine life proposal would further increase the likelihood of failure of the fish and fish habitat compensation plan and thus result in a significant adverse cumulative effect on fish and fish habitat” (CEAA, 2010 p.142). While the Panel highlighted the proponent’s proposed mitigation measures to reduce significant adverse cumulative effects, the Panel itself did not suggest appropriate means of managing the cumulative impacts.

There are also several general shortcomings of cumulative impact assessment as practiced under the *CEA Act* (1992). A key shortcoming is that the proponent bore the primary responsibility for considering and managing cumulative effects. This is problematic because proponents only consider the significance of cumulative effects at the project-level, rather than the sustainability of valued environmental components at the regional level (Doelle, 2008). An additional shortcoming is that the *CEA Act* (1992) only required the assessment of *likely* cumulative effects, and did not provide a clear statement that *all* cumulative effects must be assessed.

### 7.3.8. Fair and Equitable Outcomes

**Principle:** *The EA process and its outcomes should contain legal mechanisms that ensure that project benefits are equitably distributed, and that people directly affected by projects have equal access to compensation.*

#### **Evaluation Criteria:**

- Do individuals adversely affected by a project receive compensation?
- Is the EA process legally required to ensure that project benefits are equitably distributed?
- Are proponents and decision makers required to consider *intragenerational* and *intergenerational equity* when undertaking an assessment?
- Is the EA process required to consider distribution of project costs and benefits among stakeholders.

#### **Evaluation of BC's Provincial EA Process**

BC's EA process did not adequately address equity and compensation. The *BC EAA* (2002) and its associated regulations did not include provisions for identifying or addressing intragenerational equity, intergenerational equity, or for compensating stakeholders who are negatively affected by proposed undertakings. There are widely recognized approaches for facilitating impact management and compensation, including socio-economic agreements, impact benefit agreements, and impact management agreements. These agreements are useful for addressing the impacts of projects on local communities, serve to ensure that communities have the capacity to maximize the benefits of project development, and can address the deficiency of the EA framework in negotiating community issues. However, these agreements are at the discretion of project proponents and are not formally required by BC's EA legislation. As these negotiated agreements occur outside of the public realm, little is known about their efficacy in ensuring benefits sharing and impact compensation (Noble, 2009a).

For the Project, the lack of benefit-sharing and compensation policies was a significant limitation to an effective EA. Without such policies, the executive director was able to recommend certificate approval, despite the failure to satisfy concerns of the MOE and MEMPR regarding several of the proponent's compensation measures. The

BC EAO was also able to defer important unresolved compensation concerns until after the permitting stage (Haddock, 2011), effectively removing important compensation measures from the mandated provincial EA framework. The provincial *Assessment Report* described that the proponent would prepare a revenue-sharing program with affected First Nations; however, this would occur outside of the EA process and would not influence the outcome of the BC EAO's assessment. BC's EA process did not achieve intragenerational equity, because the Project was approved despite failure by the proponent to offer compensation for the loss of established Aboriginal rights and title. BC's EA process did not achieve intergenerational equity because the BC EAO did not account for the potential burden of the fish habitat compensation works on future generations. These shortcomings are at least in part a result of a provincial EA framework that does not formally address issues of equity and compensation.

### **Evaluation of Canada's Federal EA Process**

The federal EA framework did not include explicit provisions for compensating those potentially adversely affected by the Project. In addition, RA agencies for the Project (DFO, TC, and NRCan) did not include provisions for compensating stakeholders (e.g. Taseko Outfitters) negatively affected by the undertaking. The federal *Assessment Report* acknowledged that the proponent was prepared to negotiate an Impact Benefit Agreement with affected First Nations; however, the agreement is not required by the *CEA Act* (1992) and is ultimately at the discretion of the proponent.

While Canada's federal EA framework does not formally address issues of equity and compensation, the Panel recognized that the Project impeded intragenerational equity because the proponent failed to offer compensation for the loss of established Aboriginal rights and title. The Panel also recognised that the Project impeded intergenerational equity because the proponent did not account for the potential burden of the fish habitat compensation works on future generations. Despite this recognition of the Project's adverse effects on intragenerational and intergenerational equity, Canada's overall EA process does not contain specific provisions for compensation and distributional equity.

### **7.3.9. Adequate Resources**

**Principle:** *The decision-making bodies throughout the EA process should be adequately resourced to ensure an effective and efficient decision-making process.*

#### **Evaluation Criteria:**

- Does the process allow for sufficient time to conduct fair and comprehensive reviews?
- Does the process contain sufficient funding to allow the government to conduct a review that is in line with best practices principles?
- Does the process contain present leadership that can propel the process?

#### **Evaluation of BC's Provincial EA Process**

BC's current EA framework did not provide the BC EAO with all the practical resources that it needed to undertake an efficient and effective EA for the Project. The provincial EA framework does not contain a mechanism that allows practitioners to undertake a public hearing process, which allows for a more comprehensive, transparent and democratic assessment process. The BC EAO ultimately relied on a limited paper-based comment period, where a substantial amount of stakeholder information was received through letters and emails.

While the *Prescribed Time Limits Regulation* provided an incentive for the BC EAO to conduct an efficient EA, the imposed time limits may have significantly hindered the comprehensives of the EA, given the substantial volumes of assessment material for the Project,. It appears that the BC EAO did not have sufficient time to effectively consider the extensive scientific and public information within the prescribed time regulations. The quality and value of the information that was received form the proponent and stakeholders was dependent on review and substantiation by the BC EAO and line agencies such as the MOE; however, as both entities are continuously experiencing resource cutbacks (Haddock, 2011), they may not have had budget or personnel to verify the information that informed the core of the provincial EA process. Finally, the provincial *Assessment Report* did not specify the qualifications or expertise of the four main BC EAO professionals conducting the EA, and it is unclear if the BC

EAO had the competence to make conclusions as to the significance and justifiability of identified effects.

### **Evaluation of Canada's Federal EA Process**

The panel review for the Project was equipped with several resources in order to undertake an effective and efficient EA. The panel review was managed by a qualified panel, which was chaired by an engineer with 27 years of relevant EA experience (Haddock, 2010). For its assessment and decision-making process, the Panel had sufficient funding and time in order to conduct a comprehensive EA review that featured a public hearing process. Specifically, the public hearing process allowed the Panel to collect a more comprehensive evidentiary record upon which to base their decision.

An effective public hearing process was possible because the Panel had sufficient and flexible time to accumulate supplemental information from the proponent, RAs, First Nations, and other stakeholders. The Funding Review Committee allocated funding to stakeholders so they could effectively participate in the information gathering process. In addition, participant funding allowed the Panel to collect expert opinion from fisheries scientist Dr. Gordon Hartman and grizzly bear biologist Wayne McCrory, regarding certain information presented by the proponent. The federal EA for the Project was well resourced with respect to allocation of sufficient time and funding,

#### **7.3.10. Participative**

**Principle:** *The EA process should require meaningful public engagement and contain provisions related to public notice, comment, access to documentation, and participant funding.*

**Evaluation Criteria:**

- Does the public engagement process provide stakeholders with the genuine capacity to influence outcomes of the EA process?
- Is the public engagement process initiated early and sustained through all relevant steps of the EA process?

- Is the public engagement process supportive to participants, by providing adequate information and financial support to facilitate fair participation?
- Is the public engagement process open and transparent, and do all those interested in participating have access to all relevant information that is available in an understandable format?
- Is the public engagement process adapted to the context of the places and communities affected by the proposed development?
- Does the public engagement process promote consensus building and collaborative-shared decision-making?
- Does the process ensure that the views of stakeholders are taken into account in decision-making?

### **Evaluation of BC's Provincial EA Process**

The *Public Consultation Policy Regulation* (B.C. Reg. 373/2002) mandated general public consultation policies to be reflected in the BC EAO's assessment. These general policies included information on public consultation by the proponents, public notice, access to information, and formal public comment periods. The BC EAO also issued a general public comment policy that identified content requirements and the procedures for handling public submissions (EAO, 2011b). The public comment policy identified the electronic Project Information Centre, which is a publicly available on-line archive that featured a database of the Project and important documents pertaining to the overall EA process. The BC EAO held a standard 60-day public comment period. During the comment period, a total of 1, 218 comments were received, 938 of which were of general support, 204 of which were of general opposition, and 76 of which related to various specific issues of interest or concern (EAO, 2009). In addition, two open houses were held in 100 Mile House and Williams Lake, which were attended by approximately 600 people (BC EAO, 2009). The BC EAO's effort at collecting public input ended with receipt of public comments on the initial EA application (Haddock, 2011). The BC EAO did not provide any funding to non-First Nations participants.

The BC EAO was satisfied with the level of detail in the proponent's initial application and chose not to participate in the federal Panel's additional hearing sessions. Consequently, several critical public comments disclosed in the subsequent federal hearings did not enlighten the BC EAO's review and decision-making process.

The BC EAO's decision to overlook the additional public comments coming forward in the federal process may have been for reasons other than their reluctance to incorporate public input; however, the existence of these subsequent comments in the federal process indicates that the BC process may not have allowed sufficient time or opportunity for public comment.

In evaluating BC's current EA process, it is useful to compare it to provisions in the previous BC EA legislation. The *BC EAA* (1994) allowed for the creation of public advisory committees and project committees, which were legally mandated to provide ministers with relevant expertise, advice, analysis and recommendations, specifically pertaining to the potential effects of a reviewable undertaking, and the prevention and mitigation of associated adverse effects (*BC EAA* s.10 (a)(b), 1996). The committee's recommendations needed to be reflected in the executive director's consideration of certification applications (*BC EAA* s.9, 10, 1994). Public advisory committees gave interested stakeholders a distinct opportunity to make recommendations to project committees. These provisions were eliminated in the revised *BC EAA* (2002) legislation.

University of Victoria's Environmental Law Centre recently conducted interviews with EA participants, and found an overall sense of disenfranchisement from the EA process (Haddock, 2010). Interviewees expressed dissatisfaction with:

- the inadequate two-way dialogue with the BC EAO on matters of public concern;
- the unwillingness (in some cases) of the BC EAO to extend review and comment periods on more complicated projects with larger collections of technical documents;
- the refusal of the BC EAO to allow concerned citizens' group representatives to attend working group meetings, even as silent observers;
- the refusal of the BC EAO to hold public meetings in the main population centres affected by and/or concerned about controversial projects;
- the narrow terms of reference for public meetings;
- the failure of the BC EAO to make some relevant documentation available on its website in a timely manner prior to review and comment periods;
- the inadequate accommodation or response to public comments with regard to decision-making, recommendations, and the terms and conditions placed on EA certificates;

- the perception that the BC EAO is biased in favour of accommodating proponents; and,
- the lack of participant funding to “level the playing field” (Haddock, 2010 p. 37-38).

The *BC EAA* (2002) mandated that public consultation should be reflected in BC EAO assessment; however, the BC EAO’s disregard of critical public comments concerning the Project indicates that there were major deficiencies in the process. This may be in large part because BC’s current *Public Consultation Policy Regulation* is broadly discretionary, not prescribed as a mandatory requirement, and places a large amount of responsibility for public consultation on proponents (Haddock, 2010; Rutherford, 2009; WCEL, 2012). As a result, public consultation often fails to be well integrated into the decision making process, and remains limited to providing information and receiving and replying to comments (Haddock, Tollefson & Krindle, 2012, Rutherford, 2009). Finally, public participation methods under the provincial EA framework are adversarial and not based on principles of shared decision-making and collaboration.

### **Evaluation of Canada’s Federal EA Process**

Several sections of the *CEA Act* (1992) acknowledged the importance of meaningful public participation. Most notably, the purpose sections explicitly stated that one of the primary commitments of the *CEA Act* (1992) was to “provide opportunities for timely and meaningful public participation throughout the EA process” (s.4). The degree of public participation under the *CEA Act* (1992) was contingent of the type of assessment being carried out, and some form of public involvement was included for three out of the four established EA tracks.

The federal EA for the Project utilized a review panel, which provide the most comprehensive EAs in Canada, and offer the highest level of public participation. The Panel review included a quasi-judicial hearing process, which provided the public with an opportunity to present evidence, concerns, recommendations, and directly question the proponent’s expertise. Subsection 58 (1.1) of the *CEA Act* (1992) required the minister to establish a participant funding program to facilitate public participation in assessments by review panels. An independent Funding Review Committee was established to review

funding applications and recommend allocation of funding resources to stakeholders to participate in the assessment of the Project (CEAA, 2010). Funding was allocated to several recipients, and the recommendations of the Funding Review Committee were made available on an electronic EA registry, which provided public access to all documents relevant to the Project. The public also had an opportunity to directly comment on the Panel's *Terms of Reference*, on the EIS guidelines, and various other processes during the course of the review.

While the public hearings provided the public with the highest opportunity to engaged in the federal EA of the Project, a major flaw of the process is that the *CEA Act* (1992) did not include a legislated framework for the conduct of public hearings (Sinclair and Diduck, 2009), which subsequently left this important responsibility in the hands of the Panel. In addition, while the federal government did provide funding to facilitate public participation in the hearings, it was likely inadequate. As described by Boyd (2003), "participant funding in the first five years (of the *CEA Act*) totalled \$840 046, or about 0.5 percent of total federal expenditure on EA during this period" (p. 153).

Finally, a major substantive flaw of the federal public consultation process was its fundamentally adversarial nature, which was not based on principles of collaborative planning (CP). A collaborative approach would be more effective because it could provide a forum for all stakeholders to be meaningfully incorporated into a consensus-based negotiation process, which strives to reach an agreement that meets the interests of all parties (Cullen et al. 2010; Gunton and Day, 2003). The benefits of restructuring the EA process to reflect principles of CP are discussed in the final chapter. As supplemental material, appendix box F4 highlights recent changes to the *CEA Act* with respect to public participation

### **7.3.11. Obligations to First Nations Met**

**Principle:** *Jurisdictions that are conducting the EA must ensure that their legislation, policies, guidelines, and fiduciary obligations reflect and address the evolving law of the land with respect to Aboriginal and treaty rights and title.*

### **Evaluation Criteria:**

- Are project proponents well informed about the law of the land regarding Aboriginal rights and title?
- Is there an explicit First Nations consultation policy that meets the legal obligations of the government to consult and accommodate First Nations?
- Is consultation with First Nations primarily the responsibility of Canada and BC throughout the EA process?

### **Evaluation of BC's Provincial EA Process**

Section 3.4 provides an overview of the key concepts of Canadian Aboriginal law that directly affected the role of First Nations in BC and Canada's respective EA processes. The *BC EAA* (2002), which mandated First Nations engagement in the assessment of the Project, includes policies and guidelines for consulting and involving First Nations in EAs. First Nations had an opportunity to review the Project's assessment framework and *Terms of Reference* during the EA pre-application stage, and an additional opportunity to review the draft *Assessment Report* and the specified conditions for the issuance of an EA certificate during the EA application review stage (BC EAO, 2010). First Nations were consulted more comprehensively than the public at large through their inclusion in the Working Group, which advised the BC EAO about issues related to the assessment of the Project (BC EAO, 2010). In addition, the BC EAO encouraged the proponent to consult First Nations early, ideally before the project formally entered the EA process, and to involve them throughout their assessment process (BC EAO, 2010; Rutherford, 2009).

BC's EA process for the Project included policies and guidelines for consulting and involving First Nations; however, it failed to provide First Nations with a legally meaningful opportunity to directly advise ministers, as was the case when they participated in project committees. Many First Nations were opposed to BC's EA approach. In particular, the Tsilhqot'in Nation believed that the provincial Minister's decision to abandon the joint review panel was "unfair, inappropriate and in bad faith" (BC EAO, 2009 p. 130). The Tsilhqot'in Nation perceived the Minister's decision as a bias in favour of the proponent, which ultimately led to a major breach in the relationship (Haddock, 2011). As a consequence, the Tsilhqot'in Nation stopped participating in the

provincial process and concentrated their efforts towards providing information to the Panel. This left the BC EAO without crucial information that was needed to understand the Project's effect on First Nations. The BC EAO had to rely on the proponent's EIS reports, the findings in the BC Supreme Court's *William* decision, and incomplete First Nation's information that was initially submitted to the Panel (Haddock, 2011).

Many First Nations feel that BC's current EA framework does not adequately address their interests and concerns, or meaningfully involve them in the EA process (Booth & Skelton, 2011; Boyd, 2003; Paci et al., 2002; Plate et al., 2009; Rutherford, 2009). Some of the growing dissatisfaction with the process among First Nations stems from the amendments to the *BC EAA* in 2002. Through the amendments, the provincial government eliminated the mandatory requirements for First Nations participation in project committees, a purpose section emphasizing sustainability, and the requirement to examine cumulative effects (Boyd, 2003; Browne, 2009; Rutherford, 2009). Browne (2009) explicitly states that BC has gone backwards in terms of First Nations participation in EAs (p.482). In July 2009, the New Relationship Trust identified several issues of common concern to First Nations, and summarized the main weaknesses of BC's EA process with respect to First Nations as follows:

- Unsatisfactory aspects of the EA process, e.g. the way in which *Terms of Reference* are developed and used;
- Legislated time-lines for various steps in the EA process that aren't consistent with First Nation decision-making processes;
- An inability of the environmental-assessment process, or an unwillingness of public governments or proponents, to meaningfully consider many values of importance to First Nations;
- Lack of clarity and consistency on how the significance of project effects are determined;
- An unsatisfactory cumulative effects process that does not properly take into account impacts of all types of development that have occurred in the past;
- An unsatisfactory role for First Nations in decision-making;
- Unsatisfactory funding mechanisms and insufficient levels of funding for meaningful participation in EA review processes; and
- Project proponents who are unenlightened about First Nation rights and interests and merely see First Nation participation as another obstacle to overcome in the pursuit of their project (Plate et al., 2009).

In their *Assessment Report*, the BC EAO was satisfied with the proponent's efforts at consultation with First Nations. The BC EAO concluded that First Nations consultation was "appropriate and reasonable," "carried out in good faith," with the "intention of sustainably addressing concerns" of the affected First Nations, and that "impacts on established and admitted rights were justifiable" (BC EAO, 2009 p. 103-135) (for more information see chapter 6, section 6.2.3). Unlike the federal Panel, the BC EAO did not determine that the Project would have any significant adverse effects on Aboriginal rights or on the traditional land use and cultural heritage of the affected First Nations. This determination was a product of a deficient evidentiary record from First Nations, and an ambiguous proponent driven consultative process.

### **Evaluation of Canada's Federal EA Process**

Several provisions of Canada's EA legislation clearly brought the potential impact of the Project on Aboriginal peoples squarely within the scope of the federal EA process. This made the active engagement of potentially affected Aboriginal communities essential to the Panel's assessment. Policies and guidelines within the *CEA Act* (1992) included several procedures for consulting and involving First Nations in the process. Under the *CEA Act* (1992), the role of aboriginal peoples was primarily established in the Purposes section, which specifically referred to the promotion of "communication and cooperation between responsible authorities and Aboriginal peoples with respect to environmental assessment" (*CEA Act*, s.4 (b.3), 1992). In the *CEA Act's* (1992) definition of environmental effects it included effects of biophysical changes on "physical and cultural heritage", on "the current use of lands and resources for traditional purposes by aboriginal persons", and on "any structure, site or thing that is of historical, archaeological, paleontological or architectural significance" (*CEA Act*, s.2 (b.ii, iii, iv), 1992). Section 16.1 specified, "community knowledge and Aboriginal traditional knowledge may be considered in conducting an environmental assessment" (*CEA Act*, s.16.1, 1992). Finally, the *CEA Act* (1992) highlighted that one of the objectives of the CEAA was "to engage in consultation with aboriginal peoples on policy issues related to this Act" (*CEA Act*, s.62 (h), 1992).

For its assessment of the Project, the Panel had the mandate to invite information from First Nations related to the potential adverse impacts or infringements that the undertaking may have on potential or established Aboriginal rights or title. In accordance with Section 16.1 of the *CEA Act* (1992), the Project's potential impacts on local First Nations clearly fell within the Panel's mandate to assess the environmental effects (CEAA, 2010). The Panel did not however have the mandate to make determinations as to the validity and strength of these rights, the scope of the Crown's duty to consult First Nations, and whether Canada has met its duty to consult and accommodate the rights recognised and affirmed by section 35 of the *Constitution Act* (1982) (CEAA, 2010). Affected and engaged First Nations contributed to the various hearing sessions, commented to the Panel at various stages of the EIS review, examined the draft *Terms of Reference*, and reviewed information regarding the possible cumulative effects of an extended mine life scenario. However, the question that remains is whether the EA process itself was an appropriate tool to satisfy the federal Crown's duty to consult (Doelle, 2008).

Canada's current EA regime was not designed with a view to fulfilling the duty to consult and accommodate (Pape, 2009). Currently, this issue is being resolved on a case-by-case basis, and it is unclear whether consultation should occur separately from EA, whether to link the two processes, or whether to develop a new process altogether (including the use of collaborative planning and Impact Benefit Agreements) (Doelle, 2008). The Project EA regime required the proponent, regulatory bodies, and the Panel to carry the real burden of consultation with Aboriginal peoples. This is not appropriate to satisfy the Crown's duty to consult, as these groups are not agents of the government that carry the honour of the Crown's consultation obligations (Pape, 2009). In addition, the Panel did not have the mandate, means, or authority to negotiate accommodation measures. Given these issues, it is clear that the federal assessment of the Project, which engaged First Nations much more comprehensively than the provincial EA, also suffered from several substantive barriers to meaningful engagement of First Nations in the review and decision-making process.

### **7.3.12. Monitored and Enforced Compliance**

**Principle:** *The EA process should include a follow-up program that clearly outlines the mechanisms by which the assessment commitments and approval conditions are monitored and enforced, including a clear notification of penalties for agreement infractions and non-compliance.*

#### **Evaluation Criteria:**

- Does the process include comprehensive approval statements regarding procedures and techniques associated with impact monitoring and compliance enforcement?
- Does an impartial and independent body monitor the process?
- Does the process include explicitly assigned enforcement responsibilities and resources?
- Does the process include substantial legislated penalties and remediation requirements for non-compliance?
- Do informed civil society organizations and motivated local stakeholders have the ability to monitor compliance, and is effectiveness publicly reported?

#### **Evaluation of BC's Provincial EA Process**

Given that the Project was not approved and is not proceeding, the case study does not provide any evidence regarding the effectiveness of BC EA monitoring and compliance. However, there are several post-certification issues that need to be addresses with BC's EA process, which specifically include monitoring, compliance and enforcement provisions. If the Project were approved, the BC EAO would be responsible for its oversight to ensure that post-certification issues are properly addressed (BC AG, 2011).

In 2011 the BC Auditor General (BC AG) highlighted significant deficiencies with the post-certification part of BC's EA process. The BC AG team specifically evaluated the effectiveness of the BC EAO in managing post-certification issues. The team concluded that the BC EAO's "oversight of certified projects is not sufficient to ensure that potential significant adverse effects are avoided or mitigated" (BC AG, 2011 p.6). Specifically, the BC AG criticized the BC EAO for:

- not ensuring that certificate commitments are measurable and enforceable;
- not ensuring that certificate responsibilities are clearly defined;
- not ensuring that enforcement actions are effective;
- not evaluating the effectiveness of EA mitigation measures; and
- not making the outcome of post-certification provisions available to the public (BC AG, 2011 p. 16).

Inadequate enforcement provisions also weaken BC's post-certification process because the BC EAO does not have a field presence, or a realistic compliance and enforcement strategy (Haddock, 2010). The BC EAO predominantly relies on "proponent self-monitoring" and "complaints monitoring" to acquire information about compliance and enforcement (BC EAO, 2011a). However, the BC EAO does not formally track certified project conditions and commitments, or the submitted complaints (BC AG, 2011).

Part 5 (Sanctions) of the *BC EAA* (2002) sets out enforcement mechanisms. In cases of non-compliance with an EA certificate, the BC EAO has the power to sequentially apply the following steps: education and discussion, formal letters, penalties, and ultimately the suspension or cancellation of an EA certificate (BC EAO, 2011a). However, at the time of the audit by the AG, the BC EAO had yet to administer penalties or deem EA certificate suspension or cancellation necessary (BC AG, 2011). Haddock (2010) warns that compliance with the terms and conditions of certificates may be falling through the cracks (p. 69).

For its assessment of the Project, the BC EAO frequently referenced the importance of the proponent's commitments, mitigation measures, and monitoring strategies, in ensuring that the Project would be constructed, operated and decommissioned as proposed. However, many mitigation and monitoring commitments were left ambiguous and unresolved, and were repeatedly deferred to the subsequent permitting stage of the assessment. As such, many of the post-certification issues that were identified by the BC AG (2011) were evident in the BC EAO's assessment (Haddock, 2011), and could ultimately compromise the intended operation of the Project.

## Evaluation of Canada's Federal EA Process

The *CEA Act* (1992) required that the assessment by a panel include a consideration of “the need for, and the requirements of, any follow-up program in respect of the project” (s.16 (1)(d)). The *CEA Act* (1992) defined *follow-up* 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” (s. 2(1)). This general definition did not specifically discuss compliance monitoring, and the legislation was left open as to how the results of a follow-up program should be used for project management and future EAs (Doelle, 2008).

As the Project is not proceeding, the case study also cannot provide evidence regarding the effectiveness of Canada's EA monitoring and compliance provisions. For the Project, the proponent committed to implement a follow-up and monitoring program; however, the *CEA Act* (1992) and the federal *Assessment Report* vaguely outlined compliance-monitoring provisions, and did not describe how the results of the follow-up program should be used for project management. Furthermore, it was not clear if the proponent is required to disclose the data from follow-up program results. Finally, the federal *Assessment Report* did not include mandated decision statements to ensure compliance and promote enforcement.

Under the *CEA Act* (1992), most of the follow-up process requirements were left to the RAs. Section 38 gave the RAs the discretion to “design a follow-up program for the project and ensure its implementation” (*CEA Act*, s. 38(2), 1992). If the proponent is an RA, the process was not necessarily monitored and enforced by an impartial and independent body. The proponent committed to implementing a follow-up and monitoring program to meet applicable federal permits and expectations of the respective RAs (CEAA, 2010). However, the value of the follow-up program was uncertain because the *CEA Act* (1992) did not provide guidance on follow-up program design, information requirements, and information response provisions. Specifically, the *CEA Act* (1992) did not:

- explicitly require proponents or RAs to adjust mitigation measures of an approved project if the follow-up program uncovers substantial unanticipated adverse impacts; and

- explicitly require that the results of the follow-up program be used to improve the prediction of impacts and design of mitigation measures in future EA's.

This means that under the *CEA Act* (1992), treatment of follow-up results was discretionary, and results may have been used to improve current projects, future assessments, both or neither (Dolle, 2008) In addition, the timing of follow-up efforts generally occurred well after the conclusion of the EA processes itself.

The *CEA Act* (1992) also failed to describe explicit legal tools to ensure compliance and promote enforcement; however, the 2003 amendments to the original *CEA Act* modestly improved compliance and enforcement measures by introducing an EA coordinator to encourage more consistent and better-coordinated implementation of the legislation (Doelle, 2008). The amendments also required proponents to publicly reveal the results of their follow-up programs; however, it was unclear if this included the date collected and method used. Finally, The *CEA Act* (1992) also required that the CEAA establish and lead a quality assurance program for EAs.

The *CEA Act* (1992) also contained weak enforcement of mitigation measures. This was confirmed in the case of *Environmental Resource Centre v. Canada (Minister of Environment)* [2001] FCT 1423 ("*Suncor*"), which identified that federal authorities were reliant on voluntary provincial mitigation requirements to ensure implementation of the mitigation measures specified in their EAs (Herring, 2009). This reliance did not include a legal assurance that the proponent would follow the mitigation measures in the future (Herring, 2009). In the *Suncor* case, the court decided that that RAs could only consider mitigation measures if they were able to fully control their implementation (Doelle, 2008). Several of these shortcomings are addressed in the new *CEA Act*. As supplemental material, appendix box F5 highlights recent changes to the *CEA Act* with respect to enforcement and compliance.

### **7.3.13. Features an Appeal Process**

**Principle:** *The EA process should include an accessible appeal mechanism to an independent review body for participants dissatisfied with the process or its outcomes.*

**Evaluation Criteria:**

- Is the appeal process efficient and narrowly defined, in order to prevent unnecessary delays?
- Are appeals allowed on matters of substance and procedure?
- Do independent review bodies, instead of the original decision-makers, hear appeals?
- Are appeals dealing with procedural steps allocated to the courts, while appeals on matters of substance are allocated to independent appeal boards with expertise on substantive matters?

**Evaluation of BC's Provincial EA Process**

BC's EA process and its legislation do not include an explicit right of appeal. Participants who are dissatisfied with the Project review and decision making process, are restricted to remedies available on a judicial review application (Rutherford, 2009). However, judicial review is not an appropriate substitute for explicit statutory rights of appeal, as courts are reluctant to substantive issues of science and policy when reviewing EA decisions (Boyd, 2003; Haddock, 2010). BC's EA legislation lacks substantive criteria; therefore, courts perceive EA decision making as non-reviewable political process, and judicial review remains limited to addressing the legality of decisions and not the substantive issues that lack accountability (Haddock, 2010; Lucas, 1993).

In addition, BC lacks an environmental court for EA appeals, and agencies and stakeholders that were involved in the EA of the Project did not have an internal appeal mechanisms (Haddock, 2010). The BC EAO, as an EA decision-maker, could not duplicate the functions of the BC Environmental Appeal Board (EAB). The EAB, which is an independent quasi-judicial body that hears appeals on environmental decisions made by government officials, does not hear appeals made under the *BC EAA* (2002). Overall, the provincial EA process for the Project did not include an adequate appeal process.

## Evaluation of Canada's Federal EA Process

Canada's EA process and its legislation did not include an explicit right of appeal. For stakeholders who do not agree with a decision made by the Panel or responsible ministers, judicial review by the Federal Court was the only avenue for appeals. In general, if stakeholders are unsatisfied by administrative environmental decisions, they can challenge the decision based on the *merits of the decision*, or the *fairness of the decision making process* (Muldoon, 2009). When reviewing the merits of the decision, courts look at whether the decision maker acted outside of its statutory jurisdiction or made any other errors of law (Muldoon, 2009). When reviewing the fairness of the decision making process, courts look at whether the decision makers used incorrect procedures, were subjective, or committed any other errors that rendered the process unfair (Muldoon, 2009).

Judicial review was been successful in enforcing firm legal obligations of the *CEA Act* (1992) on issues such as public access to information, and consideration of alternatives and cumulative effects (Dolle, 2008). However, when it came to many important discretionary provisions of the *CEA Act* (1992), such as scope of the project, the scope of the assessment, the EA track, and the role of the public, courts displayed a high degree of deference to RAs (Doelle, 2008). Overall, as emphasized by Van Hinte et al. (2007), court appeals are costly, lengthy, and founded on ambiguous decision-making criteria. In addition, Muldoon (2009) highlights that it has not been the role of courts to second-guess administrative decision-makers. Overall, the federal EA process for the Project did not include an adequate appeal process.

### 7.3.14. Mechanisms for Adaptive Management and Continuous Learning

**Principle:** *The EA process should feature an adaptive management mechanism for monitoring key environmental and socio-economic indicators throughout the lifespan of the project, in order to acknowledge, anticipate, and respond to changing project conditions and circumstances.*

**Evaluation Criteria:**

- Do adaptive management provisions include preference for diversity?
- Do adaptive management provisions include preference for safe-fail technologies?
- Do adaptive management provisions include preference for reversibility and substitutability?
- Do adaptive management provisions include preference for the preparation of fall-back options and plans for careful monitoring?
- Do adaptive management provisions include a role for stakeholder and informed citizens to inform the design, implementation, and adjustment of monitoring programs?

**Evaluation of BC's Provincial EA Process**

BC's EA framework, including the *BC EAA* (2002), does not support adaptive management for the Project. In addition, the *BC EAA* (2002) only allows the holder of an EA certificate to request to amend the certificate (*BC EAA* s.19 (1), 2002). In other words, amendment of an EA certificate to allow adaptive management is at the discretion of the proponent. If the BC EAO or ministers determined that the impacts of the Project were greater than anticipated, and that adaptive management measures were necessary, there would be little that they could do to correct the problem (Haddock, 2010). For its assessment of the Project, the BC EAO accepted all of the proponent's monitoring commitments; however, without clear standards for adaptive management that are directly incorporated into the EA certificate, monitoring commitments may be unsupported promises for addressing uncertainties identified in an initial EA process.

Furthermore, the BC EAO concluded that it had sufficient information to assess the potential for adverse effects of the Project, without implementing proactive adaptive management strategies prior to its recommendation for certificate approval. This was an inherently risky decision given the concerns raised by external researchers, such as Dr. Levy of Mining Watch Canada (Levy, 2009). If the BC EAO subsequently determined that the impacts of a project were greater than anticipated, and that adaptive management measures were necessary, there would be no clear provisions for them to amend EA approvals, even if it was necessary in order to protect the environment.

## **Evaluation of Canada's Federal EA Process**

Section 38 of the *CEA Act* (1992) specifies, "the results of follow-up programs may be used for implementing adaptive management measures or for improving the quality of future environmental assessments" (s. 38(5)). Accordingly, the proponent of the Project committed to incorporating an adaptive management strategy, which would include contingency planning and ongoing monitoring, and is supposed to be responsive to unforeseen adverse effects that may arise during the life of the undertaking. However, the proponent's commitments were vague, and not explicitly required by EA legislation, which as highlighted in the legal citation above, used non-mandatory language. The *CEA Act* (1992) did not explicitly require the proponent to adjust mitigation measures of its undertaking if unforeseen adverse effects arise. This significant shortcoming of the EA legislation compromises the value of the proponent's commitment to adaptive management.

### **7.3.15. Impartial and Democratically Accountable Administration**

**Principle:** *Major decisions throughout the EA process should be directed by impartial and expert authorities, which are accountable through the democratic process to those affected by the decisions.*

#### **Evaluation Criteria:**

- Is the EA process administered by impartial and expert authorities?
- Are the findings from the EA process prepared by an impartial expert authority?
- Are the final decisions on the EA made by democratically accountable decision-makers based on recommendations from independent experts?
- Are expert authorities subject to independent auditing with public reporting?

## **Evaluation of BC's Provincial EA Process**

BC's EA process generally meets this criterion. The democratically elected provincial Minister of Environment and Minister of Energy, Mines and Petroleum Resources were the ultimate decision-makers with respect to the provincial assessment

of the Project, and made their decision based on recommendations from the BC EAO, which is comprised of expert civil servants. The majority of major decisions regarding the design and management of the EA process were delegated to the BC EAO and its executive director. The BC EAO is not really an independent or impartial authority as it is required to, “take into account and reflect government policy identified for the executive direct” (*BC EAA*, s.11 (3), 2002). The BC EAO is, however, subject to independent auditing by the Office of the Auditor General. The BC AG has recently conducted an audit on how well the BC EAO was managing its administrative responsibilities; however, it remains unclear if and how the AG’s recommendations are incorporated into administrative improvements.

As noted in a previous section, a shortcoming of having the BC EAO administer the Project EA was that the *BC EAA* (2002) does not provide the agency with an objective list of principles for undertaking the assessment. This could compromise its ability to keep the process impartial, accountable, and transparent, and could make it more susceptible to political interference.

### **Evaluation of Canada’s Federal EA Process**

The federal EA process also generally meets this criterion. The ultimate decision-maker for the Project EA at the federal level was the democratically elected Environment Minister, who based his decision on recommendations from an independent expert panel. The majority of major decisions throughout the EA process were delegated to the RAs and the Panel. These federal entities are subject to auditing by the Office of the Auditor General of Canada, which is responsible for determining if they are complying with key provisions of the *CEA Act*. A strength of the federal EA process relative to the BC process is that the Panel is guided by more explicit requirements and criteria and is therefore less susceptible to political interference.

#### **7.3.16. A Strong Legislative Foundation**

**Principle:** *The EA regimes should be formally structured through legislation and regulations.*

### **Evaluation Criteria:**

- Does the EA legislation and its regulations:
  - Have a clearly stated purpose, and does it promote sustainability?
  - Include monitoring and enforcing provisions?
  - Enforce meaningful engagement of the public and First Nations?
  - Use mandatory and non-discretionary language?
  - Specify the roles, responsibilities, and authority of those involved?

### **Evaluation of BC's Provincial EA Process**

The legal basis for the provincial assessment of the Project is contained in the *BC EAA* (2002), and its associated regulations. However, as shown in the previous sections, many of the key components of the EA process are not contained in the legislation or regulations. The main legislative deficiencies that compromised the effectiveness of the *BC EAA* (2002), include:

- A lack of mandated and clear decision-making criteria.
- No mandated list of objective purposes for undertaking an assessment;
- No mandated commitment to sustainability and to the application of sustainability-based objectives and criteria;
- No guidance for mitigating environmental impacts from projects;
- No guidance with respect to meaningful stakeholder involvement;
- Inadequate provisions to address multi-jurisdictional overlap;
- Inadequately enforced compliance provisions; and,
- Use of non-mandatory and discretionary language.

### **Evaluation of Canada's Federal EA Process**

The legal basis for the federal assessment of the Project was contained in the *CEA Act* (1992), and its associated regulations. However, as shown in the previous sections, some components of the EA process are not contained in the federal EA legislation. The main components omitted from the *CEA Act* (1992), include:

- Clear decision-making criteria at multiple key steps of the federal EA process;
- Guidance on scoping provisions;

- Clear provisions to address multi-jurisdictional overlap;
- Mandated provisions for meaningful public and First Nations consultation that can directly influence the final EA decision;
- Clear requirements for monitoring and enforcement, and non-discretionary penalties for non-compliance; and,
- Mandatory and non- discretionary language.

**Table 7-2: Evaluation Results for the Provincial and Federal EA Processes**

EA Best Practice Criteria	Provincial Evaluation	Federal Evaluation
	<i>Key Shortcomings</i>	<i>Key Shortcomings</i>
Clearly Defined Roles and Responsibilities	<ul style="list-style-type: none"> <li>Mechanisms that support multi-jurisdictional cooperation are vague, ambiguous, and not mandatory.</li> <li>The role of the BC EAO is poorly defined and was not guided by an explicit list of principles in legislation.</li> <li>The role of First Nations is not clearly defined in the BC EA framework.</li> </ul>	<ul style="list-style-type: none"> <li>The federal EA process was unable to engage the province in a joint EA, and the roles and responsibilities of parties involved in multijurisdictional assessments are not supported by an effective joint agreement.</li> </ul>
Clearly Defined Decision-Making Criteria	<ul style="list-style-type: none"> <li>BC's EA framework does not include legislated criteria to guide the BC EAO and ministers in their significance determinations, recommendations and decision-making process.</li> <li>The BC EAO does not have an explicit list of principles to guide the purpose of its EA.</li> </ul>	<ul style="list-style-type: none"> <li>Canada's federal EA process is vague with respect to decision-making criteria, and there is a high level of discretion embedded within several important stages of the assessment.</li> </ul>
Sound and Clearly Defined Methods of EA	<ul style="list-style-type: none"> <li>The <i>BC EAA</i> (2002) and regulations are very general, and as such, provide EA practitioners with little practical guidance on standard assessment methodology.</li> <li>Without a standard methodology, fundamental assessment elements are essentially negotiated between the BC EAO, agencies, and the proponent, and can vary from assessment to assessment.</li> </ul>	<ul style="list-style-type: none"> <li>The predictive EA methods for informing the Panel and decision-makers are outlined; however, the methods by which decision-makers incorporate these predictions into their evaluation is unclear.</li> <li>There is a lack of standards or uniform training and professional guidelines for the proponent preparing an EIS, which can result in unreliable predictions within the project application.</li> </ul>
Adequate and Objective Information	<ul style="list-style-type: none"> <li>The proponent, who is not an objective party, provides the majority of information that informs the EA process. For the Project, the BC EAO relied heavily on the proponent's EIS.</li> <li>The proponent providing the information does not have clear legislated information requirements, standards, or professional guidelines to follow.</li> <li>Given this approach, information set out in the proponent's application can be vague, insufficient (content and quality), based on poorly described methods, and questionable in terms of reliability.</li> </ul>	<ul style="list-style-type: none"> <li>The federal EA process suffers from the same major deficiency as the provincial EA; namely, the proponent provides the majority of the information. However, for the Project, the Panel did not rely on the proponent's EIS as heavily as did the BC EAO.</li> </ul>
Alternatives Assessment	<ul style="list-style-type: none"> <li>The <i>BC EAA</i> (2002) does not require consideration and evaluation of project alternatives.</li> <li>The alternatives assessment outlined in the provincial</li> </ul>	<ul style="list-style-type: none"> <li>While the <i>CEA Act</i> (1992) requires an alternatives assessment for panel reviews, the proponent undertook the alternatives assessment, which compromises the objectivity of the practice.</li> </ul>

	<p><i>Assessment Report</i> for the Project was vague, and did not specify how important conclusions on alternative economic and technical matters were ultimately reached.</p>	<ul style="list-style-type: none"> <li>The <i>CEA Act</i> (1992) only requires a <i>consideration</i> of alternatives mean of carrying out a project.</li> <li>It is not clear how the outcomes of the alternatives assessment are incorporated into the final EA decision for the Project.</li> </ul>
<b>Process Efficiency</b>	<ul style="list-style-type: none"> <li>BC's EA of the Project was efficient in that it reached a decision within the limits of available time and resources; however, this comes at a cost of covering all significant environmental effects and stakeholder concerns.</li> <li>The ultimate decision-making process for the Project was not efficient because there were two EAs trying to address the same matters at the project-level.</li> </ul>	<ul style="list-style-type: none"> <li>The federal EA process suffered from the same efficiency shortcomings as the provincial EA, in that poorly resolved overlapping regulatory and approval process ultimately resulted in two EAs trying to address the same matters at the project-level. This results in a costly, lengthy, duplicative, and uncertain EA process.</li> </ul>
<b>Consideration of Cumulative Impacts</b>	<ul style="list-style-type: none"> <li>The <i>BC EAA</i> (2002) does not explicitly require a cumulative impacts assessment for reviewable undertakings.</li> <li>The cumulative impacts assessment for the Project, which was triggered by the federal EA process, was poorly defined, discretionary, inconsistent, and not equipped to manage identified cumulative impacts.</li> </ul>	<ul style="list-style-type: none"> <li>The <i>CEA Act</i> (1992) only requires the assessment of <i>likely</i> cumulative effects, and does not provide a clear statement that <i>all</i> cumulative effects must be assessed.</li> <li>The proponent bears the primary responsibility for considering and managing cumulative effects.</li> <li>The Panel does not suggest appropriate means of managing the identified cumulative impacts.</li> </ul>
<b>Fair and Equitable Outcomes</b>	<ul style="list-style-type: none"> <li>The <i>BC EAA</i> (2002) and its associated regulations do not include provisions for addressing equity and compensating stakeholders who were negatively affected by the Project.</li> </ul>	<ul style="list-style-type: none"> <li>The federal EA framework does not include explicit provisions for compensating those adversely affected by the Project.</li> <li>RAs for the Project do not include provisions for compensating negatively affected stakeholders.</li> <li>Impact Benefit Agreements are not explicitly required by the <i>CEA Act</i> (1992) and are ultimately at the discretion of the proponent.</li> </ul>
<b>Adequate Resources</b>	<ul style="list-style-type: none"> <li>Budgetary and resource cutbacks, restrictive time-limits, and an absence of clear regulated standards and thresholds leaves the BC EAO unable to complete consistent and effective EA for reviewable undertakings.</li> </ul>	<ul style="list-style-type: none"> <li>While the federal EA under the <i>CEA Act</i> (1992) was well resourced with respect to allocation of sufficient time and funding, the Panel did not have clear decision-making standards to ensure an overall sound and effective EA process.</li> </ul>
<b>Participative</b>	<ul style="list-style-type: none"> <li>The public engagement process are broadly discretionary, not prescribed as a mandatory requirement, and place a large amount of responsibility for public consultation on the proponent.</li> <li>It is not clear if public consultation is meaningful for decision-makers.</li> <li>Public participation is limited to providing information and receiving and replying to comments.</li> </ul>	<ul style="list-style-type: none"> <li>Under the <i>CEA Act</i> (1992), panel reviews provided the strongest form of public participation; however, the legislation did not include a legislated framework for the conduct of public hearings, which subsequently left this important responsibility in the hands of the proponent and the panels.</li> <li>The public consultation process under the federal EA framework is fundamentally adversarial, and not based on principles of collaborative planning.</li> <li>Stakeholders are only given opportunities to provide comments on the projects and do not have the opportunity to engage in a shared decision-making process.</li> </ul>

<p><b>Obligations to First Nations Met</b></p>	<ul style="list-style-type: none"> <li>• BC's EA process fails to provide First Nations with a legally meaningful opportunity to directly advise ministers and the overall decision-making process.</li> <li>• Overall, the <i>BC EAA</i> (2002) has gone backwards with its treatment of First Nations issues by eliminating the mandatory requirements for their participation in project committees, a purpose section emphasizing sustainability, and the mandated requirement to examine cumulative effects.</li> </ul>	<ul style="list-style-type: none"> <li>• The proponent, the Panel, and the regulatory bodies do not have the mandate, means, or authority to negotiate all accommodation measures.</li> <li>• The federal EA process alone is not an appropriate tool to satisfy the federal Crown's duty to consult, as it was not originally designed for this purpose.</li> <li>• The federal EA regime requires the proponent and regulatory bodies to carry the real burden of consultation with Aboriginal peoples; however, the proponent is not an agent of the government and does not carry the honour of the Crown's consultative obligations.</li> <li>• It is unclear whether consultation should occur separately from EA, whether to link the two processes, or to whether to develop a new process altogether.</li> </ul>
<p><b>Monitored and Enforced Compliance</b></p>	<ul style="list-style-type: none"> <li>• The BC EAO is responsible for overseeing the approved project, and ensuring that post-certification issues are properly addressed; however, at the time of the Project EA, the BC EAO did not have a field presence, or a realistic compliance and enforcement strategy.</li> <li>• To acquire information about compliance and enforcement, the BC EAO relies on the proponent's self-monitoring and complaints monitoring; however, this information is not formally tracked for certified projects.</li> <li>• The BC AG (2011) recently found that BC EAO's "oversight of certified projects is not sufficient to ensure that potential significant adverse effects are avoided or mitigated" (p.6).</li> </ul>	<ul style="list-style-type: none"> <li>• The <i>CEA Act</i> (1992) vaguely outlined compliance monitoring provisions, and did not describe how the results of the follow-up program should be used for project management and future EAs.</li> <li>• It is not clear if the proponent needs to disclose that data behind follow-up program results.</li> <li>• The federal <i>Assessment Report</i> does not include mandated decision statements that ensure compliance and promote enforcement.</li> </ul>
<p><b>Features an Appeal Process</b></p>	<ul style="list-style-type: none"> <li>• BC's EA process and its legislation do not include an explicit statutory right of appeal.</li> <li>• Judicial review is not an appropriate substitute for legislated rights of appeal.</li> <li>• The EAB does not hear appeals of decisions made under the <i>BC EAA</i> (2002).</li> </ul>	<ul style="list-style-type: none"> <li>• Canada's EA process and its legislation do not include an explicit statutory right of appeal.</li> <li>• The Federal Court is the only avenue for appeals; however, court appeals are costly, lengthy, and founded on uncertain decision-making criteria.</li> <li>• Courts are reluctant to second-guess administrative decision-makers on substantive matters within the expertise of the decision makers.</li> </ul>
<p><b>Adaptive Management and Continuous Learning</b></p>	<ul style="list-style-type: none"> <li>• BC's EA process, including the <i>BC EAA</i> (2002), does not support adaptive management.</li> <li>• Amendment of an EA certificate to allow adaptive management is at the discretion of the proponent.</li> </ul>	<ul style="list-style-type: none"> <li>• While the <i>CEA Act</i> (1992) made a commitment to adaptive management, it is vague and uses non-mandatory language to promote adaptive management measures.</li> <li>• The <i>CEA Act</i> (1992) did not explicitly require the proponent to adjust mitigation measures if unforeseen adverse effects arose.</li> </ul>

<p><b>Democratically Accountable Administration</b></p>	<ul style="list-style-type: none"> <li>• While democratically elected provincial Ministers are the ultimate decision-makers, the majority of major decisions throughout the EA process itself are directed to the BC EAO and its executive director.</li> <li>• The <i>BC EAA (2002)</i> does not provide the EAO with an objective list of principles for undertaking the assessment.</li> </ul>	<ul style="list-style-type: none"> <li>• The ultimate EA decision-makers at the federal level are the democratically elected officials, important decision-making authority throughout the EA is delegated to RAs and independent expert panels.</li> <li>• Democratic accountability would be enhanced if the process was founded on a consensus-based collaborative-shared decision-making process.</li> </ul>
<p><b>A Strong Legislative Foundation</b></p>	<ul style="list-style-type: none"> <li>• While the structure of provincial EAs is formally mandated through the <i>BC EAA (2002)</i>, the value of the legislation is highly compromised by: <ul style="list-style-type: none"> <li>○ vague wording,</li> <li>○ poorly defined decision-making criteria;</li> <li>○ the high level of discretion given to the ministers and the BC EAO to prescribe the EA process;</li> <li>○ a lack of legislated commitment to sustainability;</li> <li>○ a lack of mandatory requirements for providing information and consulting the public;</li> <li>○ unstructured public participation provisions</li> <li>○ the absence of a legislated role for First Nations throughout the process; and.</li> <li>○ the inadequate post-certification follow up process.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• While the structure of federal EAs was formally mandated through the <i>CEA Act (2012)</i>, the value of the legislation was highly compromised by: <ul style="list-style-type: none"> <li>○ vague wording;</li> <li>○ highly unclear and discretionary assessment and decision-making criteria;</li> <li>○ unstructured public and First Nations consultation provisions;</li> <li>○ poorly defined compliance and enforcement provision;</li> <li>○ insufficient provisions to address multi-jurisdictional overlap.</li> </ul> </li> </ul>

## **7.4. Evaluation Limitations and Future Research**

The first limitation of this research relates to the best practices criteria used for the evaluation. The criteria are based on a review of primary and secondary literature. The best practice principles, established in Chapter 2, are largely based on similar EA evaluation principles used by Canadian researchers at SFU's REM program. Several principles were refined using relevant scholarly literature, peer-reviewed journals, and specific EA reports and transcripts. While these evaluation criteria are based on an extensive literature review, the criteria have not been empirically tested to assess the degree to which they result in better EA outcomes. Additional research therefore is required to assess the validity of the criteria.

Second, the evaluation of the EA processes is based on the views of one researcher. Given the general nature of some of the criteria and the inevitable discretion in the evaluation, the conclusions may vary depending on who undertakes the evaluation. Relying on the views of more experts and stakeholders involved in the EA processes through expert surveys would enhance the validity of the findings. A survey of stakeholder perceptions of the respective EA processes could highlight areas of disconnect between the EA framework and the actual implementation of the process (Wozniak, 2004). A survey of stakeholder perspectives could also reveal which aspects of this study's results need to be approached in a different manner. A follow-up study can enhance the findings of this research project by examining each principle in greater detail, utilizing a precise rating system for each criterion, and including stakeholder perspectives.

## **Chapter 8.**

# **Procedural and Substantive Recommendations for Addressing the Shortcomings of Canada's and British Columbia's Current Environmental Assessment Framework**

### **8.1. Chapter Overview**

This chapter provides recommendations for addressing the weaknesses in Canada and BC's current EA framework based on the case study evaluation. The first section provides procedural recommendations for addressing the deficiencies identified in the previous chapter. However, there are also deep-rooted problems with Canada and BC's current EA processes, which can only be addressed by substantively restructuring the process. Therefore, this chapter also discusses options for restructuring the EA process, from its current *rational comprehensive planning approach* to a more *collaborative planning approach*, which recognizes the inherently value-based and discretionary nature of EA.

### **8.2. Procedural Recommendations for Improving the EA Processes for the Project.**

The following six recommendations are founded on the results of the case study evaluation, which revealed that the respective assessments of the Project included several shortcomings (Table 7.1). The recommendations address the major deficiencies and provide guidance for procedurally improving Canada and BC's review and decision-making processes. The recommendations are not mutually exclusive and overlap in

order to address and support several EA best practice criteria. Table 8.1 summarises key recommendations in relation to each best practice principle.

**Table 8-1: Procedural Recommendations to Improve the Shortcomings Identified Throughout the Best Practice Evaluations**

EA Best Practice Criteria	General Procedural Recommendations
<b>Clearly Defined Roles and Responsibilities</b>	<ul style="list-style-type: none"> <li>• The <i>Canada-British Columbia Agreement on Environmental Assessment Cooperation</i> should be restructured or augmented to ensure that EA is conducted as one process jointly involving the federal and BC government instead of two separate processes</li> <li>• The <i>BC EAA</i> should provide the BC EAO with substantive legislated purposes to guide its recommendations and decision-making process.</li> <li>• The <i>BC EAA</i> and <i>CEA Act</i> should clearly define the role of First Nations in the EA review and decision-making process.</li> </ul>
<b>Clearly Defined Decision-Making Criteria</b>	<ul style="list-style-type: none"> <li>• The <i>BC EAA</i> and the <i>CEA Act</i> should include more explicit legislated decision-making criteria to clearly guide the BC EAO, Panel, and Ministers in their recommendation and decision-making process.</li> </ul>
<b>Sound and Clearly Defined Methods of EA</b>	<ul style="list-style-type: none"> <li>• The respective legislative frameworks should define clear, comprehensive, and mandatory criteria for determining which methods to use in EA and provide detailed guidelines on how the methods should be applied.</li> </ul>
<b>Adequate and Objective Information</b>	<ul style="list-style-type: none"> <li>• EA should be undertaken by an objective party such as an independent EA agency or collaborative stakeholder tables, instead of by the project proponent.</li> </ul>
<b>Alternatives Assessment</b>	<ul style="list-style-type: none"> <li>• The <i>CEA Act</i> and the <i>BC EAA</i> should both require a comprehensive evaluation of reasonable alternatives to the project, and alternative methods for carrying out reviewable projects.</li> </ul>
<b>Process Efficiency</b>	<ul style="list-style-type: none"> <li>• In order to enhance efficiency, the <i>BC EAA</i>, the <i>CEA Act</i> and the <i>Canada-British Columbia Agreement on Environmental Assessment Cooperation</i> should clarify the roles and responsibilities of assessors, their EA methods, and the associated decision-making framework. This would minimize delays, inconsistencies, and uncertainty throughout the EA process.</li> </ul>
<b>Consideration of Cumulative Effects</b>	<ul style="list-style-type: none"> <li>• The <i>CEA Act</i> and the <i>BC EAA</i> should both require a comprehensive evaluation of the cumulative impacts of all reviewable projects.</li> <li>• The respective legislative frameworks should include a comprehensive set of mandatory criteria for cumulative impact assessments augmented by detailed guidelines on how to conduct cumulative impact assessments.</li> </ul>
<b>Fair and Equitable Outcomes</b>	<ul style="list-style-type: none"> <li>• Identifying the distribution of project costs and benefits and addressing equity and compensation should be a mandatory condition of project approval.</li> <li>• The respective legislative frameworks should require proponents and responsible government participants to explicitly and formally describe the particulars of equity and compensation agreements prior to project approval.</li> </ul>

<b><i>Adequate Resources</i></b>	<ul style="list-style-type: none"> <li>▪ Governments should provide EA practitioners, such as the Panel and BC EAO, the funding and time to complete consistent and effective EA that adequately considers all technical, scientific and public information.</li> </ul>
<b><i>Participative</i></b>	<ul style="list-style-type: none"> <li>▪ The respective legislative frameworks should procedurally uphold more meaningful public participation, which can directly influence the decision-making process.</li> <li>▪ The respective legislative frameworks should include a provision for using collaborative stakeholder decision making for EA, which features appointment of a stakeholder committee, joint fact-finding and significance determination, and consensus based negotiation to develop recommendations to submit to governments for ratification.</li> </ul>
<b><i>Obligations to First Nations Met</i></b>	<ul style="list-style-type: none"> <li>• The respective legislative frameworks should provide First Nations with a legally meaningful government-to-government role in the EA's review, management, and decision-making process.</li> </ul>
<b><i>Monitored and Enforced Compliance</i></b>	<ul style="list-style-type: none"> <li>• The respective legislative frameworks should require the development of follow-up programs as a mandatory component of EAs.</li> <li>• An independent body should monitor follow-up program compliance, and individuals should have the power to initiate compliance investigations if they have reason to believe that proponents or regulators are failing to fulfill their follow-up conditions.</li> </ul>
<b><i>Features an Appeal Process</i></b>	<ul style="list-style-type: none"> <li>• Appeal procedures for EA through independent tribunals, separate from costly and lengthy Federal and Provincial Court appeals, should become accessible for all stakeholders.</li> </ul>
<b><i>Adaptive Management and Continuous Learning</i></b>	<ul style="list-style-type: none"> <li>• The respective legislative frameworks should formally require EA practitioners, the proponent, and/or designated agencies to undertake adaptive management strategies and amend EA certificates in light of unanticipated project circumstances.</li> <li>• The respective legislative frameworks should explicitly require projects to incorporate adaptive capacity into their design and implementation.</li> </ul>
<b><i>Democratically Accountable Administration</i></b>	<ul style="list-style-type: none"> <li>• Democratically elected officials should remain the ultimate decision-makers with respect to reviewable projects and should make their decisions based on recommendations from independent scientific panels or experts augmented, in some cases, by consensus based stakeholder committees.</li> </ul>
<b><i>A Strong Legislative Foundation</i></b>	<ul style="list-style-type: none"> <li>• The respective legislative frameworks should be consistent in their purposes, and should utilize both mandatory and non-discretionary language, and be more forthright and comprehensible documents.</li> <li>• The respective legislative frameworks should in writing: limit the discretionary authority of government agencies, clarify mandatory decision-making criteria, establish meaningful provisions for collaborative public and First Nations engagement; define a mechanism for dealing with multijurisdictional overlap, and clarify requirements for follow-up procedures.</li> </ul>

### 8.2.1. EA Discretion and Decision-Making Criteria

BC and Canada's legislation should be more forthright and should include specific and clear decision-making criteria. The decision-making framework for assessing the Project was seriously deficient because it did not include substantive legislated criteria to guide the BC EAO and the federal Panel in their assessment of

significant adverse effects. Vague decision-making criteria allowed EA administrators wide discretion over the respective EA processes, and decision-makers were allowed to recommend decisions without clear justification. This may have compromised the objectivity, accountability, transparency, consistency, and effectiveness of the EAs.

### **Specific Recommendations for BC's EA Process**

The *BC EAA* (2002) should include an explicit EA purpose section that clearly specifies over-arching criteria for decision-making (Haddock, 2010). Clear substantive criteria should be provided in legislation to guide the BC EAO's decision-making process towards its purpose. In addition, the provisions of section 11, which highlight the need for assessors to take into account and reflect government policy should be amended or removed. This would allow the BC EAO to be a more independent arbiter of an EA application, based on legislative decision criteria, regardless of the political climate of the presiding government.

Without clear decision and justification criteria for the assessment of the Project, the BC EAO executive director was able to recommend certificate approval, without satisfying the respective concerns of relevant agencies, First Nations, and members of the public. In addition, conflicting opinions between the BC EAO and relevant stakeholders should be transparently resolved using the clear decision-making criteria. This issue can be further resolved by utilizing the EAB, independent and objective review panels, and alternative means of mediation and dispute resolution (Haddock, 2009).

In his 2010 *Environmental Assessment in British Columbia* report, Haddock describes seven substantive decision-making criteria that would “provide greater public assurance of the consistency, accuracy and objectivity of information placed before the ministers as the ultimate decision- makers” (p. 59). These decision criteria should be incorporated into BC's current EA process. According to Haddock (2010), effective decision-making criteria should include consideration of:

- content requirements and standards for proponent reports and EAO assessment reports;
- significant adverse environmental effects;

- the mitigation of those effects;
- when an assessment report may be delivered to the ministers and made public (perhaps incorporating a legal test to be met by the executive director or his/her delegate);
- issues needing resolution before referral to the ministers;
- issues needing resolution before a decision is made on an environmental assessment certificate application; and,
- standards for the development of conditions to be attached to certificates (p. 59).

Furthermore, sustainability should be explicitly incorporated into the core of the EA legislation's purpose, and should be supplemented by applicable sustainability-based criteria (Haddock, 2010; Haddock, Tollefson & Krindle, 2012). The *BC EAA* (2002) and its associated regulations fail to make an explicit commitment to sustainability and to the application of sustainability-based objectives and criteria. Sustainability is loosely referenced in BC EAO's most recent *User Guide*; however, this does not carry the same weight as an explicit legislated requirement (Rutherford, 2009). Sustainability is not clearly addressed in the BC EAO's assessment of the Project.

The BC First Nations Energy & Mining Council (2009) has developed several sustainability assessment criteria that could be incorporated into reformed EA legislation. Applying these criteria would expand the scope of BC's EAs, and subsequently allow the BC EAO to consider the Project's regional and local impacts on several sustainability measures. According to the BC First Nations Energy & Mining Council (2009) sustainability criteria should include:

- a test that socio-ecological system integrity will be maintained, and ecological life-support systems will not be placed at risk;
- a test that the project will result in net benefits to local, potentially affected communities and will not compromise future opportunities for self-sufficiency and well-being;
- a test that the project will distribute its costs and benefits equally within society, and not increase the gap between rich and poor;
- a test that the project will maintain or enhance opportunities for future generations to benefit and not incur costs;
- a test for ensuring efficient resource use, minimal wasting of energy and resources by the project; and

- use of the precautionary approach in addressing uncertainties and formulating recommendations (p.16).

Finally, EA legislation should provide the BC EAO with a comprehensive set of criteria for cumulative impact assessment, which can be partly informed by the CEAA's approach to cumulative effects. First Nations should play a direct role in cumulative impact assessment given their long connection with the land and resources where many major projects take place (Plate et al., 2009). The BC EAO should consistently require all major projects to consider cumulative effects.

### **Specific Recommendations for the Federal EA Process**

There was a high level of discretion embedded within several important stages of the federal EA, and decision-makers could recommend decisions without clear justifications. The *CEA Act* should utilize mandatory and non-discretionary language to clarify explicit decision-making criteria in legislation. Decisions throughout the process should be directly guided by decision-making criteria, informed by tested public evidence, and openly justified. Where discretion remains, independent oversight should guide decision-makers toward suitable exercise of discretion (Doelle, 2008). In addition to explicit decision-making criteria, the *CEA Act* should also clearly establish several other central components of the EA in law, including: clear scoping procedures; a well-defined mechanism for dealing with multijurisdictional overlap; clear provisions for meaningful public and First Nations engagement; and, clarified requirements for follow-up procedures.

Importantly, discretion should be reduced when assessing the scope of project EAs. While the Panel's assessment of the Project applied a comprehensive level of EA, the *CEA Act* (1992) granted considerable discretion to RAs to determine the scope of the assessment and its methods. As such, the EA of the Project could have been narrower given the same EA legislative framework. In addition, even though the Panel identified several significant adverse effects, the federal government still had the discretion to approve the Project. Linking the scoping procedure with effective SEA could set the context, and connect case-by-case scoping practices with existing regional plans, programmes and policies. In addition, public comments should be appropriately considered and incorporated into the scoping process, not selectively used to support

independently reached conclusions (Doelle, 2008). The public should have a right to appeal scoping decisions on the basis that their input was ignored. Clear and comprehensive criteria for scoping, significance determination, sustainability assessment, and meaningful public engagement, when combined with a right to appeal to an independent expert tribunal, would largely address the limitations of the scoping process under Canada's EA framework (Doelle, 2008).

### **8.2.2. The Self-assessment Approach**

The self-assessment approach under BC and Canada's EA framework must be re-examined or replaced. The provincial and federal EAs for the Project undertook a self-assessment approach, as the proponent was required to present project information and undertake several important components of the EA, including the EIS, the alternatives assessment, and the cumulative impact assessments. In an effort to obtain project approval, the proponent has an inherent incentive to curtail attention to negative impacts and exaggerate project benefits (Joseph, 2013). This leads to conflicts of interest, unpredictable application of the EA process, inefficiencies, compliance and enforcement issues, and other general quality control challenges (Doelle, 2008).

Shortcomings of this type of self-assessment approach can be procedurally reduced through: more detailed binding criteria to guide decisions; better accountability and transparency from EA decision-makers; a right to appeal key determinations to an independent body; a greater consideration of sustainability and alternatives assessments; and, a broadening of the scope of the *CEA Act* and *BC EAA* to include PPPs beyond the project level assessment (Doelle, 2008). Furthermore, substantial amendments to the self-assessment approach involve reconsidering which responsibilities should be taken away from the proponent and government decision-makers, and who should be taking on these responsibilities in their place. Ultimately, the BC EAO and the CEAA should require independent officials, experts or a CP body to complete EAs instead of the project proponent. This would ensure that proponents and government decision-makers appropriately exercise discretion in line with the purposes of EA legislation.

### **8.2.3. Evaluation of Project Alternatives**

Evaluation of project alternatives should be structurally improved, and become mandatory. The *BC EAA* (2002) did not require consideration and evaluation of project alternatives, and BC EAO's recent *User Guide* fails to make any reference to this critical component of an effective EA. The *BC EAA* (2002) should be amended to specify a mandatory evaluation of reasonable project alternatives, and alternative methods to carrying out the project. While the federal EA process did include specific provisions for alternatives assessment, it was substantially flawed in that the proponent undertook the exercise, which compromised the objectivity of the practice. In addition the CEAA only required a *consideration* of alternative means for carrying out a project, and it is unclear how the outcomes of the alternatives assessment were incorporated into the final EA decision.

Canada and BC's EA legislation should develop a set of mandatory and operational principles to guide alternatives assessments in an open and transparent manner, and independent and objective officials, experts, or CP stakeholder tables should undertake the exercise. Furthermore, project alternatives should be reviewed in the context of SEA, where alternatives are proactively and broadly assessed according to a wider set of objectives beyond the confines of case-by-case project-level EAs (Doelle, 2008; Noble and Harriman-Gunn, 2009) (section 2.3.7).

### **8.2.4. Follow-up Programs and Procedures**

Follow-up programs and procedures must be improved and valued as an equally important extension of the events that lead up to EA decisions. The respective EA process for the Project vaguely outlined compliance monitoring provisions, and did not describe how the results of the follow-up programs should be used for project management and future EAs. The proponent did not need to disclose the data behind follow-up program results, and the respective assessment reports did not include mandated decision statements that ensure compliance and promote enforcement.

Many of the post-certification issues identified by the BC AG (2011) (section 7.2.12.) may have compromised the effectiveness of BC's EA monitoring and

compliance procedures if the project was to proceed. The BC AG's (2011) six procedural recommendations on how to improve the post-certificate component of BC's EA process, must be incorporated to improve current practice in BC. Specifically, the BC AG (2011) recommends that:

1. post-certificate commitments should be clearly written in a measurable and enforceable manner;
2. the BC EAO should work with the MOE to develop a guiding policy framework on provincial environmental mitigation;
3. post-certification monitoring responsibilities and compliance measures should be clarified for each distinctive commitment;
4. an integrated information management system, for monitoring project progress and ensuring compliance, should be developed and implemented;
5. post-certificate evaluations should be regularly conducted to assess whether EAs are mitigating or avoiding the potentially significant adverse effects of certified projects; and
6. accountability information for EA certified projects should be made readily available (p.7).

The BC EAO has published a response to the BC AG's report, in which it highlights that it is adopting all these recommendations and improving its practices. In addition, The *BC EAA* (2002) should require the BC EAO and/or designated agencies to undertake adaptive management strategies and amend EA certificates in light of unanticipated project circumstances (Haddock, 2010).

While the new *CEA Act* (2012) has made some significant advancements in this category, several factors can be further improved. To start, the new *CEA Act* (2012) should explicitly require projects to incorporate adaptive capacity into their design and implementation, which would allow them to have a more effective response to complications exposed by monitoring (Doelle, 2012). Some level of follow-up evaluation should be mandatory for all assessments, including initial screenings. The results of follow-up programs should be shared with all regulators, and also be made available to the public at a time that the information is relevant. When follow-up programs expose unexpected project complications, regulators must have the power to amend regulatory approvals and respond to the unexpected consequences (Doelle, 2008). Finally, an independent body should oversee RA discretion and follow-up program compliance, and

individuals should have the power to initiate compliance investigations if they have reason to believe that proponents or regulators are failing to fulfill their follow-up approval conditions.

### **8.2.5. Engagement of First Nations**

BC and Canada's EA process should provide First Nations with a legally meaningful government-to-government role in decision-making in all aspects of EAs. Several provisions of the federal and provincial EA legislation clearly brought the potential impacts of the Project on First Nations squarely within the scope of the Project EAs. Both EA frameworks included policies and guidelines for consulting and involving First Nations; however, they failed to provide First Nations with a legally meaningful opportunity to directly advise ministers and influence the decision making process. The respective processes were not originally designed as tools to satisfy the Crown's duty to consult, and required the proponent and EA practitioners to carry the real burden of consultation with Aboriginal peoples. The proponent, BC EAO or the Panel did not have the mandate, means, or authority to negotiate accommodation measures, and the proponent and the Panel are not agents of the government that carry the honour of the Crown's consultative obligations.

Given current practices, even the most basic level of the duty to consult (section 3.5.5 and 3.5.6) would require much more effective and meaningful First Nation's involvement in EA than is generally the case today (Pape, 2009). Canada and BC's EA legislation and policies should be amended to specify and define the direct inclusion of First Nations into the decision-making framework (Plate et al., 2009). Based on a literature review of recent scholarly research, table 8.2 provides a summary of proposed best practices for meaningful inclusion of First Nations in BC and Canada's EA processes.

**Table 8-2: Best Practices for Meaningful Inclusion of First Nations in Canada and BC's EA Processes**

<b>EA Process Structural Reform</b>	
<b>Common Understanding</b>	<ul style="list-style-type: none"> <li>First Nations, government agencies, and industry proponents need to achieve better understanding of each other's perspectives and needs (Booth and Skelton, 2011).</li> </ul>
<b>Legislated Inclusion</b>	<ul style="list-style-type: none"> <li>The <i>BC EEA</i> should be amended to specify and define the inclusion of First Nations in the EA process (Plate et al., 2009).</li> </ul>
<b>Inclusion of TEK</b>	<ul style="list-style-type: none"> <li>TEK should be collected early in the process and given the same consideration as scientific knowledge in evaluating potential effects of proposed projects (Plate et al., 2009).</li> </ul>
<b>Significant Adverse Effects</b>	<ul style="list-style-type: none"> <li>The measurement of significant adverse environmental effects should include an Aboriginal perspective and consider First Nations' cultural heritage (CSTC, 2007).</li> </ul>
<b>Cumulative Assessment</b>	<ul style="list-style-type: none"> <li>The <i>BC EEA</i> should be amended to include proactive cumulative assessment (Booth and Skelton, 2011).</li> </ul>
<b>Early Consultation</b>	<ul style="list-style-type: none"> <li>Assessment and consultation needs to happen before resource tenures are granted (Booth and Skelton, 2011).</li> </ul>
<b>Acknowledge Epistemological Biases</b>	<ul style="list-style-type: none"> <li>In order for EA legislation to reflect Aboriginal values, beliefs, and original teachings, decision makers must acknowledge that the current EA framework reflects an epistemological western bias (Paci et al., 2002).</li> </ul>

<b>EA Process Capacity Building</b>	
<b>Sufficient Funding</b>	<ul style="list-style-type: none"> <li>First Nations capacity building for EA participation must be funded by the governments of BC and Canada. Funding must be sufficient enough to cover the reasonable costs of meaningful First Nations participation (Plate et al., 2009).</li> </ul>
<b>First Nation's Preliminary Studies</b>	<ul style="list-style-type: none"> <li>Given sufficient funding, First Nation communities should conduct preliminary territory based social, economic, and cultural baseline studies to inform and give direction to upcoming EA processes (Plate et al., 2009)</li> </ul>
<b>Clear Language</b>	<ul style="list-style-type: none"> <li>The results of proponent baseline studies should be summarized and presented to First Nations in clear, non- technical language (Plate et al., 2009).</li> </ul>
<b>Specific First Nations Criteria</b>	<ul style="list-style-type: none"> <li>Each First Nation community should develop its own list of criteria against which it can measure the adequacy of EAs (Plate et al., 2009).</li> </ul>
<b>First Nations EA Toolkits</b>	<ul style="list-style-type: none"> <li>First Nations should continue to develop and improve Environmental Assessment Toolkits that outline and address complex and inter-related issues of EAs in Canada (Pearse &amp; Hillyer, 2004).</li> </ul>
<b>Traditional Use Studies</b>	<ul style="list-style-type: none"> <li>First Nations must have the opportunity to cooperate in the reform of traditional use studies, which are often culturally inappropriate and scientifically inaccurate (Booth and Skelton, 2011).</li> </ul>
<b>Sufficient Timelines</b>	<ul style="list-style-type: none"> <li>Participation timelines should adequately acknowledge and adapt to the volume of processes that First Nations communities must respond to, considering their often-limited capacity (Booth and Skelton, 2011).</li> </ul>

**Sources:** Booth and Skelton, 2011; CSTC, 2007; Paci et al., 2002; Pearse & Hillyer, 2004; Plate et al., 2009;

## 8.2.6. Meaningful Inclusion of the Public

Public participation throughout BC and Canada's EA process should be meaningful, timely, constructive and ultimately directly influence the decision-making process. Both processes of public consultation were fundamentally adversarial, and it is not clear if the public impacted the decision-making process. In particular, public consultation under BC's EA of the Project was broadly discretionary, not prescribed as a mandatory requirement, and placed a large amount of responsibility for consultation on the proponent. Appendix table G.1 highlights proposed best practices for specifically improving BC's weakened public engagement process.

While the federal EA for the Project included a panel review, which provides the strongest form of public engagement, participants were only given opportunities to provide comments and did not have an opportunity to engage in a shared decision-making process. Some important procedural recommendations for the federal process, mainly drawn from Sinclair and Diduck's (2009) discussion on public participation in EA, include:

- Adequate and consistent public notice must be provided for all meaningful EA process milestones, well before decisions are made;
- Participant assistance should not only be reserved for large-scale EAs. Financial resources should also be made available for lower level EAs, as they make up the vast majority of EAs;
- Established mandated requirements for public comment should be mandatory for lower level EAs, as the current framework includes no legislated requirement for public comment for the vast majority of EAs;
- Public notice and comment should be mandated for monitoring and follow-up processes; and
- Provisions for the conduct of public hearings should be directed by the EA legislation, rather than left to the discretion of respective panels.

Substantively, public participation in BC and Canada's EA should move away from its discretionary nature, and set out an approach that is centered on mutual learning, alternative dispute resolution, shared decision-making (SDM), and community based assessments (Sinclair and Diduck, 2009). These goals can be achieved through a major EA shift towards a CP approach. This represents a fundamental evolution of EA in BC and Canada, and is therefore the theme of the remainder of the chapter.

## **8.3. The Substantive Nature of EA in Canada and British Columbia**

### **8.3.1. The Reality of Current EA Practice in Canada and BC**

The divergent EA outcomes for the Project showcase that Canada and BC's respective EA frameworks may be over-reliant on the rationalist comprehensive approach (section 2.2.1) to planning and decision-making. The RCA approach was relied on throughout the framework of the respective EAs, where a long list of decision-making points and areas of responsibility were delegated to the BC EAO, the Panel, and Ministers (appendix table G.2). This report's case study highlights that EA can be a highly complex and value-laden planning process, which is not always guided by neutrally administered and objective assessment methods and techniques. A fully rational comprehensive EA would have resulted in equivalent EA outcomes for the respective assessments of the proposed Project, especially given their corresponding terms of reference. This report's case study also illustrates that science in EA, however rigorous and comprehensive, cannot always result in a single scientifically derived outcome. The case study provides real-world evidence that EA in Canada and BC is a value-laden process rather than a purely science-led and value-neutral process. Substantive recommendations to improve the nature of Canada and BC's EA process must acknowledge the presence of existing power relations, diverse values and competing interests, inequalities, conflicts, misinformation and, various barriers to effective public participation and representation

It is important to appreciate that the current EA framework in Canada and BC has some strengths. Specifically, the EA processes for the Project required the proponent to collect and organize a large volume of scientific and technical information. There was undoubtedly an explicit role for precise and accepted scientific and technical principles throughout the EAs of the Project; however, "a clear dividing line should be drawn between analysis of scientific evidence and the consideration of ethical and social issues" (Royal Commission on Environmental Pollution, 1998, p. 28). Technical and scientific information should continue to enhance the utility of EAs by providing credible and balanced information for stakeholders and decision-makers to make informed

decisions. Specifically, applied science should inform the immediate, short-term *output objectives* of EA, which include:

- ensuring that environmental factors are clearly addressed in the decision-making processes;
- impact forecasting and anticipating, avoiding, minimizing, and offsetting adverse effects relevant to development proposals on the human and bio-physical environment; and
- improving the environmental and technical design of proposed developments (Cashmore, 2004; Noble, 2009a).

Science in EA is useful for informing, influencing, or integrating with the decision-making processes; however, as highlighted by the Project case study, there are inevitable value differences, conflicting interests, behavioural, cognitive, and informational constraints throughout real-world decision processes, and a rational science-grounded approach is a necessary but insufficient condition for an effective EA process. Trying to enhance the effectiveness of EA by simply applying better science leads to an excessive focus on process, procedure, and short-term output objectives. By simply considering short-term procedural factors, reviewers lose sight of the substantive or long-term *outcome objectives* of EA (section 8.3.1). The report's case study suggests that science, however rigorous and comprehensive, cannot always influence EA's outcome objectives. EA represents a planning environment that is informed by value-based judgment, and determining what is important should ultimately result from interactions among affected and interested stakeholders. Substantively improving the process must begin by accepting that value judgments are undeniably integral to the practice of EA.

### **8.3.2. Towards a Substantive Planning Shift and Progression of EA in Canada and BC**

In order to substantively improve EA in Canada and BC, the EA planning field must accept that value judgments are undeniably integral to the practice. EA must embrace the value-laden nature of the process, and accept that the RCA model has serious limitations and should not form the foundation of EA planning. While contemporary planning theory and practice has advanced beyond the narrow scientific paradigm, EA planning has not sufficiently adopted these advances and there has been

limited cross-fertilization between planning theory and EA theory (Lawrence, 2000). As a result, EA has generally failed to benefit from the lessons and insights of recent developments in planning (Lawrence, 2000). As planning is significantly better evolved for the integration of values, conflict, and postmodern perspectives into decision-making and policy formation, this final section will draw from developments in planning theory and practice that can improve EA in Canada and BC.

The EAs for the Project represent a dated approach to environmental planning, where subjective and narrow professional judgments, about what is important in the real world, defined the overall process. A superior review and decision-making process should be founded on collaboration among all interested and affected stakeholders, not merely based on the discretion of EA professionals such as the BC EAO, the Panel, and political representatives. Collaborative planning is an advanced approach to redesigning EA practice so that it can acknowledge that preferences regarding EA outcomes are context dependent, fluid, and value-based. A CP approach would focus on the inclusion of the diverse values and perspectives of all affected individuals, groups, and communities, and would foster direct, continuous, and effective public participation that can result in a democratic form of shared-decision-making.

### ***Description of the CP Process***

Collaborative resource planning is an interactive approach that directly assigns planning responsibility to stakeholders who engage in face-to-face dialogue to reach a consensus agreement on the review and decision-making process (Joseph, 2014; Gunton, 2014; Gunton and Day, 2003). The standard steps of a CP process include: (1) background preparation and pre-negotiation; (2) identification and appointment of stakeholders to a planning committee; (3) negotiation, where participants identify terms of reference and options, engage in mutual learning and joint fact-finding, deliberate on packaged options, and reach a consensus agreement; and, (4) post-negotiation follow-up that involves implementation and monitoring (Joseph, 2014; Gunton, 2014; Gunton and Day, 2003). Facilitators and professional experts support stakeholder deliberations towards consensus plans and recommendations, which need to be approved by governments who preserve their statutory obligation for final decision-making (Gunton, 2014).

Advocates of CP assert that this method offers several advantages over other planning models. First, it is asserted that CP can develop a plan that is more likely to be just, transparent, and in the public interest (Cullen et al. 2010; Gunton and Day, 2003; Gunton, 2014; Kennedy, 2012; Lawrence, 2000). Second, this greater support for the final agreement subsequently increases the likelihood that the agreed upon plan will be successfully implemented (Cullen et al. 2010). Finally, CP can generate social capital through the development of improved stakeholder relationships, communication skills, and knowledge (Cullen et al. 2010; Gunton and Day, 2003; Innes and Booher 1999; Kennedy, 2012).

Both advocates and critics of CP have also identified several weaknesses, challenges, and limitations of the CP approach. First, the CP approach is contingent on the principle that all stakeholders are fully motivated to negotiate and are fully committed to this type of decision making process (Cullen et al. 2010; Gunton and Day 2003; Kennedy, 2012). Second, the CP process can reach agreements that only represent a narrow spectrum of special interests held by willing and able stakeholder groups present at the planning table, (Gunton and Day; 2003; Kennedy, 2012; McGee, 2006). Third, the consensus building aspect of the CP process may encourage stakeholders to compromise and settle for second-best solutions, or the lowest common denominator, in order to reach agreement (Cullen et al. 2010; Gunton and Day 2003; Innes, 2005; Kennedy, 2012). Fourth, CP processes can encounter serious logistical challenges (Cullen et al. 2010; Gunton and Day 2003; Kennedy, 2012). Managing a decision-making process around a large collection of potentially opposed stakeholders is challenging, and requires considerable time, commitment and resources (Cullen et al. 2010; Gunton and Day 2003). Finally, the CP process may have limited applicability in situations that encompass fundamental ideological differences, hardened value disputes, and different legal rights; which is often a common feature of natural resource management (Cullen et al. 2010; Gunton and Day 2003; Kennedy, 2012).

Despite these challenges, evaluations of a CP approach confirm that benefits often outweigh the challenges (Cullen et al. 2010; Frame et al. 2004; Gunton, 2014; Kennedy, 2012), and stakeholders who have participated in the CP process consider collaboration as superior to other methods of planning (Gunton, 2014). Importantly, it

has been directly shown in BC that the CP approach can effectively adapt to complex and challenging natural resource planning environments, which are often characterized by competing interests, major legal and cultural differences, and complex ecological, social, and institutional environments.

The recent history of BC's land use planning initiatives provides valuable insight into the CP approach in action. During the 1980s and early 1990's, evident bias towards industry, lack of attention to non-timber values, and lack of public engagement, led to provincial land use planning that was characterized by growing unrest involving protests, blockades, and international boycott campaigns against BC forest products (Cullen et al. 2010). This turmoil prompted the province to reconsider its technocratic RCA approach to land use planning and consider alternative planning strategies. In response, a CP approach was adopted.

The collaborative approach engaged stakeholder tables represented by First Nations, industry, labour, environmental groups, resource management agencies, and the public, in order to prepare comprehensive land and resource management plans (LRMPs) (Cullen et al. 2010). The LRMPs, which adopted a shared decision-making (SDM) approach, were a success in that they resulted in a significant change to BC's land use. As of January 2007, the process produced 21 plans (17 of which were developed by consensus or near consensus) (Cullen et al. 2010), and increased protected areas from 5.6% to nearly 14% of the province (Frame et al. 2004). The collaborative process also elevated the status of First Nations in land-use decision making in BC. Certain CP models have resulted in landmark plans that fully engaged First Nations in the development of consensus outcomes (Cullen et al. 2010).

The successful LRMP experience suggests that a similar collaborative approach may be an appropriate alternative to the current EA planning environment in Canada and BC, which is often faces the same challenges. The fundamental inclusion of the CP approach into Canada and BC's EA framework should be informed by an established set of CP best practice guidelines (appendix table G.3). The Sustainable Planning Research Group at Simon Fraser University (SFU) has developed a multiple criteria evaluation

framework for assessing the CP process, which can be used to inform the eventual inclusion of CP processes into Canada and BC's EA frameworks.

The CP approach is best suited to inform the *outcome objectives* of EA. Open and transparent theoretical deliberations, founded on an increased recognition of the variety of ways in which substantive EA purposes can be interpreted, should reflect the ultimate outcomes that EA is expected to achieve. Noble (2009a) describes outcome objectives as long-term objectives that result from consistent and rigorous EA application, which are a product of broader environmental and societal perspectives (p. 5). Specifically, outcome objectives should:

- provide a means of public debate about the nature and direction of development;
- facilitate learning and environmental education;
- facilitate participatory approaches to development and decision-making;
- protect the productivity and capacity of human and natural systems and ecological functions; and,
- promote sustainable development (Noble, 2009a, p.5).

### ***A Theoretical Description of a CP Based EA for the Assessment of the Project***

Using a CP approach in the EA of a large undertaking such as the Project, would represent a substantive shift in the way that the significance and justifiability of project-related impacts is assessed. The assessment would be characterized by bottom-up and inside-out value determination and decision-making, where individuals and communities affected would directly inform the democratically accountable government officials. Through a CP model, a combination of public, small business, political, industry, and government (provincial and federal) stakeholders would fully partner in determining the significance and justifiability of Project related impacts (Lawrence, 2005). Most importantly, affected and interested members of the public (especially First Nations) would fully and directly participate in developing impact assessment criteria and thresholds, as well as interpreting their significance and justifiability (Lawrence, 2005). The BC EAO and the CEAA would not make general pre-judgments on the nature of the EA, rather, their key role would be to facilitate the involvement of the most affected and

vulnerable groups and individuals. The BC EAO and CEAA would jointly work to minimize substantive and procedural inequities throughout the collaborative assessment, and would take care to maintain process credibility and build trust among all stakeholders (Lawrence, 2005).

Technical and scientific information would enhance the utility of the collaborative joint assessment committee by providing credible and balanced information, which could facilitate mutual learning and inform committee members. However, the collaborative committee would analyze and interpret the significance of technical issues and trade-offs, integrate community perspectives and traditional knowledge, and engage in joint fact-finding. Diversity of perspective and values would be fully integrated into impact assessment and significance determination because all affected parties would jointly determine how much importance to attach to identified concerns and potential impacts (Lawrence, 2005).

Given the unique Aboriginal rights of many affected First Nations, a collaborative EA of the Project would likely need to undertake a two-tiered CP model. The first tier would involve a joint evaluation and negotiation by all affected stakeholders, while the second tier would involve government-government negotiation between First Nations and government representatives. This two-tiered model would accommodate the legal requirement that First Nations should be able to manage lands and resources within their territory. Finally, while the development of recommendations would be delegated to the two-tiered collaborative joint assessment committee, the ultimate decision-making authority, regarding the overall outcome of the Project application, would remain with elected governments to ensure democratic accountability. Appendix table G.4 highlights, in further detail, how substantively advancing a CP approach for the EA of the Project could address the respective shortcomings identified in the previous chapter's evaluation.

## **8.4. Final Remarks**

EA in Canada and BC is currently failing to live up to its potential as a reliable and proactive planning tool for sustainable development. The results of the previous

chapter's best practice evaluation suggest that *procedurally*, Canada and BC's EA framework:

- poorly defines the roles and responsibilities of all those involved;
- lacks well-defined decision-making criteria;
- does not feature sound and clearly defined assessment methods;
- is not always founded on objective information;
- inadequately considers project alternatives;
- inadequately considers cumulative impacts;
- does not feature adequate compensatory mechanism for those adversely affected by proposed undertakings;
- does not meaningfully engage First Nations, or other affected stakeholders throughout the decision-making process;
- does not ensure monitored and enforced compliance;
- does not feature a sufficient appeal process; and
- poorly promotes adaptive management and continuous learning.

The first part of this chapter identified specific procedural recommendations for addressing the deficiencies of the respective EA frameworks. While these recommendations can partially improve Canada and BC's EA processes, they do not address the fundamental structural weakness of the current EA process: the failure to recognize that EA is both a scientific process and a value based process that must be designed to effectively include the values of different stakeholders in the decision-making process.

Contemporary planning has much to offer the field of EA because of its long established acceptance of the value-laden nature of planning and decision-making. EA must begin to substantively acknowledge that subjective value-based judgments about what is important must result from interactions among affected and interested stakeholders (Lawrence, 2005). Insights from the CP approach can inform this substantive shift. Theoretical mechanisms that inform EA in Canada and BC should not assume that sound science can resolve difficult EA decisions, rather, they should treat science as one of the tools that can inform an EA framework that is based on collaboration and shared-decision making.

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## Appendix A: Chapter 2 Supplemental Material

Table A.1: The ESS Classification Levels for Environmental Effects Utilized by the Panel and BC EAO

The Panel		
Level 1: Categories	Level 2: Components	Level 3: Parameters
Environmental Effects	<i>Surface Water</i>	(a) Changes to streamflow and watershed areas.
		(b) Annual water balance
		(c) Development of the water quality model
		(d) Receiving water quality and treatment methods
		(e) Effects on fish health in Taseko river
	<i>Groundwater</i>	(f) Changes to groundwater flow
		(g) Effects of seepage on Big Onion Lake
	<i>Fish and Fish Habitat</i>	(h) Permanent loss/alteration of fish and fish habitat
		(i) Recreational and sport fishing opportunities
		(j) Fish and fish habitat compensation plan.
		(k) Artificial propagation.
	<i>Terrain and Soil</i>	(l) Terrain instability and soil erosion
	<i>Vegetation</i>	(m) Old growth forest
		(n) Grassland ecosystems
	<i>Wildlife and Wildlife Habitat</i>	(o) Grizzly bears
(p) Mule deer migration and ungulate winter habitat		
(q) Increased accessibility to the land		
(r) Wildlife habitat compensation plan.		
<i>Atmospheric Environment</i>	(s) Criteria and air contaminants	
	(t) Greenhouse gases	
	(u) Light pollution	
<i>Noise</i>	(v) Noise of nearby human receptors and on wildlife	

	<b>Archaeological Resources</b>	(w) Archaeological finds
		(x) Values associated with historical artifacts
	<b>Cumulative Effects</b>	(y) Vegetation
		(z) Mule Deer and moose
		(aa) Grizzly bears
		(bb) Surface water
		(cc) Groundwater
		(dd) Fish and fish habitat compensation
		(ee) Transmission line

Source: CEAA, 2010

The BC EAO

Level 1: Categories	Level 2: Components	Level 3: Parameters
<b>Environmental Effects</b>	<b>Meta Leaching/Acid Rock Drainage</b>	(a) Overburden
		(b) Waste rock
		(c) Tailings
	<b>Hydrology and Hydrogeology</b>	(d) Hydrology
		(e) Hydrogeology
	<b>Water Quality and Aquatic Ecology</b>	(f) Water and sediment quality
		(g) Aquatic ecology
	<b>Fish and Fish Habitat</b>	(h) Loss of Fish Lake and Little Fish Lake
		(i) Fisheries compensation plan
		(j) Value of Lower Fish Creek habitat
		(k) Viability of Prosperity Lake
		(l) Riparian and stream habitat along transmission line
	<b>Air Quality</b>	(m) Criteria air contaminants
		(n) Greenhouse gases
	<b>Vegetation</b>	(o) Old forest
		(p) Wetland
		(q) Riparian ecosystem
		(r) Grassland Ecosystem
		(s) Rare plants
		(t) Ecological communities of conservation concern
(u) Forest capability		
<b>Terrain and Soil</b>	(v) Terrain	
	(w) Soils	
<b>Wildlife</b>	(x) 28 key indicator species of provincial concern	

Source: BE EAO, 2009; CEEA, 2010

**Table A.2: A Spectrum of Science Philosophies and Models which can Inform EA**

<b>EA as Applied Science</b>			
<b>Important Components</b>	<b>(1) Analytical Science Model</b>	<b>(2) Environmental Design Model</b>	
<b>Purposes</b>	<ul style="list-style-type: none"> <li>Informing decisions and enhancing scientific understanding.</li> </ul>	<ul style="list-style-type: none"> <li>Informing and influencing design decisions.</li> </ul>	
<b>Type and Form of Science</b>	<ul style="list-style-type: none"> <li>Applied, experimental, and naturalistic science.</li> </ul>	<ul style="list-style-type: none"> <li>Applied and environmental science for environmental design.</li> </ul>	
<b>Role of Social Values</b>	<ul style="list-style-type: none"> <li>Strict separation of facts and values.</li> </ul>	<ul style="list-style-type: none"> <li>Strict separation of facts and values.</li> </ul>	
<b>Stakeholder Involvement</b>	<ul style="list-style-type: none"> <li>Information provision or consultation.</li> </ul>	<ul style="list-style-type: none"> <li>Viewed as part of the wider planning process.</li> </ul>	
<b>Common Terminology</b>	<ul style="list-style-type: none"> <li>Systemic, comprehensive, quantitative, experimental, modeling, monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>Alternatives, design options, solutions, proactive, anticipatory.</li> </ul>	
<b>EA as Applied Science</b>			
<b>Important Components</b>	<b>(3) Information Provision Model</b>	<b>(4) Participation Model</b>	<b>(5) Environmental Governance Model</b>
<b>Purpose</b>	<ul style="list-style-type: none"> <li>Informing decisions.</li> </ul>	<ul style="list-style-type: none"> <li>Participatory decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>Deliberative democracy.</li> </ul>
<b>Type and Form of Science</b>	<ul style="list-style-type: none"> <li>Extensive role for natural science with limited role for social science.</li> </ul>	<ul style="list-style-type: none"> <li>Extensive role for both natural and social sciences.</li> </ul>	<ul style="list-style-type: none"> <li>Expensive role for social science; limited role for natural sciences.</li> </ul>
<b>Role of Social Values</b>	<ul style="list-style-type: none"> <li>Strict separation of facts and values.</li> </ul>	<ul style="list-style-type: none"> <li>Distinct role for both facts and judgments.</li> </ul>	<ul style="list-style-type: none"> <li>Emphasis on social values; information is a product of social constructs.</li> </ul>
<b>Stakeholder Involvement</b>	<ul style="list-style-type: none"> <li>Consultation or limited participation.</li> </ul>	<ul style="list-style-type: none"> <li>Early and open participation.</li> </ul>	<ul style="list-style-type: none"> <li>Delegate power or citizen control.</li> </ul>
<b>Common Terminology</b>	<ul style="list-style-type: none"> <li>Systemic, comprehensive, quantitative, consultation, predictive, informative.</li> </ul>	<ul style="list-style-type: none"> <li>Inclusive, deliberative, quantitative, qualitative, predictive.</li> </ul>	<ul style="list-style-type: none"> <li>Emancipation, plurality, heterogeneity, equality, justice.</li> </ul>

Source: Based on Cashmore, 2004, p. 407

**Table A.3: A Spectrum of Value Philosophies and Models Which Can Inform EA**

<b>The Information Processing Model of EA</b>	
<b>Purposes</b>	<ul style="list-style-type: none"> <li>EA is primarily a technique for generating, organizing, and communication information.</li> </ul>
<b>Type and Form of Science</b>	<ul style="list-style-type: none"> <li>Quantitative techniques of data collection</li> </ul>
<b>Role of Social Values</b>	<ul style="list-style-type: none"> <li>Strict separation of technocratic merits and value based political considerations.</li> </ul>
<b>Stakeholder Involvement</b>	<ul style="list-style-type: none"> <li>Public participation seen as an information source, with little emphasis on the context.</li> </ul>
<b>Common Terminology</b>	<ul style="list-style-type: none"> <li>Accuracy, precision, efficiency, technical rationality, expert driven.</li> </ul>
<b>Model Manifestation</b>	<ul style="list-style-type: none"> <li>A unitary decision-maker, such as a Minister, makes a final EA decision that is informed through a scientifically and technical rational process, which is free of political consideration.</li> </ul>
<b>Model Deficiency</b>	<ul style="list-style-type: none"> <li>Ignores the political nature of decision-making.</li> </ul>
<b>The Symbolic Politics Model of EA</b>	
<b>Purposes</b>	<ul style="list-style-type: none"> <li>EA is primarily a mechanism for evoking emotional response and affirming moral commitments, or a technique for dishonest legitimization of the exercises of power by the powerful.</li> </ul>
<b>Type and Form of Science</b>	<ul style="list-style-type: none"> <li>Emphasis on social sciences and the fostering of strategically crafted arguments for specific audiences.</li> </ul>
<b>Role of Social Values</b>	<ul style="list-style-type: none"> <li>Values such as equity, efficiency, symbols, numbers and decisions are paradoxes to resolve political struggles. Crafted social values are used to reaffirm moral commitment to symbolic environmental protection.</li> </ul>
<b>Stakeholder Involvement</b>	<ul style="list-style-type: none"> <li>Symbolic actions and gestures are used to manipulate people, so that political actions can be legitimized.</li> </ul>
<b>Common Terminology</b>	<ul style="list-style-type: none"> <li>Token gestures, rhetoric, strategically crafted arguments, legitimization of decision, process formality.</li> </ul>
<b>Model Manifestation</b>	<ul style="list-style-type: none"> <li>When EA, which is in principle grounded in science, uses the rhetoric of science to legitimize decisions already made for reasons of political expediency.</li> </ul>
<b>Model Deficiency</b>	<ul style="list-style-type: none"> <li>EA is reduced to a formality, resulting in numerous reports that few read and that have little effect on the decision-making process, or environmental improvement.</li> </ul>
<b>The Political Economy Model of EA</b>	
<b>Purposes</b>	<ul style="list-style-type: none"> <li>EA arises as a function of markets and has its largest effects of private sector. EA occurs through the way it alters financial opportunities, risks, and constraints.</li> </ul>
<b>Type and Form of Science</b>	<ul style="list-style-type: none"> <li>Emphasis on the social and applied sciences towards fostering market or regulatory benefits.</li> </ul>
<b>Role of Social Values</b>	<ul style="list-style-type: none"> <li>Private actors realize the benefits of recognizing public values and may search for a better organizational and production process that can minimize environmental impacts.</li> </ul>

<b>Stakeholder Involvement</b>	<ul style="list-style-type: none"> <li>Private actors recognize the market benefits of improving relationships with stakeholders and regulators, and subsequently engage in communicative improvements towards liability minimization.</li> </ul>
<b>Common Terminology</b>	<ul style="list-style-type: none"> <li>Market-based, ecolabelling, ecoauditing, certification, financial risk minimization.</li> </ul>
<b>Model Manifestation</b>	<ul style="list-style-type: none"> <li>Political economy model of EA can be found in various economy market based programmes such as ecolabelling and ecoauditing, which can promote better assessments through evaluation and certification.</li> </ul>
<b>Model Deficiency</b>	<ul style="list-style-type: none"> <li>Trying to understand private sec EA through just the political economy model is limiting, as matters on money business and consumer decisions can also be influenced by organizational politics and other institutionally shaped rules and values.</li> </ul>
<b>The Organizational Politics Model of EA</b>	
<b>Purposes</b>	<ul style="list-style-type: none"> <li>EA influences policy by the degree of internal transformation or reform that it causes in organizations. Changing the organizational structure can change internal values, culture, and professionals hired.</li> </ul>
<b>Type and Form of Science</b>	<ul style="list-style-type: none"> <li>Emphasis on the social sciences that can inform effective and systemic internal reform.</li> </ul>
<b>Role of Social Values</b>	<ul style="list-style-type: none"> <li>Presumes the unavoidable political nature of the process. Structuring, directing, and biasing political interactions within organizations ultimately improves policy around environmental criteria and outcomes.</li> </ul>
<b>Stakeholder Involvement</b>	<ul style="list-style-type: none"> <li>Information provision or consultation.</li> </ul>
<b>Common Terminology</b>	<ul style="list-style-type: none"> <li>Bureaucratic organization, internal reform,</li> </ul>
<b>Model Manifestation</b>	<ul style="list-style-type: none"> <li>When NEPA required an interdisciplinary effort to evaluate environmental impacts, previously homogenously staffed agencies were forced to recruit professionals with interdisciplinary</li> </ul>
<b>Model Deficiency</b>	<ul style="list-style-type: none"> <li>Largely limited to hierarchical bureaucratic agencies, and overestimates the ability of organizations to achieve political outcomes independently of external influences and forces.</li> </ul>
<b>The Pluralistic Politics Model of EA</b>	
<b>Purposes</b>	<ul style="list-style-type: none"> <li>EA's main policy impact is around the increased participation, involvement and leverage that it facilitates for the public and for organized interests.</li> </ul>
<b>Type and Form of Science</b>	<ul style="list-style-type: none"> <li>Emphasis on the social sciences that can foster participation techniques that result in effective pluralistic representation.</li> </ul>
<b>Role of Social Values</b>	<ul style="list-style-type: none"> <li>Broad public participation is necessary for meaningful EA. EA must utilize local, indigenous environmental knowledge, and use local values to interpret predicted impacts (Meredith, 1992).</li> </ul>
<b>Stakeholder Involvement</b>	<ul style="list-style-type: none"> <li>There must be broad stakeholder representation; opportunities for information exchange and shared decision-making; and, joint establishment of a long-term implementation strategy (Reed, 1995 p. 246-147)</li> </ul>
<b>Common Terminology</b>	<ul style="list-style-type: none"> <li>Negotiation, bargaining, compromise.</li> </ul>

<b>Model Manifestation</b>	<ul style="list-style-type: none"> <li>The EA framework structures the interplay of pluralistic interests to effectively influence the assessment of a proposed undertaking.</li> </ul>
<b>Model Deficiency</b>	<ul style="list-style-type: none"> <li>Assumes equality of opportunity between groups and may ignore relations between power and privilege.</li> </ul>
<b>The Institutional Model of EA</b>	
<b>Purposes</b>	<ul style="list-style-type: none"> <li>EAs role is to promote institutional (values, perspectives, and ways of doing things) transformation that results in the establishment of precarious values like environmental protection.</li> </ul>
<b>Type and Form of Science</b>	<ul style="list-style-type: none"> <li>Emphasis on social sciences and how EA requirements can initiate institutional change, and fundamentally transform procedures, missions, and cultures behind the environmental decision-making process.</li> </ul>
<b>Role of Social Values</b>	<ul style="list-style-type: none"> <li>The effectiveness of EA is evaluated by the degree to which existing values are transformed to incorporate desired environment principles.</li> </ul>
<b>Stakeholder Involvement</b>	<ul style="list-style-type: none"> <li>Stakeholders utilize EA to fundamentally address institutional shortcomings of existing social, economic and political systems in place.</li> </ul>
<b>Common Terminology</b>	<ul style="list-style-type: none"> <li>Institutional reform, value transformation, behavioral change, social construction.</li> </ul>
<b>Model Manifestation</b>	<ul style="list-style-type: none"> <li>When EA leads to substantive modifications in the outcomes of social activities by changing the foundations and rules for arriving at legitimate decisions around undertakings that adversely affect the environment.</li> <li>When EA addresses substantive institutional shortcomings of the political and economic system in a society. This includes value transformations around <i>environmental democracy</i> and <i>environmental judgment</i>.</li> </ul>
<b>Model Deficiency</b>	<ul style="list-style-type: none"> <li>Little attention in literature is given to the specific concerns that fall under the labels of <i>environmental judgment</i> and <i>environmental democracy</i>. Literature is still unclear how specific cultural, gender, and poverty relations affect environmental decision-making through the use of EA.</li> </ul>

Source: Based on Bartlett and Kurian (1999)

**Table A.4: General Guidelines for Screening**

<i>The need and nature of an EA should be determined based on the following considerations:</i>		
<i>Guidelines presented by Barrow (1999)</i>	<i>Guidelines presented by Hanna (2009)</i>	<i>Guidelines of Annex 1 of the European EIA Directive, presented by Noble (2009a)</i>
<ul style="list-style-type: none"> <li>• Are there project components that reach a specific threshold?</li> </ul>	<p style="text-align: center;"><b>Scale</b></p> <ul style="list-style-type: none"> <li>• Does the undertaking fall within a size or cost thresholds?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the general condition and character of the receiving environment?</li> </ul>
<ul style="list-style-type: none"> <li>• How sensitive is the proposed site for project development?</li> </ul>	<p style="text-align: center;"><b>Legal Requirements</b></p> <ul style="list-style-type: none"> <li>• Is the undertaking subject to EA legislation?</li> </ul>	<ul style="list-style-type: none"> <li>• What are the potential impacts of the proposed development?</li> </ul>
<ul style="list-style-type: none"> <li>• Does the proposed development involve known or suspected dangers or risks?</li> </ul>	<p style="text-align: center;"><b>The Nature of the Project Proponent</b></p> <ul style="list-style-type: none"> <li>• Is the proponent public or private?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the level of resilience or ability of the affected physical and human systems to cope with potential project-induced changes?</li> </ul>
<ul style="list-style-type: none"> <li>• Will the development contribute to cumulative impacts?</li> </ul>	<p style="text-align: center;"><b>The Nature of the Project</b></p> <ul style="list-style-type: none"> <li>• E.g., Hydroelectric or chemical facilities are subject to specific EA procedures within certain jurisdictions.</li> </ul>	<ul style="list-style-type: none"> <li>• What is the level of confidence associated with likely project impacts?</li> </ul>
<ul style="list-style-type: none"> <li>• Are there unattractive input-output considerations, such as excessive labor migration or pollution output?</li> </ul>		<ul style="list-style-type: none"> <li>• What is the degree of public interest or perceived effects?</li> </ul>

**Sources:** Barrow 1999; Hanna 2009; and Noble 2009a

**Table A.5: Principles of Scoping Best Practice**

Principle	Description of Principle
<i>Describe the project or proposed activity in as much detail as possible.</i>	<ul style="list-style-type: none"> <li>• Important for determining the need for an EA, and facilitating efficiency and co-ordination of the EA.</li> <li>• Should include multiple tiers of project information (general, project- specific, and site-specific) in sufficient detail, and should describe the interrelationships of various components of the project environment.</li> <li>• Must be specified through a public process.</li> <li>• Proponents, the general public, professionals, governments, and special interest groups should all provide appropriate project information.</li> </ul>
<i>Scope project alternatives.</i>	<ul style="list-style-type: none"> <li>• Refers to different options for carrying out a project, including different general approaches as well as different designs for serving the purpose.</li> <li>• Involves identifying alternatives based on the relative benefits and costs of options with reference to important project variables.</li> <li>• Alternatives are best addressed at the early planning stages of the EA.</li> </ul>
<i>Identify valued ecosystem components (VECs).</i>	<ul style="list-style-type: none"> <li>• VECs are important physical and human aspects of the environment, which are considered to be important from scientific or public perspectives and thus warrant detailed consideration throughout the EA process.</li> <li>• Once VECs are selected, it is important to identify VEC objectives and VEC indicators.</li> <li>• VEC objectives are important for evaluating the project's overall environmental impacts.</li> <li>• VEC indicators are important for evaluating actual change in VEC conditions and provide early warnings of potential impacts.</li> </ul>
<i>Define EA spatial and temporal boundaries, and set limits.</i>	<ul style="list-style-type: none"> <li>• Setting realistic limits and boundaries (spatial, temporal, and jurisdictional) is important for understanding what is to be included or excluded in the assessment.</li> </ul>
<i>Establish the environmental baseline and trends.</i>	<ul style="list-style-type: none"> <li>• Describes the conditions existing at points in time so that monitoring is able detect subsequent changes through time.</li> <li>• Common topics of baseline studies include air quality, water quality, and employment, but can also consider VEC conditions.</li> <li>• The objective is to determine the past condition of indicators, degree of their change, and what type of stressors triggered observed changes.</li> </ul>
<i>List issues and potential impacts.</i>	<ul style="list-style-type: none"> <li>• The objective should be to identify and highlight key areas of concern for future impact prediction, assessment, evaluation, and monitoring.</li> <li>• Potential areas of concern will inform more intensive studies that will form an important part of the final EA decision.</li> </ul>

Sources: Gibson et al. 2005; Hanna 2009; Noble 2009a; Sadar 1996

**Table A.6: Components of Impact Prediction**

<b>Basic Requirements of Impact Prediction</b> <i>(Noble, 2009a)</i>	<b>Elements of Effective Impact Prediction</b> <i>(Morris and Therivel, 2001)</i>	<b>Benefits of Impact Prediction Studies</b> <i>(Sadar, 1996)</i>
<ul style="list-style-type: none"> <li>• Impact prediction should provide insight into specific characteristics of potential impacts. These characteristics include:</li> <li>• the nature of predicted impacts (e.g., adverse, additive antagonistic);</li> <li>• temporal characteristics;</li> <li>• magnitude, direction and spatial extent of predicted impacts;</li> <li>• degree of reversibility; and</li> <li>• the likelihood that the predicted impact will actually occur.</li> </ul>	<ul style="list-style-type: none"> <li>• Impact prediction is a highly uncertain and complex task; therefore, effective impact prediction requires several elements:</li> <li>• sound understanding of the nature of proposed undertakings;</li> <li>• knowledge of the outcomes of similar projects;</li> <li>• knowledge of past, present, or approved projects whose impacts may interact with the proposed undertaking;</li> <li>• prediction of the project's impacts on other environmental and socio-economic components that may interact with those directly affected by the projects; and</li> <li>• information about environmental and socio-economic receptors and how they might respond to change.</li> </ul>	<ul style="list-style-type: none"> <li>• Effective impact prediction studies can benefit an EA because they can:</li> <li>• make issues more concrete;</li> <li>• identify linkages between projects and issues;</li> <li>• identify direct impacts on the biophysical and social environment;</li> <li>• identify indirect impacts;</li> <li>• identify cumulative impacts;</li> <li>• predict residual impacts;</li> <li>• predict probability, magnitude, distribution, and timing of impacts; and</li> <li>• forecast what will happen to affected components under a no-project option.</li> </ul>

**Source:** Morris and Therivel, 2001; Noble, 2009a; and Sadar, 1996.

**Table A.7: Guiding Principles for Significance Determination Best Practice**

Guiding Principle	Details
<i>Focused and Efficient</i>	<ul style="list-style-type: none"> <li>Concentrate on aspects most relevant to decision-making and consistent with regulatory and public concern.</li> </ul>
<i>Explicit</i>	<ul style="list-style-type: none"> <li>Values and bases for judgments are clear and understandable.</li> </ul>
<i>Logical and Substantiated</i>	<ul style="list-style-type: none"> <li>Reasoning behind significance determination is logical, and data and analyses are clearly linked to significance judgments.</li> </ul>
<i>Systemic and Traceable</i>	<ul style="list-style-type: none"> <li>A coherent procedure exists for integrating information and objectives, and that procedure can be reconstructed.</li> </ul>
<i>Appropriate</i>	<ul style="list-style-type: none"> <li>Sensitivity of the context is considered in the significance determination.</li> </ul>
<i>Consistent</i>	<ul style="list-style-type: none"> <li>Similar projects and issues are treated in a similar manner.</li> </ul>
<i>Collective and Collaborative</i>	<ul style="list-style-type: none"> <li>Interests and affected parties are involved.</li> </ul>
<i>Effective</i>	<ul style="list-style-type: none"> <li>Outcomes of significance determination help to realize public, policy, or EA goals and objectives.</li> </ul>
<i>Adaptable</i>	<ul style="list-style-type: none"> <li>Procedures for significance determination are flexible to different contexts and changing circumstances over space and time.</li> </ul>

Source: Lawrence, 2005

**Table A.8: A Hierarchy of Impact Management Practices**

Impact Management Practice	Details, Examples and Methods
<b><i>Avoiding impacts at the source</i></b>	<ul style="list-style-type: none"> <li>• Avoiding potentially adverse environmental impacts at the outset.</li> <li>• Examples include: setting regulatory standards; land use planning and zone designation; and scheduling project construction activities so that they do not conflict with local socio-economic activity <sup>(2)</sup>.</li> </ul>
<b><i>Reducing or mitigating impacts on-site</i></b>	<ul style="list-style-type: none"> <li>• The application of project design, construction, operation, scheduling, and management principles and practices to minimize adverse environmental impacts.</li> <li>• Buffer zones are examples of a desired impact mitigation strategy in forestry, as they reduce the severity of the impacts of erosion and runoff <sup>(2)</sup>.</li> </ul>
<b><i>Repairing impacts</i></b>	<ul style="list-style-type: none"> <li>• Restoring environmental quality, rehabilitating certain environmental features, or restoring environmental components to varying degrees.</li> <li>• The objective is to return the project site to a more desirable condition than what was created by the project.</li> <li>• Restoring a landscape post-construction or clearing phase to resemble the pre-disturbed state is an example of site rectification <sup>(2)</sup>.</li> </ul>
<b><i>Compensating for impacts</i></b>	<ul style="list-style-type: none"> <li>• Compensation is a typical action for unavoidable, residual, or irreparable impacts that remain after other impact management options have been exhausted or for which no management alternatives exist.</li> <li>• Involves monetary or other benefit payments to those affected by project damages, as well as measures to recreate environmental habitats at an alternative site <sup>(2)</sup>.</li> </ul>
<b><i>Creating or enhancing positive impacts</i></b>	<ul style="list-style-type: none"> <li>• Impact management sometimes provides the means to create positive benefits from project development.</li> <li>• Ensuring that a project makes a positive contribution to the environment and society, through benefits such as community economic growth or environmental improvement, is the most desirable approach to managing project impacts.</li> <li>• It is also important to enhance the benefits and duration of potentially positive impacts.</li> <li>• An example of enhancing positive impacts is the distribution of financial benefits among affected communities over the longest period of time. This involves improving community infrastructure and worker training programs beyond the life of the project.</li> </ul>

Sources: Mitchell, 2010; Noble, 2009a

**Table A.9: A Comparison of the Defining Characteristics of EA and SEA**

Defining Characteristics of EA		Defining Characteristics of SEA	
Principle	Definition	Principles	Definition
<b>Project Specific</b>	<ul style="list-style-type: none"> <li>Represents an end and brings closure to a particular proposed undertaking.</li> </ul>	<b>Strategic</b>	<ul style="list-style-type: none"> <li>Places an emphasis of strategy, strategic initiatives, and represents a means to an end.</li> <li>Assessment is not project-specific.</li> </ul>
<b>Narrow Focus</b>	<ul style="list-style-type: none"> <li>Assessment is narrowly focused highly technical and detailed.</li> <li>Predicts the potential outcome of an already pre-determined option.</li> </ul>	<b>Broad Focus</b>	<ul style="list-style-type: none"> <li>Focus is broad, usually non-technical, and qualitative.</li> <li>Scope broadens as the assessment moves from program, to plan, to the policy level.</li> </ul>
<b>Goals and Objectives Pre-Determined</b>	<ul style="list-style-type: none"> <li>EA predicts and assesses the potential outcomes of an already pre-determined option.</li> </ul>	<b>Integrated</b>	<ul style="list-style-type: none"> <li>Examines multiple strategies, criteria, and sources of knowledge to accomplish particular goals and objectives.</li> <li>Assessment is an integral part of PPP formulation.</li> <li>Assessment is set within the context of previous and subsequent decision outcomes and objectives.</li> </ul>
<b>Reactive</b>	<ul style="list-style-type: none"> <li>The EA is designed to react to, or assess, a particular option.</li> </ul>	<b>Proactive</b>	<ul style="list-style-type: none"> <li>Creates and examines alternatives leading to a particular option.</li> <li>Attempts to avoid, eliminate, and minimize potentially negative options.</li> <li>Attempts to enhance and create potentially positive PPP options.</li> </ul>
<b>Definitive</b>	<ul style="list-style-type: none"> <li>Assessment has a well-defined beginning (project proposal) and end (decision to proceed or not) for a single undertaking.</li> </ul>	<b>On-Demand</b>	<ul style="list-style-type: none"> <li>Assessment can be implemented at any time should strategic choices not be meeting specified visions and objectives, or should new visions, goals and objectives develop.</li> </ul>
<b>Forecasts</b>	<ul style="list-style-type: none"> <li>Predicts and assesses the likely outcomes of a particular undertaking.</li> </ul>	<b>Backcasts, then Forecasts</b>	<ul style="list-style-type: none"> <li>Determines a range of options based on a vision, and then forecasts the likely outcomes of each option.</li> <li>Backcasts desirable ends and alternative means.</li> </ul>
<b>Focused on "Option" Alternatives</b>	<ul style="list-style-type: none"> <li>Assessment is focused on "option alternatives" versus "alternative options."</li> <li>Alternatives are often limited to issues of technical design.</li> <li>Management emphasis on mitigating likely negative outcomes.</li> </ul>	<b>Focused on "Overall" Alternatives</b>	<ul style="list-style-type: none"> <li>Assessment is focused on broader range of alternative PPP options at an early stage.</li> <li>Alternatives assessment set within the context of a broader vision.</li> <li>Selecting the "least negative" alternative at an early stage minimizes negative outcomes.</li> </ul>

Source: Based on Noble, 2000 p. 204-205 and Noble and Harriman-Gunn, 2009 p. 106

**Table A.10: Evaluation Criteria for SEA Within the Canadian Context**

System Components	
Evaluation Component	Definition
<b>Provisions</b>	<ul style="list-style-type: none"> <li>• clear provisions, standards or requirements to undertake the process</li> </ul>
<b>Integration</b>	<ul style="list-style-type: none"> <li>• application early enough to address deliberation on purposes and alternatives, or to guide initial conception of review for an existing PPP</li> </ul>
<b>Tiering</b>	<ul style="list-style-type: none"> <li>• assessment is undertaken within a tiered system of EA, planning and decision making</li> </ul>
<b>Sustainable Development</b>	<ul style="list-style-type: none"> <li>• sustainability / sustainable development a guiding principle and integral concept</li> </ul>
Process Components	
Evaluation Component	Definition
<b>Responsibility and Accountability</b>	<ul style="list-style-type: none"> <li>• clear delineation of assessment roles and responsibilities</li> <li>• mechanisms to ensure impartiality/ independence of assessment review</li> <li>• opportunity for appeal of process or decision output</li> </ul>
<b>Purpose and Objectives</b>	<ul style="list-style-type: none"> <li>• assessment purpose and objectives are clearly stated</li> <li>• centered on a commitment to sustainable development principles</li> </ul>
<b>Scoping</b>	<ul style="list-style-type: none"> <li>• opportunity to develop and apply more or less onerous streams of assessment sensitive to the context and issue</li> <li>• consideration of related strategic initiatives</li> <li>• identification and narrowing of possible valued ecosystem components, to focus on those of most importance based on the assessment context</li> </ul>
<b>Alternatives</b>	<ul style="list-style-type: none"> <li>• comparative evaluation of potentially reasonable alternatives or scenarios</li> </ul>
<b>Impact Evaluation</b>	<ul style="list-style-type: none"> <li>• identification of potential impacts or outcomes resulting from each option or scenario under consideration</li> <li>• integration or review of sustainability criteria specified for the particular case and context</li> </ul>
<b>Cumulative Effects</b>	<ul style="list-style-type: none"> <li>• consideration of potential cumulative effects and life cycle issues</li> </ul>
<b>Monitoring Program</b>	<ul style="list-style-type: none"> <li>• procedures to support monitoring and follow-up of process outcomes and decisions for corrective action</li> </ul>
<b>Participation and Transparency</b>	<ul style="list-style-type: none"> <li>• opportunity for meaningful participation and deliberations</li> <li>• transparency and accountability in assessment process</li> </ul>

Process Components	
Evaluation Component	Definition
<ul style="list-style-type: none"> <li><i>Decision Making</i></li> </ul>	<ul style="list-style-type: none"> <li>identification of a 'best' option or strategic action</li> <li>authoritative decisions, position of the authority of the guidance provided</li> </ul>
<ul style="list-style-type: none"> <li><i>PPP and Project Influence</i></li> </ul>	<ul style="list-style-type: none"> <li>defined linkage with assessment and review or approval of any anticipated lower-tier initiatives</li> <li>demonstrated PPP influence, modification, or downstream initiative</li> </ul>
<ul style="list-style-type: none"> <li><i>System-wide Learning</i></li> </ul>	<ul style="list-style-type: none"> <li>opportunity for learning and system improvement through regular system or framework review</li> </ul>

Source: Directly retrieved from Noble 2009b p.67

**Table A.11: A Summary of Frequently Sited Sources That Discuss EA Best Practices**

<p><b>CEN 1988</b></p> <p><b>8 basic principles of EA:</b></p>	<ol style="list-style-type: none"> <li>1. The EA process must be monitored and reviewed by an independent agency, which must results in a final and binding decision.</li> <li>2. The EA process must apply universally to a variety of initiatives, including governmental policy-making.</li> <li>3. The EA process must establish clear criteria to guide the planning and review of proposals in order to ensure accountability of decision-makers.</li> <li>4. The EA process must ensure that proponents justify proposed undertakings by demonstrating that: the purpose of the undertaking is legitimate; there is an environmentally acceptable need for the undertaking; and the preferred undertaking is the best of the "alternatives to" and "alternative means" considered by the proponent.</li> <li>5. The EA process must provide for a significant public role early and often in the planning process, and thus, must contain provisions relating to public notice and comment, access to information, participant funding, and related procedural matters.</li> <li>6. The EA process must results in a decision that can be implemented, is enforceable, and is subject to terms and conditions where necessary.</li> <li>7. The EA process must specifically address monitoring and other post-approval [follow-up] activities, and must ensure that the environmental impacts of abandoning or discontinuing the undertaking in the future are considered as part of the EA process.</li> <li>8. The EA process must establish an efficient EA process, and must provide for joint federal-provincial reviews where necessary.</li> </ol>
<p><b>Gibson 1993</b></p> <p><b>8 principles for evaluating the EA process:</b></p>	<ol style="list-style-type: none"> <li>1. An effective EA process must encourage an integrated approach to the broad range of environmental considerations and be dedicated to achieving and maintaining local, national and global sustainability.</li> <li>2. Assessment requirements must apply clearly and automatically to planning and decision making on all undertakings that may have environmentally significant effects and implications for sustainability within or outside the legislating jurisdiction.</li> <li>3. EA decision-making must be aimed at identifying the best options, rather than merely acceptable proposals. It must therefore require critical examination of purposes and comparative evaluation of alternatives.</li> <li>4. Assessment requirements must be established in law and must be specific, monitored, and enforceable.</li> <li>5. Assessment work and decision-making must be open, participative, and fair.</li> <li>6. Terms and conditions of approval must be enforceable, and approvals must be followed by monitoring of effects and enforcement of compliance in implementation.</li> <li>7. The EA process must be designed to facilitate efficient implementation.</li> <li>8. The process must include provisions for linking assessment work into a larger regime including the setting of overall biophysical and socioeconomic objectives and the management and regulation of existing as well as proposed new activities.</li> </ol>
<p><b>Wood 1995</b></p> <p><b>14 EA system evaluation criteria:</b></p>	<ol style="list-style-type: none"> <li>1. The EA system must be based on clear and specific legal provisions.</li> <li>2. Relevant environmental impacts of all significant actions must be assessed.</li> <li>3. Evidence of the consideration, by the proponent, of the environmental impacts of reasonable alternative actions must be demonstrated.</li> <li>4. Screening of actions for environmental significance must take place.</li> <li>5. Scoping of the environmental impacts of actions must take place and specific guidelines must be produced.</li> <li>6. EA reports must meet prescribed content requirements and checks must be made to prevent the release of inadequate EA reports.</li> <li>7. EA reports must be publicly reviewed and the proponents must respond to the points raised.</li> <li>8. The findings of the EA report and review must be a central determinant on the decision on the action.</li> <li>9. Monitoring of action impacts must be undertaken and linked to the earliest stages of the EA process.</li> </ol>

	<ol style="list-style-type: none"> <li>10. Mitigation on action impacts must be considered at the various stages of the EA process.</li> <li>11. Consultation and participation must take place prior to, and following, EA report publication.</li> <li>12. The EA system must be monitored and, if necessary, be amended to incorporate feedback from experience.</li> <li>13. The financial costs and time requirements of the EA system must be acceptable to those involved.</li> <li>14. The EA system must apply to significant programmes, plans, and policies, as well as to projects.</li> </ol>
<p style="text-align: center;"><b>Sadler 1996</b></p> <p style="text-align: center;"><b>5 main guiding principles of EA:</b></p>	<ol style="list-style-type: none"> <li>1. The EA should be based on a <b>strong legislative foundation</b> that provides clarity with respect to objectives, purposes, and responsibilities. Application of EA should be codified, based in law rather than in discretionary guidelines.</li> <li>2. The EA should feature <b>suitable procedures</b> where the quality, consistency, and outcomes of process reflect the environmental, political, and social context within which EA operates, and should demonstrate the ability to respond to divergent issues.</li> <li>3. Meaningful and effective <b>public involvement</b> must be present, where those affected and interested should not only be consulted, but their concerns should be able to affect the decision.</li> <li>4. The EA should be <b>orientated towards problem solving and decision-making</b>. As the context of the EA is inherently practical and applied, the EA system should have relevance to issues of importance, generate needed information, and must influence, and be connected to, the settings where conditions of approval are set and decisions are made.</li> <li>5. The EA should have <b>monitoring and feedback capability</b> and the considerations of impacts should not end with approval and implementation. Specifically, the process must have some capacity for ensuring compliance, accuracy of impact prediction, and evaluation of project performance.</li> </ol>
<p style="text-align: center;"><b>IAIA 1999</b></p> <p style="text-align: center;"><b>14 basic principles of EA that describe the ideal process as being:</b></p>	<ol style="list-style-type: none"> <li>1. <b>Purposive</b>- Inform decision-making and result in appropriate levels of environmental protection, and community well-being.</li> <li>2. <b>Rigorous</b>- Result in information and outputs, which assist with problem-solving and are acceptable to and able to be implemented by proponents.</li> <li>3. <b>Practical</b>- Apply “best practicable” science, employing methodologies and techniques appropriate to address the problems being investigated</li> <li>4. <b>Relevant</b>- Provide sufficient, reliable and usable information for development planning and decision-making.</li> <li>5. <b>Cost Effective</b>- Achieve the objectives of EA within the limits of available information, time, resources and methodology.</li> <li>6. <b>Efficient</b>- Impose the minimum cost burdens in terms of time and finance, consistent with meeting accepted requirements and objectives of EA.</li> <li>7. <b>Focused</b>- Concentrate on significant environmental effects and key issues; i.e., the matters that need to be taken into account in making decisions.</li> <li>8. <b>Adaptive</b>- 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.</li> <li>9. <b>Participative</b>- 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.</li> <li>10. <b>Interdisciplinary</b>- 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.</li> <li>11. <b>Credible</b>- Carried out with professionalism, fairness, objectivity, impartiality and balance, and be subject to independent checks and verification.</li> <li>12. <b>Integrated</b>- Address the interrelationships of social, economic and biophysical aspects.</li> <li>13. <b>Transparent</b>- Clear, easily understood requirements for EIA content; ensure public access to information; identify the facts that are to be taken into account in decision making; and acknowledge limitations and difficulties.</li> <li>14. <b>Systematic</b>- 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.</li> </ol>

**Table A.12: A Summary of EA Best Practices Evaluation Criteria Recently Developed by Canadian Researchers**

EA Best Practice Principles	Study		
	<i>Joseph 2013</i>	<i>Van Hinte et al. 2007</i>	<i>Wozniak 2004</i>
<b>Clearly Defined Roles and Responsibilities</b>	<ul style="list-style-type: none"> <li>The process should provide clear information on the purposes and objectives of the process, the roles, responsibilities, and authority of all involved, and guidance for how all involved parties are to participate.</li> </ul>	<ul style="list-style-type: none"> <li>Roles and responsibilities should be clearly defined. Administrative structures and policy should provide clear guidance and clearly outline levels of authority and responsibilities.</li> </ul>	<ul style="list-style-type: none"> <li>Administrative structures and policy clearly outline levels of authority and responsibility. Jurisdictional overlap is addressed through formal and informal mechanisms</li> </ul>
<b>Clearly Defined Decision-Making Criteria</b>	<ul style="list-style-type: none"> <li>Decision-making throughout the process should be structured, minimize discretion, and should guide subjective judgements through tightly defined decision-making criteria. Criteria should be clear, measureable, and should follow from high-level policy.</li> </ul>	<ul style="list-style-type: none"> <li>Clear decision-making criteria, sound methods of analysis, and rules that clarify how decisions will be made should ensure accountability, transparency, and consistency in decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>Explicit and traceable decision-making process based on clear criteria.</li> </ul>
<b>Sound and Clearly Defined Methods of EA</b>	<ul style="list-style-type: none"> <li>Only sound methods of EA should be used in project review. Sound methods should effectively identifying and measuring impacts and impact significance, be flexible and adaptable, be suited to the review context, be scientifically robust, be minimally reliant upon subjective inputs, be inexpensive, and be easy to understand, evaluate, and put to use.</li> </ul>		
<b>Adequate and Objective Information</b>	<ul style="list-style-type: none"> <li>The process should be informed by high-quality information that is complete, accurate, reliable, applicable, and objective.</li> </ul>	<ul style="list-style-type: none"> <li>Decisions should be based on adequate scientific and technical information regarding potential environmental and socioeconomic impacts of projects. This must be made available and supplied by objective parties to ensure that decisions are based on the best available information.</li> </ul>	<ul style="list-style-type: none"> <li>Adequate scientific, technical, traditional and local information is gathered by objective parties and made available to the public</li> </ul>
<b>Assessment of Project Rationale</b>	<ul style="list-style-type: none"> <li>Decision statement should explain the rationale for the decision and should indicate how review findings were interpreted and used to construct the final decision. Alternatives should be compared in terms of which alternative is the best performer.</li> </ul>	<ul style="list-style-type: none"> <li>The evaluation process should assess the rationale for the project and complete a comparative evaluation of alternatives to the project.</li> </ul>	<ul style="list-style-type: none"> <li>Procedures for generating and evaluating project alternatives are comprehensive, transparent, systematic and explicit.</li> </ul>
<b>Process Efficiency and</b>	<ul style="list-style-type: none"> <li>The framework should include strategies to propel process effectiveness such as work</li> </ul>	<ul style="list-style-type: none"> <li>Decisions should be reached in a timely manner at a reasonable cost. The process should be effective</li> </ul>	<ul style="list-style-type: none"> <li>Issues and impacts that are likely to be important are identified. Process is scoped to</li> </ul>

<b>Effectiveness</b>	planning, budgeting, delineating roles and responsibilities, establishing timelines and milestones, and progress monitoring and reporting.	in the sense that outcomes should be consistent with goals and objectives, implementable, and in the public interest.	achieve accepted requirements and objectives within the limits of available information, time, resources and methodology. Process is not constrained by lengthy appeal processes or unnecessary delays caused by blurred roles and responsibilities or absence of a clear decision-making framework.
<b>Consideration of Cumulative Effects</b>	<ul style="list-style-type: none"> <li>All types of impacts should be considered reviewable including their cumulative effects.</li> </ul>	<ul style="list-style-type: none"> <li>The evaluation process should cumulatively assess project impacts in the context of impacts of all other potential projects.</li> </ul>	<ul style="list-style-type: none"> <li>Cumulative effects assessments are completed and linked to broader goals and objectives that balance resource development and economic interests with ecological and socio-cultural sustainability.</li> </ul>
<b>Fair and Equitable Outcomes</b>	<ul style="list-style-type: none"> <li>Attention should be paid to mitigation of negative impacts. Mitigation should be legally required and stakeholder groups should be compensated for any losses that can't otherwise be mitigated.</li> </ul>	<ul style="list-style-type: none"> <li>The decision-making process should contain a legal obligation to provide compensation to those negatively affected by a project and ensure project benefits are equitably distributed.</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory EA processes contain a legal obligation to provide compensation to those negatively affected by a project and ensure that project benefits are distributed equitably.</li> </ul>
<b>Adequate Resources</b>	<ul style="list-style-type: none"> <li>The process should be adequately resourced with high-quality information, funding, experienced and skilled staff, leadership, and time.</li> </ul>	<ul style="list-style-type: none"> <li>Decision-making bodies should have sufficient resources in place to ensure effective and efficient decision-making processes. Sufficient resources include adequate financial and human resources to carry out project evaluation and monitoring.</li> </ul>	
<b>Participative</b>	<ul style="list-style-type: none"> <li>Stakeholders should be substantially involved in the process such that they have a real, genuine opportunity to affect the outcome.</li> </ul>	<ul style="list-style-type: none"> <li>A framework should be in place to ensure that stakeholders are fully engaged in the decision-making process through collaborative decision making. Sound decisions must be based on the values, objectives, and risk assessments of those stakeholders affected by the decision.</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory requirements and guidelines ensure collaborative, sustained and effective public notification, information exchanges and involvement.</li> </ul>
<b>Obligations to First Nations Met</b>	<ul style="list-style-type: none"> <li>The process should adhere to any obligations established in the nation's constitution within which projects are proposed.</li> </ul>	<ul style="list-style-type: none"> <li>Legal and fiduciary obligations, such as to consult and address First Nations interests, should be fully met</li> </ul>	
<b>Monitored and Enforced Compliance</b>	<ul style="list-style-type: none"> <li>Government should prescribe compliance and effectiveness monitoring and enforcement to help ensure that proponents comply with terms and conditions and that desired outcomes are achieved.</li> </ul>	<ul style="list-style-type: none"> <li>The regulatory framework should clearly outline monitoring and enforcement processes, infractions, and penalties. An effective monitoring and enforcement strategy ensures environmental, economic, and social goals are achieved during all project phases.</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory framework clearly outlines how adherence to terms and conditions of regulatory approval will be monitored and enforced. Penalties for non-compliance are clear. Outcomes of compliance monitoring programs are communicated to stakeholders.</li> </ul>

<b><i>Features an Appeal Process</i></b>	<ul style="list-style-type: none"> <li>• Appeals should be allowed on major decisions of matters of both procedure and substance, for appeals that are not groundless.</li> </ul>	<ul style="list-style-type: none"> <li>• The decision-making process should include an efficient and narrowly defined mechanism to allow stakeholders to appeal a decision.</li> </ul>	<ul style="list-style-type: none"> <li>• Appeal process is efficient and narrowly defined to eliminate delays to the decision-making process.</li> </ul>
<b><i>Mechanism for Adaptive Management and Continuous Learning</i></b>	<ul style="list-style-type: none"> <li>• The process should be adapted to the nature of the particular project proposal being reviewed, as projects differ in terms of proposals' design characteristics, the issues that proposals raise among stakeholders, historical and cultural issues, legal issues, and otherwise.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring and enforcement based on principles of adaptive management.</li> </ul>	<ul style="list-style-type: none"> <li>• Key environmental and socio-economic indicators monitored throughout lifespan of project. Stakeholders involved in design and implementation of effects monitoring programs and informed of outcomes. Information gained from monitoring programs is incorporated into adaptive management of the project. Funding for monitoring programs is outlined.</li> </ul>
<b><i>Impartial and Democratically Accountable Administration</i></b>	<ul style="list-style-type: none"> <li>• Final decisions should be made by persons who are accountable through the democratic process. Persons should be completely unbiased towards development , with no contractual or other obligations, impediments, or incentives that would sway their actions one way or another</li> </ul>	<ul style="list-style-type: none"> <li>• The management regime should be structured such that impartial decision-makers represent the publics' interests, and are directly, or indirectly, accountable through democratic processes to those affected by the decision.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<b><i>A Strong Legislative Foundation</i></b>	<ul style="list-style-type: none"> <li>• The process should be strongly established in law. The legal text should be clear, specific, unambiguous, consistent, and distinguish the process from other legal requirements and processes.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• The structure of the management regime should be formally structured through legislation or regulation.</li> </ul>	<ul style="list-style-type: none"> <li>• Central components of the EA process are established in law and are specific, monitored, and enforceable.</li> </ul>

**Table A.13: A Summary of Basic and Operating Principles of Meaningful Public Engagement**

Basic Principles	Operating Principles
<p><b>Adapted to context:</b> Understanding the context of the places and communities affected by the proposed development.</p>	<p><b>Initiated early and sustained:</b> Participation should commence early in the EA process, before major decisions are made, and be sustained throughout the process.</p>
<p><b>Informative and Productive:</b> Early and meaningful provision of information to communities or populations that may be affected by or have an interest in the proposal.</p>	<p><b>Well planned and focused on negotiable issues:</b> Emphasis should be placed on negotiable issues relevant to decision-making, and the objectives, organization, and procedures of participation should be clear to all those involved.</p>
<p><b>Adaptive and Communicative:</b> Recognition of the heterogeneity of affected populations based in differences in values, demographics, knowledge, and interests.</p>	<p><b>Supportive to participants:</b> There should be adequate information and financial support to facilitate participation, and capacity-building support should be provided to interested groups who lack the capacity to participate.</p>
<p><b>Inclusive and Equitable:</b> Ensuring that represented and unrepresented groups and interests are included in participation, including the concerns of future generations.</p>	<p><b>Tiered and Optimized:</b> Participation should occur at the most appropriate level of decision-making.</p>
<p><b>Educative:</b> Contributing to mutual understanding and respect.</p>	<p><b>Open and Transparent:</b> Those interested in participating should have access to all relevant information, and that information should be available in an understandable format.</p>
<p><b>Cooperative:</b> Promoting cooperation, convergence, and consensus building.</p>	<p><b>Context –oriented:</b> Methods and procedures for participation should be adapted to the local community, social, cultural, and political context.</p>
<p><b>Imputable:</b> Improving the proposal under consideration and reporting back to participants on how their involvement has contributed to decision-making.</p>	

**Source:** Andre et al., 2006

## Appendix B: Chapter 3 Supplemental Material

### Appendix B.1: Environmental Law and the Divisions of Power

Federal Powers Highlighted in Section 91 of the <i>Constitution Act (1867)</i>	Provincial Powers Highlighted in Section 92 and 109 of the <i>Constitution Act (1867)</i>
s.91(2): trade and commerce	s. 92A: natural resources- the power to manage and to capture revenues from non-renewable and forestry resources, and the generation of electrical energy.
s.91(3): taxation power	s.92(5): management and sales of public lands
s.91(10): navigation	s.92(8): municipal institutions
s.91(12): seacoast and fisheries	s.92(13): property and civil rights
s.91(24): First Nations and Aboriginal interests	s.92(16): matters of local or private nature
s.91(27): criminal law	s. 109: Property in Lands, Mines, etc.-vests public lands, mines, minerals, and royalties with the provincial government (unless they are federally owned or federal government has authority over them, as in natural parks).
<b>General Power-</b> laws for the “Peace, Order and Good Government” of Canada	
<b>Treaty Making Power-</b> international negotiation and implementation of international agreements (with constitutional authority or provincial agreement).	

Source: *Constitution Act*, s.91, s. 92. and s.109, 1867; Muldoon, 2009

### Appendix B.2: Main Assessment Processes in BC Prior to the First BC EAA

Process	Year	Purpose
<i>Utilities Commission Act</i>	1980	<ul style="list-style-type: none"> <li>Requires applicants for energy-project certificates to identify ‘any impacts by the project on the physical, biological and social environments; and proposals for reducing negative impacts’ [B.C. Reg.388/80, s.1(1)(b)(iv)]</li> </ul>
<i>Environmental Management Act</i>	1981	<ul style="list-style-type: none"> <li>Requires that ‘any person who proposes to do anything that would have a detrimental environmental impact’ prepares an EA (S.B.C.1981, c.14, s.3)</li> </ul>
<i>Mine Development Assessment Act</i>	1990	<ul style="list-style-type: none"> <li>Requires new coal and metal mines capable of producing 10 000 ore/year to apply for a mine development certificate. Application must feature ‘information, analyses and an environmental protection plan’ (S.B.C. 1990, c.55, s.2).</li> </ul>
<i>Major Projects Review Process</i>	1990	<ul style="list-style-type: none"> <li>Policies that apply to numerous large industrial projects and require the completion of project- specific EA</li> </ul>

Source: Haddock, 2010; Rutherford, 2009

### Appendix B.3: Significant Changes to the CEA Act Legislation in 2012

EA Component	Significant Change and Implications for Federal EA
<b>Stated Purpose of the Act</b>	<ul style="list-style-type: none"> <li>The purpose of EA under the new <i>CEA Act</i> (2012) is significantly more narrowly defined than in the former <i>CEA Act</i> (1992). This narrower definition effectively constrains the types of projects that may be designated for an EA.</li> </ul>
<b>Environmental Effects</b>	<ul style="list-style-type: none"> <li>The previous <i>CEA Act</i> (1992) defined “<i>environmental effects</i>” much more broadly than the new <i>CEA Act</i> (2012). The narrowed and highly circumscribed definition of the new statute means that fewer likely environmental effects of projects are considered during an EA, and the narrower definition also effectively constrains the Minister in the type of projects he/she may designate for an EA.</li> </ul>
<b>Federal EA Triggers</b>	<ul style="list-style-type: none"> <li>The new <i>CEA Act</i> (2012) only applies to a relatively small number of projects described in the <i>Regulations Designating Physical Activities</i> or by ministerial order, and cuts the scope of how projects are assessed. This is a departure from the “all in unless excluded” approach of the previous <i>CEA Act</i> (1992), which required an EA whenever a federal authority exercised certain powers of functions relating to a proposed undertaking.</li> </ul>
<b>Responsible Authorities</b>	<ul style="list-style-type: none"> <li>The new <i>CEA Act</i> (2012) significantly reduces the number of responsible authorities by providing authority to just three federal departments and agencies. This is a departure from the approach in the former <i>CEA Act</i> (1992), where any of a number of federal authorities that were involved in a project could be responsible for carrying out an EA.</li> </ul>
<b>Development of the EA</b>	<ul style="list-style-type: none"> <li>There are now only two levels of review available under the new <i>CEA Act</i> (2012). The dropped <i>screening</i> category accounted for the vast majority of EAs under the previous <i>CEA Act</i> (1992); therefore, far fewer projects are now required to undergo a federal EA.</li> </ul>
<b>Time Limits</b>	<ul style="list-style-type: none"> <li>The new <i>CEA Act</i> (2012) improves predictability throughout the EA process by introducing statutory timelines for completion of an assessment. Imposing a rigid deadline onto a complex EA process could result in incomplete or chaotic assessments, which do not effectively consider complete scientific and public information.</li> </ul>
<b>Decision Making</b>	<ul style="list-style-type: none"> <li>The new <i>CEA Act</i> (2012) transfers considerable decision making discretion to the Cabinet (rather than the department or agency that conducted the EA), which can now ultimately decide whether a proposed undertaking should proceed despite its impact on the environment. This new provision essentially validates political interference in the EA process.</li> </ul>
<b>Compliance and Enforcement</b>	<ul style="list-style-type: none"> <li>The new <i>CEA Act</i> (2012) grants compliance officers significant power to enforce the provision of the statute and sets out substantial fines for failing to comply with its regulations. This is a significant change from the previous <i>CEA Act</i> (1992), which did not have any explicit compliance and enforcement provisions.</li> </ul>
<b>Federal and Provincial Cooperation</b>	<ul style="list-style-type: none"> <li>The new <i>CEA Act</i> (2012) moves toward a “one project, one review” system for reviews of major projects, which recognizes provincial processes as substitutes or equivalents to federal ones as long as they meet certain requirements of the federal EA legislation.</li> </ul>
<b>Public Participation</b>	<ul style="list-style-type: none"> <li>The definition of interested party is considerably narrower in the new <i>CEA Act</i> (2012). This narrower definition may largely prevent all input from those not in the local area of proposed undertakings, and will make it significantly harder for urban environmental organizations to protect remote areas.</li> </ul>

## Appendix C: Chapter 4 Supplemental Material

Table C.1: Summary of Project Phases

Project Phase	Duration and Timing	Commencement and Closure	Activities
<b>Construction Phase</b>	<b>2 years:</b> From pre-construction period (defined as Year -1) to Year.	<b>Start:</b> With the issuance of appropriate permits. <b>End:</b> When the concentrator reaches commercial production.	<ul style="list-style-type: none"> <li>Construction activities include initial site clearing, pit pre-production, construction of site infrastructure, construction of embankments for the TSF, and stockpile development.</li> </ul>
<b>Operation Phase</b>	<b>20 years:</b> From Year 1 to Year 20.	<b>Start:</b> The time period from when the construction is completed. <b>End:</b> When no tailings are generated by the concentrator, or the end of milling.	<ul style="list-style-type: none"> <li>General mining activities, including the sequential enlarging of the open pit to a depth of 500 meters (m) to allow for mining, the processing of ore, and development and milling of the low grade ore stockpile.</li> </ul>
<b>Closure Phase</b>	<b>24 years:</b> From Year 21 to Year 44	<b>Start:</b> Cessation of tailings production. <b>End:</b> When the open pit fills with water and start discharging to the receiving environment.	<ul style="list-style-type: none"> <li>The transmission line, mill and crusher sites, as well as other facilities and equipment not necessary for long-term closure would be removed or decommissioned. An engineered spillway from Prosperity Lake into the TSF would be established to maintain water in the TSF.</li> </ul>
<b>Post-Closure Phase</b>	<b>N/A</b> From Year 44 to unknown.	<b>Start:</b> When the open pit fills with water and start discharging to the receiving environment. <b>End:</b> When Taseko is relieved of its responsibilities under its various permits, authorizations, and approvals.	<ul style="list-style-type: none"> <li>Post closure land-use goals included forestry, wildlife, and recreation. Taseko proposed to return aquatic and terrestrial environmental components to a self-sustaining state.</li> </ul>

Source: CEAA, 2010; EIS, 2009, v.1; Taseko, 2011

Table C.2: The Proponent's Multiple Account Analysis of Project Alternatives

<div style="border: 1px solid black; padding: 5px;"> <p><b>Green</b>- Minimal Effect</p> <p><b>Yellow</b>- Moderate Effect</p> <p><b>Orange</b>- Maximum/Negative Effect</p> </div>		Subaqueous PAG in slurry tailings in Tete Angela Drainage with non-PAG waste rock and lower grade ore storage north of the pit	Subaqueous PAG in slurry tailings in Upper (south) Fish Creek Drainage with non-PAG waste rock and lower grade ore storage north of the pit	Subaqueous PAG in slurry tailings in Fish Creek Drainage with non-PAG waste rock and lower grade ore storage in Fish Lake location
		1	2	3
		Tete Angela	Fish Creek South	Fish Creek North (proposed Project)
<b>Potential Candidate</b>				
<b>Summary of Reasons for Exclusion</b>				
<b>Fatal Flaw Criteria</b>		Excessive Economic Risk	Excessive Economic Risk	
<b>Exclusionary Criteria</b>	Technical issues			
	Physical Environment			
	Effects on Terrestrial & Aquatic Life			
	Socio-Economic Issues			
	Economic Implications			

Source: Modified version of the Proponent's Multiple Accounts Analysis found in vol. 2 of EIS (2009). Retrieved from BC EAO, 2009

**Table C.3: Breakdown of Generated Employment.**

PROVINCIAL SCALE- British Columbia				
Project Phase	Direct Employment	Indirect Employment	Induced Employment	Total Employment
<i>Construction (Average Year)</i>	378	238	83	699
<i>Operations (Average Year 2-20)</i>	377	324	290	991
<i>Closure (Year 21+)</i>	10	9	8	26
LOCAL SCALE- Central Cariboo				
Project Phase	Direct Employment	Indirect Employment	Induced Employment	Total Employment
<i>Construction (Average Year)</i>	94	124	29	248
<i>Operations (Average Year 2-20)</i>	354	110	118	582
<i>Closure (Year 21+)</i>	10	3	3	248

Source: EIS, 2009, v.6. Retrieved from CEAA 2010

**Table C.4: Breakdown of Government Revenue.**

Project Phase	Local Revenue (\$M)	Provincial Revenue (\$M)	Federal Revenue (\$M)	Total Revenue (\$M)
<i>Construction</i>	0.56	9.71	15.99	26.27
<i>Operations</i>	2.05	18.75	27.60	48.41
<i>Closure</i>	0.03	0.09	0.19	0.33
<i>Total Project Life</i>	43.18	397.36	589.88	1030.42

Source: EIS, 2009, v.6. Retrieved from BC EAO 2009

## Appendix D: Chapter 5 Supplemental Material

Table D1: Steps of the Provincial EA Review Process

Part 1: Background Information	
Date	EA Review Process Steps and Comments
1995	<ul style="list-style-type: none"> <li>The EA process was initiated under the former <i>BC EAA</i> (1994) and the Project entered the provincial EA process.</li> </ul>
1995-2002	<ul style="list-style-type: none"> <li>The BC EAO convened technical meetings of a Project Committee to discuss the information needs of government agencies and First Nations to develop <i>Project Report Specifications</i>.</li> </ul>
December 30, 2002	<ul style="list-style-type: none"> <li>The Project transitioned into the present <i>BC EAA</i> (2002).</li> </ul>
February 19, 2007	<ul style="list-style-type: none"> <li>DFO referred the Project to the Minister of Environment for referral to a Federal Panel.</li> </ul>
June 22, 2008	<ul style="list-style-type: none"> <li>The provincial Minister of Environment issued an Order pursuant with section 14 of the <i>BC EAA</i> (2002) ordering that the provincial EA be undertaken by the BC EAO.</li> </ul>

Part 2: Pre-Application Review Stage	
Date	EA Review Process Steps and Comments
Summer of 2008	<ul style="list-style-type: none"> <li>The BC EAO established a Working Group, comprised of provincial and federal officials, local governments, and First Nations.</li> </ul>
October 17, 2008	<ul style="list-style-type: none"> <li>BC EAO issued a procedural Order in accordance with section 14 of the <i>BC EAA</i> (2002) which:               <ul style="list-style-type: none"> <li>defined the scope of the Project;</li> <li>defined the procedures and methods for conducting the review; and,</li> <li>instructed the proponent to form the draft <i>Terms of Reference</i>.</li> </ul> </li> </ul>
November, 2008	<ul style="list-style-type: none"> <li>Joint BC EAO-CEAA open houses were held.</li> </ul>
November 3 to December 3, 2008	<ul style="list-style-type: none"> <li>The BC EAO held a public comment period to seek input on the draft <i>Terms of Reference</i>.               <ul style="list-style-type: none"> <li>First two open houses were held in Williams Lake on <i>November 7 and November 8, 2008</i>.</li> <li>The third open house was held in Alexis Creek on <i>November 8, 2008</i>.</li> </ul> </li> </ul>
January 9, 2009	<ul style="list-style-type: none"> <li>The BC EAO approved the final <i>Terms of Reference</i>.</li> </ul>

<b>January 26, 2009</b>	<ul style="list-style-type: none"> <li>The proponent submitted the Application to the BC EAO.</li> </ul>
<b>February 25, 2009</b>	<ul style="list-style-type: none"> <li>After evaluating the Application against the <i>Terms of Reference</i> and identifying a list of deficiencies (with input from the Working Group and First Nations), the BC EAO advised the proponent that they did not accept the Application for formal review and requested the proponent submit a revised Application for re-evaluation.</li> </ul>
<b>March 6, 2009</b>	<ul style="list-style-type: none"> <li>The proponent submitted a revised Application.</li> </ul>
<b>March 11, 2009</b>	<ul style="list-style-type: none"> <li>The BC EAO concluded that the revised Application provided the required information.</li> <li>The BC EAO also determined that the proponent's First Nations and public consultation activities were adequate and allowed sufficient opportunities for the public and First Nations to review and comment on the Project.</li> </ul>

### Part 3: Application Review Stage

<b>Date</b>	<b>EA Review Process Steps and Comments</b>
<b>March 16, 2009</b>	<ul style="list-style-type: none"> <li>Review of the Application was initiated.</li> <li>The Application was posted to BC EAO's electronic Project Information Centre.</li> <li>The Application was also made available: <ul style="list-style-type: none"> <li>on the proponents website; i</li> <li>in the regional public libraries in 100 Mile House and Williams Lake;</li> <li>at the Williams Lake City Hall; and,</li> <li>to several First Nations Communities (see Table 6.16).</li> </ul> </li> </ul>
<b>March 19, 20, and 22, 2009</b>	<ul style="list-style-type: none"> <li>The <i>Williams Lake Tribune</i>, the <i>100 Mile House</i>, and <i>Quesnel Cariboo Observer</i> advertised the public comment period and open houses.</li> </ul>
<b>March 26, 2009 to May 25, 2009</b>	<ul style="list-style-type: none"> <li>A 60-day public comment period on the Application was held.</li> <li>A total of 1, 218 comments were received on the Application; <ul style="list-style-type: none"> <li>938 comments were of general support;</li> <li>204 comments were of general opposition;</li> <li>Remaining 76 related to various specific issues of interest or concern.</li> </ul> </li> <li>Working Group members submitted 878 issues during the Application review.</li> </ul>
<b>March 30 and April 1, 2009</b>	<ul style="list-style-type: none"> <li>Open houses were held in 100 Mile House and Williams Lake. <ul style="list-style-type: none"> <li>Approximately 600 people attended the open houses</li> <li>Over 260 people met with the proponent during interest group meetings</li> </ul> </li> </ul>
<b>April 2, 2009</b>	<ul style="list-style-type: none"> <li>A third open house planned in Alexis Creek was cancelled due to protests by First Nations.</li> </ul>

<b>April 3 and April 4, 2009</b>	<ul style="list-style-type: none"> <li>• Three public technical workshops were held by the proponent in Williams Lake on Fish, Fish Habitat and Compensation; Hydrology, Hydrogeology, Water Quality and Aquatic Biology; and Terrestrial Ecosystems.</li> </ul>
<b>April to July, 2009</b>	<ul style="list-style-type: none"> <li>• 12 Working Group subcommittee meetings were held.</li> </ul>
<b>July, 8, 2009</b>	<ul style="list-style-type: none"> <li>• The BC EAO suspended the review as it required the proponent to provide additional information regarding: <ul style="list-style-type: none"> <li>○ the alternatives assessment;</li> <li>○ analysis of wildlife in a local context;</li> <li>○ a sensitivity analysis for the water balance of Prosperity Lake and the TSF; and</li> <li>○ the <i>First Nations Consultation Report</i> and identification of issues.</li> </ul> </li> </ul>
<b>October 2, 2009</b>	<ul style="list-style-type: none"> <li>• The BC EAO determined that adequate information had been provided in order to continue the process.</li> </ul>
<b>November 2, 2009</b>	<ul style="list-style-type: none"> <li>• The proponent issued a news release that the life of the mine would be extended from 20-33 years.</li> <li>• The BC EAO suspended the review pending information regarding any potential changes to the proposed mine plan as set out in the Application.</li> <li>• The proponent responded, indicating that the mine plan set out in the Application would not change, and that they understood that should an EA Certificate be issued it would be for the project as proposed in the Application.</li> </ul>
<b>November, 16, 2009</b>	<ul style="list-style-type: none"> <li>• The BC EAO restarted the 180-day review timeline.</li> </ul>
<b>December 17, 2009</b>	<ul style="list-style-type: none"> <li>• The BC EAO completed its review in accordance with its 180 day timeline</li> <li>• The BC EAO issued the <i>Prosperity Gold-Copper Project Assessment Report</i>.</li> </ul>
<b>January 14, 2010</b>	<ul style="list-style-type: none"> <li>• The provincial Ministers of the Environment and Energy, Mines and Petroleum Resources accepted BC EAO's recommendations and an EA certificate was issued.</li> </ul>

Source: BC EAO, 2009 p.19-22

**Table D.2: The Assessment Methodology Undertaken by the BC EAO in the Review of the Proponent’s Application**

Facts for Addressing What May Constitute a <b>Significant Adverse Effect</b> (pg.25)
<ul style="list-style-type: none"> <li>• <b>Magnitude</b> - the severity or magnitude of the effects.</li> <li>• <b>Geographic extent</b> – the extent of change over the geographic area of the Project and whether the effects are local or regional.</li> <li>• <b>Duration and frequency</b> – the length of time the effect lasts, how often the effect occurs and whether the effects are long term or temporary.</li> <li>• <b>Reversibility</b> – the degree to which the effects are reversible.</li> <li>• <b>Context</b> – the ability of the environment to accept change and whether the location has been previously affected or is ecologically fragile.</li> <li>• <b>Probability</b> – The likelihood that an effect would occur in circumstances where it is not certain that the effect would materialize.</li> </ul>
Facts for Determining Whether Significant Adverse Effects are <b>Justified</b> (pg.26)
<ul style="list-style-type: none"> <li>• The <b>number, type</b> and <b>extent</b> of significant adverse effects that are expected;</li> <li>• The <b>economic benefits</b> that would be provided by the Project (including taxes, jobs and infrastructure development), and the degree to which those who would otherwise be adversely affected by the Project would benefit;</li> <li>• The degree to which the Project would contribute to <b>community development</b>;</li> <li>• The <b>allocation of costs and benefits</b> of the Project between present and future generations; and,</li> <li>• The <b>alternatives</b> that exist that would not result in significant adverse effects.</li> </ul>
The <b>Spatial Boundaries</b> Established Based on the Zones of Project Influence (pg.27)
<ul style="list-style-type: none"> <li>• <b>Local Study Area (LSA)</b>- the area that would be directly affected by the activities associated with the proposed mine site.</li> <li>• <b>The Regional Study Area (RSA)</b>- the furthest extent that measurable or demonstrable Project-specific effects may act in combination with similar effects from other projects on Valued Ecosystem Components. The RSA was used for the cumulative impact assessment.</li> </ul>
The <b>Temporal Boundary</b> Periods When Valued Components are Assessed (pg.29-30) (section 4.5)
<ul style="list-style-type: none"> <li>• <b>Baseline</b>- describes existing ecological, physical and human-related characteristics of the environment, based on studies conducted from 1993 to present</li> <li>• <b>Construction and Commissioning</b>-describes activities for the two year period following the start of construction:</li> <li>• <b>Operations</b>- describes activities for the 20 years following construction</li> <li>• <b>Decommissioning and Closure</b>- describes activities for the 25-30 years following operations, or until the open pit begins to discharge water to lower Fish Creek.</li> </ul>
Facts for Considering <b>Cumulative Impacts</b> (pg.31)
<ul style="list-style-type: none"> <li>• <b>Approved land use plans</b> that designate the most appropriate activities on the land base;</li> <li>• <b>Comprehensive baseline studies</b> which set out the current conditions and thereby factor in effects of prior development;</li> <li>• <b>Potential overlapping impacts</b> that may be occurring due to other developments, even if not directly related to the Project; and,</li> <li>• <b>Future developments</b> that are reasonably foreseeable and sufficiently certain to proceed.</li> </ul>

Source: CEAA-1, 2012; CEAA-2, 2012; and BC EAO, 2009 p. 25-31

**Table D.3: BC EAO's Assessment of Relevant Facts Affecting Metal Leaching and Rock Drainage**

<b>ML and ARD Issues and Mitigation Measures Identified in the Application (p.32-34)</b>
<p><b>Issues:</b></p> <ul style="list-style-type: none"> <li>• The Project would produce three types of waste material that have the potential to be sources of ARD and ML: <ul style="list-style-type: none"> <li>○ <i>Overburden</i>: Soils overlying the ore deposit and stripped prior to mining. Some sources of overburden would need to be managed as PAG waste;</li> <li>○ <i>Waste rock</i>: Non ore-bearing rock removed during the mining process. Significant portion of the waste rock has the potential to generate ARD; and,</li> <li>○ <i>Tailings</i>: Sulphide waste material removed during the ore concentration process. Tailings are not expected to be acid generating.</li> </ul> </li> <li>• The proponent plans to place bulk tailings in a purpose-built impoundment in the upper Fish Creek valley (TSF).</li> <li>• The TSF would be an environmentally secure storage for the co-disposal of approximately 480 Mt of tailings and 237 Mt of PAG waste materials, and would have the potential for increased storage capacity.</li> <li>• The proponent plans to flood PAG material within two years of its placement in the PAG waste storage facility to ensure that PAG rock would not become acidic.</li> <li>• The low-grade ore stockpile is expected to remain pH neutral over the 19-year period of operations. Blasted ore would be exposed in the pit and stockpiled for approximately one month prior to milling.</li> </ul> <p><b>Mitigation:</b></p> <ul style="list-style-type: none"> <li>• PAG waste rock and PAG overburden would be segregated and placed in a PAG disposal facility within the TSF, and would be covered with tailings over the life of the mine such that at the end of operations, the PAG disposal facility would be enclosed with saturated tailings.</li> <li>• As required by the <i>Mines Act</i> the proponent completed an <i>ML/ARD Prediction and Prevention Plan</i>. This Plan recognizes that ML/ARD assessments would need to be continued for mine construction and operations to confirm the findings presented in the Application, calibrate the test work results to site conditions, and ensure ongoing monitoring to direct waste management activities.</li> </ul>
<b>ML and ARD Issues and Mitigation Measures Identified During the Application Review (p.34-36)</b>
<p><b>Issues:</b></p> <p>During the Application review, Environment Canada (EC), Ministry of Environment (MOE) Ministry of Energy, Mines and Petroleum Resources (MEMPR), Natural Resources Canada (NRCan), and First Nations, raised additional issues.</p> <ul style="list-style-type: none"> <li>• After reviewing the proponent's Application, MEMPR and NRCan had overall confidence in the proponents ML/ARD estimates and modeling predictions.</li> <li>• NRCan requested that the proponent provide more information on ML of fresh rock under reducing conditions, such as when submerged underwater.</li> <li>• EC did not have confidence in the proponent's ML/ARD estimates and modeling predictions. EC indicated that the proponent has not provided an adequate evaluation of the potential for neutral pH ML from waste rock, and an adequate degree of representativeness of samples used to characterize PAG waste rock.</li> <li>• MEMPR and EC both raised issue as to whether the volume of PAG rock projected in the Application might be underestimated.</li> <li>• The MEMPR also identified the risk of additional ML/ARD with respect to the contingency plan for low-grade ore stockpiled in the event of early closure.</li> </ul> <p><b>Mitigation:</b></p> <ul style="list-style-type: none"> <li>• The proponent provided the additional information that was requested by MEMPR, NRCan and EC. MEMPR and NRCan indicated that they were satisfied with the supplemental information, while EC did not provide a further opinion.</li> <li>• With respect to whether the TSF could accommodate an increase in PAG rock, The proponent undertook a sensitivity analysis of PAG estimates by evaluating the effect of treating a</li> </ul>

majority of non-PAG rock as if it were PAG, which would result in an additional 70 Mt of waste being stored as PAG in the TSF. The proponent indicated that accommodating such an increase, which would represent a worst-case scenario, would be within the design flexibility of the Project.

- With respect to the contingency plans for ML/ARD in the event of early closure, the proponent presented two possible measures to address this concern: an extension of stockpiling time due to temporary closure, or backfilling to the pit in the event of early closure. This addressed MEMPR's concerns at the EA stage.
- The BC EAO determined that MEMPR's analysis of the issues, and satisfaction with the resolutions and commitments, is comprehensive, sound, and can be relied upon for the purposes of this EA.

Source: BC EAO 2009 p. 32-36

**Table D.4: BC EAO's Assessment of Relevant Facts Affecting Hydrology and Hydrogeology**

Hydrology and Hydrogeology Issues and Mitigation Measures Identified in the Application (p.40)
<b>Issues:</b>
<ul style="list-style-type: none"> <li>• The <b>hydrology effects</b> of the Project would be:               <ul style="list-style-type: none"> <li>○ Dewatering of Fish Lake and flooding of Little Fish Lake by the TSF, and</li> <li>○ Changes in the flow regime for lower Fish Creek and Beece Creek.</li> </ul> </li> <li>• The <b>hydrogeology effects</b> of the Project would be:               <ul style="list-style-type: none"> <li>○ A temporary reversible decline in groundwater elevation around the open pit of approximately 500 m by the end of active pit development (year 16);</li> <li>○ A permanent irreversible rise in groundwater elevations in proximity to the TSF;</li> <li>○ A permanent irreversible loss of the groundwater divide separating the Fish Creek and the Taseko River valleys along the majority of the length of the western embankment of the TSF and corresponding potential for migration of seepage from the TSF towards the Big Onion Lake catchment; and,</li> <li>○ An increases and/or decreases in average annual groundwater discharges to the Taseko River, lower Fish Creek, Big Onion, Little Onion, and Wasp lakes.</li> </ul> </li> </ul>
<b>Mitigation:</b>
<ul style="list-style-type: none"> <li>• <b>For hydrogeology effects</b> of the Project, the proponent proposed:               <ul style="list-style-type: none"> <li>○ Diversion of a portion of the undisturbed Fish Creek watershed (east of the Project) to lower Fish Creek to the north of the open pit and to a man-made lake at the south of the TSF;</li> <li>○ Construction of a spillway in the Main Embankment crest of the TSF to allow the TSF to overflow and contribute to the surface water runoff to lower Fish Creek via the open pit, in post-closure; and,</li> <li>○ Once the pit fills at closure, directing all Fish Creek drainage north to Fish Creek thus restoring the natural flow regime in the watershed.</li> </ul> </li> <li>• <b>For hydrogeology effects</b> of the Project, the proponent proposed:               <ul style="list-style-type: none"> <li>○ Diverting surface water to fill the pit, which would rese groundwater levels to near baseline conditions post-closure in the pit vicinity.</li> </ul> </li> </ul>

### Hydrology and Hydrogeology Issues and Mitigation Measures Identified During the Application Review (p.41)

#### Issues:

During the Application review, EC, MOE and the Working Group raised additional issues. Key issues included the following:

- The MOE and EC raised issues regarding the source and amount of water required for the Project. Specifically, they raised concerns about the availability of hydrometeorological data to adequately predict the amount of water available to meet the needs of the Project.
- The MOE also raised issues regarding the effects of climate change on the Project. Specifically, the MOE cited concerns regarding the potential impact of climate change in reducing glacial run-off to the Taseko River, and how this could influence flow and predicted dilution rates post-closure.

#### Mitigation:

- The proponent addressed the former issue in their August 2, 2009 report, which highlighted several mitigation options. These options included slowing mine production and/or obtaining water from alternate sources, such as redirection of flows from Fish Creek, Prosperity Lake outflows and pumping from deep groundwater aquifers.
- To address the latter issue, MOE requested additional baseline sampling on Taseko River flows, at least five years prior to the predicted timing of discharge to Fish Creek, to validate predictions of flow reduction due to glacier melt. The proponent has considered this request and the BC EAO is satisfied that additional sampling would be a requirement of the permitting process.

Source: BC EAO 2009 p. 37-41

**Table D.5: BC EAO's Assessment of Relevant Facts Affecting Water Quality and Aquatic Ecology**

### Water Quality and Aquatic Ecology Issues and Mitigation Measures Identified in the Application (p.44-48)

#### Issues:

- The Project would avoid construction-related impacts to water quality by employing best management practices for sediment and erosion control, using clean water diversions around disturbed areas, and constructing holding ponds to collect runoff from disturbed areas.
- During operations there would be no discharge of surface water from disturbed areas within the Project and consequently, impacts to water quality are not predicted.
- During post-closure the pit is forecast to overflow and discharge to Fish Creek, and eventually discharge to Taseko River. With only a small amount of dilution available between the pit and the waterfall on Fish Creek, there is potential for high magnitude effects on water quality.
- The predicted pit water quality would exceed Water Quality Guidelines (WQG) for several parameters in Fish Creek.
- Groundwater seepage would have the potential to affect surface water quality where groundwater discharges to the surface.
- With the rise of the TSF above the level of the west embankment, groundwater flow from the TSF to Big Onion Lake is likely.
- The changes in groundwater quality are predicted to result in a gradual increase in the concentrations of the levels of several metals in Big Onion Lake over time, but are not expected to result in any metals exceeding WQG; however this is difficult to model without actual data.
- Activities related to the construction and maintenance of the transmission line ROW have the potential to alter riparian vegetation at stream crossings, altering drainage flows and creating erosion risks of releasing sediments into streams.
- Construction of the access road and upgrades to the 4500 Road has the potential to affect water quality.

#### Mitigation:

- The proponent's proposed mitigation measures include:
- Encouraging slope stability and minimizing soil quality degradation and water contamination from surface runoff through grass reseeding and slope revegetation. All plants and seeds used for revegetation would be appropriate for use in the Chilcotin district; and
- Managing potential surface water contamination by aligning and containing all mine site works and facilities within a single drainage with the pit serving as the downstream catchment basin.
- Potential contamination discharge effects from the pit waters would be reduced by diluting the TSF water with clean runoff water from the watershed, prior to discharge to the pit;
- Reclamation planning and the development of Prosperity Lake that manages vegetation of features planned to be flooded, thus avoiding build up of organic matters and concerns about methylation of mercury<sup>12</sup>;
- A seepage control system for the west embankment, consisting of seepage collection ditches and ponds, groundwater monitoring and recovery wells and a seepage pump back assembly;
- Use of TSF and pit as depositional area to reduce sediment and metal loading to surface waters. If particulate levels and dissolved metals are too high post-closure for the water to be released to lower Fish Creek (following up to 27 years of settling) measures would be taken to clean the water, such as liming or construction of a treatment plant.
- Transmission line and access road construction effects would be mitigated or avoided through implementation of surface erosion and sediment control measures in the Water Management Plan.

#### **Water Quality and Aquatic Ecology Issues and Mitigation Measures Identified During the Application Review (p.48-50)**

##### ***Issues:***

During the Application review, MOE, Fisheries and Ocean Canada (DFO), Working Group members, and First Nations, raised additional issues.

- The MOE suggested that there may not be a groundwater divide between the Fish Creek watershed and the Big Onion watershed, and expressed concern that subsurface flows are connected through fractured bedrock and faults, and there would be a danger of greater losses of seepage than has been predicted by the proponent.
- The MOE also expressed concern that several mitigation measures would not be able to manage seepage collection and treatment because of the uncertainty created by not having sufficient hydrogeological information.
- Prior to certification, The MOE requested:
- Mapping of the appropriate confined and unconfined groundwater aquifers;
- Information the source or recharge areas of Big Onion Lake water; and
- Information on flow patterns for subsurface flows from the Fish Creek watershed.
- The MOE expressed further concerns regarding the implications of a reduction of flows in Fish Creek and a corresponding increase in flows in Beece Creek during the operational phase.
- Finally, the MOE and other members of the Working Group expressed concern that there may not be sufficient monitoring beyond the life of the Project, and wished to see bonding that would commit the proponent to continue to monitor environmental conditions until water quality is within WQG and can be discharged into Fish Creek.

##### ***Mitigation:***

- With respect to the concerns raised by the MOE, in a July 2009 memo to the MOE, the proponent described the testing they would initiate at permitting. This included pumping tests in the west ridge, gathering surface and groundwater data in the Big Onion Lake catchment, and completing baseline chemical characterization of groundwater and surface water in the Big Onion Lake system.
- On August 24, 2009 the proponent prepared a further submission on the groundwater issue, which indicated that there was no evidence to suggest highly permeable features are present in the West ridge or within the Fish Creek drainage and that the mitigation options in place are the appropriate in this situation.
- With respect to the final issue of concern, the proponent noted that it is committed to meet any generic or site specific WQG that may be developed during permitting through a combination

of natural attenuation processes in the pit and ongoing treatment methods.

- Overall, MEMPR is satisfied with the commitments made and technologies identified by the proponents, while MOE would prefer that more studies be done now to predict potential seepage zones and plan for effective mitigation.

Source: BC EAO 2009 p. 37-41

**Table D.6: BC EAO's Assessment of Relevant Facts Affecting Fish and Fish Habitat**

<b>Fish and Fish Habitat Issues and Mitigation Measures Identified in the Application (p.52-54)</b>
<p><b>Issues:</b></p> <ul style="list-style-type: none"><li>• Loss/alteration of in-stream habitat quality or quantity as a result of pit dewatering, infrastructure development, and water sourcing and diversion activities;</li><li>• Potentially elevated suspended solids as a result of erosion and runoff from disturbed areas at the mine site during construction;</li><li>• Loss/alteration of lake habitat quality and quantity as a result of Fish Lake and mine site dewatering, infrastructure development, and water sourcing and diversion activities; and,</li><li>• Loss/alteration of fish populations and angling opportunities in the Fish Creek drainage.</li></ul> <p><b>Mitigation:</b></p> <ul style="list-style-type: none"><li>• Based on the objectives of the MOE's <i>No Net Loss</i> principle (Benchmark Statement- August 2008) and DFO's <i>Habitat Management Plan</i>, the proponent designed a <i>Fisheries Compensation Plan</i>, with the specific objective of maintaining genetic integrity, maintaining the recreational and First Nations' fishery, and maintaining productive capacity.</li><li>• Key components of the <i>Fisheries Compensation Plan</i> include:<ul style="list-style-type: none"><li>○ Construction of Prosperity Lake as compensation fish habitat, and a refuge for the Fish Lake rainbow trout genetic stock;</li><li>○ Retention of Little Fish Lake until the completion of construction of Prosperity Lake as a refuge for Fish Lake rainbow trout genetic stock;</li><li>○ Construction of channels and a headwater retention pond at the Fish Creek headwaters to provide additional stream habitat, a spawning channel, and to enable fish passage upstream of Prosperity Lake;</li><li>○ Outplanting of Fish Lake trout to a minimum of two regional priority lakes; and</li><li>○ Use of fish culture to maintain the Fish Lake rainbow trout genetic stock, for the eventual re-creation of the Fish Lake fishery in Prosperity Lake, and to increase the fishery on a number of small lakes in the vicinity of the mine.</li></ul></li></ul>
<b>Fish and Fish Habitat Issues and Mitigation Measures Identified During the Application Review (p.55-60)</b>
<p><b>Issues:</b></p> <p>During the Application review, MOE, DFO, Working Group members, and First Nations, raised additional issues.</p> <ul style="list-style-type: none"><li>• The proponent's proposed compensation plan is satisfactory to the MOE.<ul style="list-style-type: none"><li>○ The DFO has not expressed satisfaction with the elements of the proponents <i>Fisheries Compensation Plan</i>, and in July 2013 asked for:</li><li>○ greater precision with respect to how the provincial fisheries objectives are measured;</li><li>○ the underlying principle behind the provincial fisheries objectives highlighted in the August 2008 Benchmark Statement;</li><li>○ the extent and degree of certainty that the proposed habitat compensation will meet the fisheries objectives, and the science that supports this conclusion; and,</li></ul></li></ul>

- an indication of the degree of certainty that the stocking would be sustained.
- The MOE and DFO disagree as to the productive capacity of lower Fish Creek habitat and its species.
- MOE characterized lower Fish Creek as habitat of minimal value as “reach one” was found to be dry and the only species present were rainbow trout,
- DFO disagrees that this is habitat of minimal value and may require a direct compensation of lower Fish Creek Habitat.
- On May 2009, DFO indicated that the information provided in the Application did not adequately demonstrate that the proposed Prosperity Lake is likely to be technically and economically feasible. DFO still required further information on estimates of the costs of constructing, monitoring, operating, and maintaining this habitat, as well as what would be done by the proponent to maintain the productive capacity of the proposed lake.
- Members of the Working Group expressed concerns about construction of the transmission line through riparian and stream habitat.

**Mitigation:**

- With respect to DFO original information request, on October 14, 2009 MOE provided *Performance Measures for Fisheries Compensation* to DFO, which it believed addressed their issues. The DFO has not given any indication as to what it would consider appropriate fisheries compensation.
- In response to DFO’s May 2009 statement, and to the Information Requirements of the Panel, the proponent provided a supplemental report on water balance and sensitivity analysis, which projects water levels and interactions with the TSF in high and low precipitation years.
- With respect to the Working Group’s transmission line concern, the proponent has proposed a series of mitigation measures, including avoidance where possible, timing construction seasonally, transmission line pole delivery by helicopter, minimizing the area of excavation, and minimizing the area of footprint of sidencastor material to avoid impacts.

Source: BC EAO 2009 p. 52-60

**Table D.7: BC EAO’s Assessment of Relevant Facts Affecting Air Quality**

Air Quality Issues and Mitigation Measures Identified in the Application (p.62-63)
<p><b>Issues:</b></p> <ul style="list-style-type: none"> <li>• The maximum ground-level concentrations of all CACs are predicted to occur at the northern boundary of mine disturbance, for both the construction and operational phases of the Project</li> <li>• The maximum predicted ground-level concentrations for nitrogen dioxide, carbon monoxide, sulphur dioxide, and lead would be less than the Canadian and British Columbia <i>Ambient Air Quality Objectives</i>.</li> <li>• The maximum predicted ground-level concentrations for particulate matter would exceed air quality objectives and standards.</li> <li>• Dispersion modeling was not done for the closure phase, as it would contribute similar but less intense adverse effects than the construction phase.</li> </ul>
<p><b>Mitigation:</b></p> <p>The proponent's proposed mitigation measures include:</p> <ul style="list-style-type: none"> <li>• Using the “Best Available Technology” that is “Economically Achievable” measures and best practices to reduce CAC emissions and GHG wherever possible;</li> <li>• Meeting or exceeding relevant regulatory emissions standards for all mine equipment;</li> <li>• Installing covered conveyor belt ore transportation systems and housing of the rail loading facilities to minimize fugitive particulate emissions;</li> <li>• Installing cost-effective dust control measures at the primary crusher truck dump to control dust emissions;</li> <li>• Covering trucks used to transport concentrate;</li> <li>• Ensuring application of surface-binding chemicals or water on site roads and exposed surfaces as appropriate;</li> </ul>

- Minimizing disturbances and managing all land clearing to minimize burning; and,
- Maximizing revegetation in post-closure to actively sequester carbon.

**Air Quality Issues and Mitigation Measures Identified During the Application Review (p.63-64)**

**Issues:**

During the Application review, MOE, Working Group members, and First Nations, raised additional issues.

- The MOE raised concerns regarding potential generation of dust from the tailings beach should the proponent’s proposed mitigation strategies prove ineffective. MOE emphasized that excessive dust could result in potential negative impacts on human and environmental health off the mine site.
- The MOE also requested that the proponent monitor environmental impact from dust fall by establishing a soil and vegetation sampling plan with a focus on country foods.

**Mitigation:**

- With respect to MOE’s first concern, the BC EAO noted that the proponent has committed to designing a dust management plan, which includes monitoring dust from the tailings beach. This plan would be incorporated as part of the *Air Quality and Emissions Monitoring and Management Plan*.
- With respect to MOE’s second request, the proponent has committed to implementing a monitoring plan for metal concentrations in soils, local surface water, and vegetation.

Source: BC EAO 2009 p. 61-64

**Table D.8: BC EAO’s Assessment of Relevant Facts Affecting Vegetation**

**Vegetation Issues and Mitigation Measures Identified in the Application (p.67-69)**

**Issues:**

- Prior to mitigation, the mine site, transmission line and access road, would have negative effects on several vegetation key indicators.
- The most substantive and persistent environmental effects to the seven vegetation key indicators would occur within the mine footprint.
- The key issues for vegetation resources associated with the Project include:
  - loss of vegetation due to the direct environmental effects of clearing and the indirect environmental effects of Project activities;
  - changes in abiotic conditions necessary for vegetation development due to the direct environmental effects of ground disturbance and indirect environmental effects of changes to soil moisture or nutrient status; and,
  - changes in the structure or composition of vegetation communities due to the direct environmental effect of clearing and a variety of indirect environmental effects occurring in edge areas adjacent to Project disturbance and areas of activity.

**Mitigation:**

- Potential environmental effects in the transmission corridor and access road areas could be avoided through project design.
- Mitigation measures designed to avoid adverse effects on vegetation include:
  - planning and implementing environmentally sensitive project design such as the pre-engineering environmental constraints mapping and the site specific rare plant and rare ecosystem surveys that are recommended to precede construction activities;
  - designing Project disturbance boundaries to minimize risk of windthrow;
  - planning roads and watercourse crossings in a manner that maintains natural drainage patterns;

- collaboration with government agencies and forest licensees to minimize the removal of non-pine species of all ages;
- minimizing disturbance, especially within the 30 m buffer adjacent to wetland and riparian areas; and,
- avoiding vegetation loss through proper project design and mapping, such as avoiding construction activities on south-facing slopes over 15 percent and retaining humus layer and vegetation mat whenever possible.

**Vegetation Issues and Mitigation Measures Identified During the Application Review (p.69-71)**

**Issues:**

During the Application review the MOE, Working Group, and First Nations raised additional issues.

- The MOE raised concern that the Project would extinguish several rare plant communities. Specific concern was for one species of moss, *S. heterophyllum*. This species is not found anywhere else in the area and is confined to only eight other areas in the province.
- The MOE and Working Group members also expressed concern relating to the potential impacts to sensitive environments and wildlife habitat along the transmission line.
- The Alkali Lake Band expressed concern about use of herbicides in management and maintenance of the transmission line.
- The MOE requested compensation for the loss of 403.5 ha of wetland ecosystem.
- The Tsilhqot'in National Government identified several important plants that had not been previously identified for the assessment.

**Mitigation:**

- With respect to MOE's original concern, the proponent committed to physically transporting mossy rocks, with *S.heterophyllum*, to alternative undisturbed sites with similar aspects as its present location. A plant expert would guide this relocation.
- With respect to the second concern, the proponent was highly confident that wetlands and riparian areas could be avoided with the refinement of the transmission corridor.
- With respect to the Alkali Lake Band's concern, the proponent responded that their use of pesticides and herbicides would be in compliance with *British Columbia's Integrated Pest Management Act*.
- With respect to MOE's request for compensation, the proponent has committed to develop and implement a plan for achieving compensation for adverse effects to wetland habitat, the productive capacity of the lake, recreation values, wildlife, wildlife habitat, and the critical habitat of species at risk
- With respect to the unidentified plants, the proponent prepared a supplemental report that linked the plant species with the original key indicator species, and found that no effects or no substantial residual effects were predicted for any of the 52 plant species.

Source: BC EAO 2009 p. 67-71

**Table D.9: BC EAO's Assessment of Relevant Facts Affecting Terrain and Soils**

**Terrain and Soil Issues and Mitigation Measures Identified in the Application (p.72-74)**

**Issues:**

- It is anticipated that proper design and engineering practices would eliminate any issues related to mass wasting.
- Residual effect could result from increased water tables in areas that currently display evidence of mass wasting outside of the mine footprint.
- Based on prescribed mitigation measures, no measurable detrimental soil mixing, compaction and rutting, and erosion are anticipated.
- Soil loss and terrestrial land base losses are estimated to be 28 percent and 23 percent of the mine site in the LSA respectively. The magnitude is considered to be high and irreversible; however, both of these losses are in part due to the creation of new fish habitat.

- Soil chemical changes from metal loading of soils are anticipated. Specifically it is expected that copper and molybdenum would exceed Canadian Council of Ministers of the Environment (CCME) guidelines in years 2.4 and 4.6 of operations, respectively.
- Alienation of agricultural soil along the transmission line, due to the footprint of the transmission line, is anticipated in the short-term.

**Mitigation:**

The proponent's proposed mitigation measures include:

- Installing groundwater-monitoring equipment to identify and measure subsurface water in areas of suspected or known slope instability;
- Stabilizing, restoring, and re-vegetating banks and slopes to increase stability and minimize the rate of surface water run-off or groundwater infiltration;
- Minimizing work during periods of heavy rainfall or snowmelt;
- Reducing construction activities that undercuts or overloads dangerous slopes, or that redirects the flow of surface or groundwater;
- Rip-rapping and/or diverting streams that undercut potentially unstable slopes;
- Increasing holding strength of slope by pinning individual blocks, covering the slope in net or mesh, or installing rock anchors or rock bolts on dense spacing;
- Protecting the site from failure by constructing catchment structures such as basins or protective structures such as walls and embankments;
- Reducing the weight of potential slide mass, flattening the surface slope angle through grading, preventing water infiltration by controlling surface drainage, or reducing the accumulation of subsurface water by installing sub-drains;
- Diverting the flow away from the Project area using diversion barriers or channels, or providing catchment structures to contain the landslide material;
- Shoreline reinforcement at post-closure for the pit;
- Salvaging soils within the mine disturbance area and stockpiling away from Project activities associated with high metal deposition rates, such as the area surrounding the proposed open pit;
- Re-establishing drainages during re-contouring at closure to reduce erosion;
- Adjusting site contours to prevent erosion from surface water run-off;
- For areas where subsoil compaction would have occurred, ripping and loosening at closure, so Groundwater flow is not impeded prior to topsoil replacement; and,
- Applying nitrogen-phosphorus-potassium fertilizer to assist in revegetation efforts and improvement of soil nutrients, recognizing that self-sustaining vegetated cover is the end goal.

**Terrain and Soil Issues and Mitigation Measures Identified During the Application Review (p.75)**

**Issues:**

- During the Application review, MOE, MEMPR, and NRCan, raised additional issues. The key issue was:
- The MEMPR requested a commitment to implement a plan to monitor and ensure open pit stability to protect worker safety.

**Mitigation:**

- The proponent responded by formally including this commitment as a condition of an EA certificate.

Source: BC EAO 2009 p. 71-75

**Table D.10: BC EAO's Assessment of Relevant Facts Affecting Wildlife**

<b>Wildlife Issues and Mitigation Measures Identified in the Application (p.76-80)</b>
<b>Issues:</b>
<ul style="list-style-type: none"> <li>• Effects on habitat availability – Resulting from direct habitat loss or alteration and/or indirect loss or alteration from sensory disturbance and reduction of habitat patch size;</li> <li>• Disruption of movement patterns – Resulting from increased habitat/landscape fragmentation or higher road use levels that would limit daily or seasonal wildlife travel;</li> <li>• Increase in direct mortality risk – Resulting from site development, vehicle collisions, transmission line strikes, increased hunting or poaching, lethal control of problem wildlife, or reduction in secure habitat availability due to habitat fragmentation; and,</li> <li>• Reduction in animal health – Resulting from contamination of air, soil, water, or food sources or changes in food source abundance or composition.</li> </ul>
<b>Mitigation:</b>
<p>The proponent's proposed mitigation measures include:</p> <ul style="list-style-type: none"> <li>• Identifying and quantifying project effects on wildlife and vegetation at a local level on a scale that would enable the identification of appropriate mitigation/compensation measures;</li> <li>• Using helicopter no fly zones for sensitive areas such as sheep winter escape terrain or lambing areas;</li> <li>• Managing roadside vegetation along the access road to discourage animal foraging;</li> <li>• Committing to the strict and rigorous implementation of mitigation measures, in concert with the MOE and other agencies as appropriate, to eliminate or severely minimize the risk of direct mortality to grizzly bear;</li> <li>• Avoiding site clearing of moderate or higher quality denning habitat in mid-winter to reduce the risk of destroying or disturbing active dens;</li> <li>• Implementing the <i>Vegetation and Wildlife Management Plan</i> and <i>Materials Handling and Waste Management Plan</i> for dealing with potential human-bear conflicts;</li> <li>• Adhering to region-specific breeding bird timing windows for site clearing and vegetation management; and</li> <li>• Minimizing habitat loss, alteration and direct mortality for amphibians through transmission line construction in in the winter and with low-load vehicles.</li> </ul>
<b>Wildlife Issues and Mitigation Measures Identified During the Application Review (p.80-84)</b>
<b>Issues:</b>
<p>During the Application review the MOE, the Canadian Wildlife Service (CWS), and First Nations raised additional issues.</p> <ul style="list-style-type: none"> <li>• The MOE generally expressed dissatisfaction with the meaningfulness of the analysis produced by the proponent, which concluded that there would be no potential for significant effects for any of the species listed after mitigation.</li> <li>• The Alkali Lake Band raised concern about the potential impacts to wildlife along the proposed transmission line. Particularly concerned was raised for moose and deer populations.</li> <li>• The MOE requested compensation for the fish population, fish habitat, the productive capacity of the lake (Fish Lake), recreational values, wildlife, wildlife habitat, and the habitat of species at risk that may be adversely affected should the Project proceed as planned.</li> <li>• MOE and CWS expressed concern that a commitment to wildlife compensation should provide more certainty with respect to scheduling, planning, scope, goals and objectives, measures to identify impacts, and coordinating delivery of compensation measures.</li> </ul>
<b>Mitigation:</b>
<ul style="list-style-type: none"> <li>• Considering MOE's dissatisfaction, on October 2, 2009 the proponents submitted a supplemental report titled, <i>Local and Regional Environmental Effects on Wildlife and Vegetation Resources of Importance to the Tsilhqot'in National Government at the Proposed Mine site</i>. In this report the proponent used Predictive Ecosystem Mapping to characterize effects on wildlife by looking at the direct potential area-based losses to biogeoclimatic zones. The results of this analysis complimented the findings presented in the original Application, which</li> </ul>

indicated no significant adverse effects on wildlife.

- With respect to the Alkali Lake Band's concern, the proponent analyzed these species using habitat availability analysis. The proponent's habitat models showed no significant adverse effect for these species. Overall, given the mitigation measures and commitments in place, the proponent concluded that the effects of the transmission line are local, small in scale, and reversible at decommissioning.
- With respect to MOE's request for compensation, the proponent has committed to develop and implement a plan for achieving compensation for adverse effects to wetland habitat, recreation values, wildlife, wildlife habitat and the critical habitat of species at risk, taking into consideration the effectiveness of mitigation measures.
- The proponent has committed to working with MOE officials in a timely manner to develop a *Reference Document* that outlines details concerning roles and responsibilities, timing, and strategies for implementing the plan outlined.

Source: BC EAO 2009 p. 76-84.

**Table D.11: BC EAO's Assessment of Relevant Facts Affecting the Regional and Local Economy**

Regional and Local Economy Issues and Mitigation Measures Identified in the Application (p. 86-90)
<b>Issues:</b>
<ul style="list-style-type: none"> <li>• The Project is expected to result in positive economic effects at the local and regional scales during all phases of the undertaking, owing to capital and operating expenditures on labour, materials, equipment, supplies, and services.</li> <li>• The Project would require approximately 375 direct person years annually during the construction and operations phases.</li> <li>• The Project would result in an increase in local construction employment, local mine operation employment, and local spin-off (indirect income) benefits associated with the mine workforce.</li> <li>• The Project would have a significant and positive effect on regional economic development because it would help diversify the local and regional economic base and create new opportunities for contractors and suppliers.</li> <li>• During construction and operations, sales tax and consumption tax revenues would be generated by the workforce and by the proponent.</li> <li>• Negative Project effects on tourism include loss of tenure area, air quality effects, visual quality effects, and noise. This is not expected to lead to a significant adverse effect on tourism. Positive effects of the Project would include road improvements and the potential for increased mine-related business that could result in increased revenues for local operas.</li> <li>• The Project overlaps with eight registered guide outfitter tenures; however, tenure loss is estimated to be less than one percent.</li> </ul>
<b>Mitigation of Negative Effects and Maximization of Benefits:</b>
<ul style="list-style-type: none"> <li>• As the economic effects of the Project would be significant and positive at both the local and regional scale, the proponent would implement policies to maximize the benefits to local labor and economic development.</li> <li>• To increase labour market benefits, the proponent would: <ul style="list-style-type: none"> <li>○ explore local hiring policies;</li> <li>○ provide education and training opportunities;</li> <li>○ explore local procurement policies; and</li> <li>○ work with First Nations.</li> </ul> </li> <li>• To maximize local employment income, the proponent would: <ul style="list-style-type: none"> <li>○ undertake partnership training opportunities;</li> </ul> </li> </ul>

- recruit local workers; and
- provide flexible employment policies.
- To facilitate the participation of local businesses and individuals in contracting for the Project, the proponent would:
  - consider local and regional capabilities when developing contract scope;
  - include local suppliers and contractors in its corporate database;
  - expect contractors and suppliers to invest in local community success through their purchasing, hiring, subcontracting, and support practices; and
  - work with local and regional economic development offices.
- No mitigation is required for government revenues, as the Project's effect on this issue would be significant and positive.
- Proposed mitigation for tourism includes discussions with commercial recreation licensees and tourism operas to mitigate effects to noise, the atmospheric environment, and to Project-related transportation effects. In addition, procurement agreements would be considered with local area operas for accommodation, food and beverage.
- Mitigation for the Project's effect on the hunting economy would include consultation and developing measures to minimize effects to outfitters and game.

#### **Regional and Local Economy Issues and Mitigation Measures Identified During the Application Review (p. 90)**

##### ***Issues:***

During the Application review the Working Group, First Nations and members of the public raised additional issues.

- Key issues were raised by Working Group member's, which had concerns about labour force participation, the contribution of traditional activities to employment income, and continued monitoring of economic issues.

##### ***Mitigation:***

- The proponent's responses are detailed in Appendix B of BC EAO's assessment report. The BC EAO was satisfied by the quality of the proponent's responses, mitigation measures, and commitments.

**Source:** BC EAO 2009 p. 86-90

**Table D.12: BC EAO's Assessment of Relevant Facts Affecting the Selected Social Issues**

Social Issues and Mitigation Measures Identified in the Application (p. 91-93)
<b>Issues:</b>
<ul style="list-style-type: none"> <li>• The Project will increase the population by 5.5 to 6 percent annually during years 3 to 14 of operations, returning population levels to those experienced in the early 2000s.</li> <li>• It is expected that the Project will create demand for approximately 200 housing units in the construction phase, increasing to almost 500 in year one, maintaining over 600 units from years 5 to 10 and decreasing to 200 by year 20.</li> <li>• The projected traffic, as result of the Project, would be below the carrying capacity of local road networks.</li> <li>• Community services, which include commercial, retail and industrial services, recreation, basic infrastructure (water, sewer, and transportation), police, fire, justice, and education, are expected to undergo increased demand with increased population. The Project is expected to increase demand for services by approximately 3.5 percent during mine operations in years 3 to 10 and less in other years.</li> <li>• Increased populations are expected to affect hospital and medical, emergency, and social services. Additionally Project employment conditions, such as high incomes and extended shift work, may contribute to increased risky behaviour of workers. There will also be increases pressures on certain components of the health care system, such as drug and alcohol treatment and on-reserve addiction counsellors.</li> </ul>
<b>Mitigation:</b>
<ul style="list-style-type: none"> <li>• To manage potential housing pressures the proponent committed to: <ul style="list-style-type: none"> <li>○ Working with the CRD, City of Williams Lake, local communities, and the local real estate industry to anticipate, quantify and monitor housing demand and potential supply;</li> <li>○ Alerting and informing landlords and other accommodation suppliers in local communities to anticipate demand for short-term rental units to facilitate settlement; and,</li> <li>○ Assisting in establishing a housing placement service for all new employees.</li> </ul> </li> <li>• To manage Project related transportation and traffic effects, the proponent has committed to designing a <i>traffic management strategy</i>, which includes: <ul style="list-style-type: none"> <li>○ bussing employees;</li> <li>○ minimizing on-site parking;</li> <li>○ scheduling Project traffic to avoid peak periods;</li> <li>○ ensuring proper signage;</li> <li>○ radio controlling trucks and buses;</li> <li>○ monitoring road conditions;</li> <li>○ providing regular reports to drivers; and</li> <li>○ ensuring truck drivers have safe driving records.</li> </ul> </li> <li>• The proponent would encourage employees to live in Williams Lake to minimize localized effects on small rural communities.</li> </ul>

### Social Issues and Mitigation Measures Identified During Application Review (p. 93-95)

#### Issues:

During the Application review the Working Group members raised additional issues.

- Alkali Lake Band members expressed concerns about an increase in drug and alcohol use in neighbouring communities.
- The Working Group commented on the social effects of the loss of the Fish Creek Watershed Fishery, which would eliminate recreational and guided sports fishing at Fish Lake and the associated fishery.
- The Working Group also raised concern over the Project's effect on trapping, which is an important activity for those involved.
- *Mitigation:*
- With respect to concerns raised by Alkali Lake Band members, the proponent has committed to working with them on programs that would minimize the use of drugs and alcohol in these communities. In addition, the proponent has ensured that the Project site would be a drug and alcohol free (dry) working environment.
- With respect to the second issue raised, the proponent anticipates that the creation of Prosperity Lake and associated stream habitat should increase opportunities for First Nation's fisheries and anglers. The proponent added that Little Fish Lake would be available for angling during the lag time that Prosperity Lake is being created. The proponent would institute fishing and hunting bans for contractors and mine employees to protect stocks from over exploitation.
- With respect to Project's effect on tourism and recreation, the proponent is of the opinion that the effects would be negligible in terms of land use due to the abundance of recreational sites and wilderness areas.
- The proponent's Visual Quality Objectives Analysis also determined that the TSF, the most visible feature of the mine site, would not be visible for the large majority of the recreation use sites.
- With respect to the trapping issue, the proponent would impose a hunting ban for mine employees, and work with affected trappers on management strategies and on relocation of traplines. The proponent does not anticipate effects on furbearers within the mine study area.

Source: BC EAO 2009 p.91-95

**Table D.13: BC EAO's Assessment of Relevant Facts Affecting Archeological and Heritage Resources**

### Archaeological and Heritage Resources Issues and Mitigation Measures Identified in the Application (p.96-97)

#### Issues:

- The proponent developed a scientific ranking system for addressing and mitigating Project impacts on archaeological and heritage resources, which took into account the projected subsurface density of lithics (stone tools and other chipped stone artefact) and the presence of artefacts or archaeological features.
- *39 sites (49%) were assigned a low scientific value-* The *low* ranking is assigned to traits with an extremely small site area, lack of archaeological features, absent or negligible subsurface artefacts and/or an absence of diagnostic artefacts or formed tools.
- *29 sites (37%) were assigned a moderate scientific value -*The *moderate* ranking is assigned to sites with a confirmed or expected presence of stratified cultural deposits or sites which include subsistence features and/or an artefact component in which diagnostic artefacts or formed tools have been identified.
- *11 sites (14%) were assigned a high scientific value-* The *high* ranking is assigned to any site with a habitation feature, human remains, or a combination of multiple site components indicating varied or prolonged site usage and additional work may be considered appropriate.

#### Mitigation:

- No further study is proposed for the sites identified as having low scientific value.

- For the 29 moderately significant sites, five can be avoided, while small-scale archaeological investigation is recommended for an additional 16. No investigation is recommended for the remaining eight, based on detailed review of these sites.
- For the 11 highly significant sites, seven can be avoided, while additional study is recommended for the remaining four sites.
- As part of final design and before the transmission line is built, the Proponent would undertake an *Archaeological Investigation Assessment* along the preliminary center-line of the transmission line. It is expected that during the final design phase, alignment and placement of the poles can be adjusted to avoid any conflict with identified and recorded archaeological sites.

#### Archaeological and Heritage Resources Issues and Mitigation Measures Identified During Application Review (p. 97-98)

##### Issues:

During the Application review First Nations and The Ministry of Tourism, Culture and the Arts (MTCA) raised additional issues. Key issues included the following:

- The MTCA noted that: systematic site excavation (of at least 16 sites); a survey of drained Fish Lake basin for paleo-environmental data; and, lithic sourcing, should be included in the compensation for the loss or disturbance of all 79 protected archaeological sites.
- The MTCA also requested that an Archaeological Impact Assessment (AIA) be completed for the transmission line corridor, prior to its construction.

##### Mitigation:

- With respect to MTCA's comments, the proponent committed to: excavating 16 of the 79 sites; completing a survey of the lake basin; investigating lithic sourcing; and, completing an AIA for the transmission line and new access road.

Source: BC EAO 2009 p. 95-98

**Table D.14: BC EAO's Assessment of Relevant Facts Affecting Human Health**

#### Human Health Issues and Mitigation Measures Identified in the Application (p.99-101)

##### Issues:

- Emissions of CACs from Project activities have the potential to affect human health. Air quality and subsequent human health have the potential to be affected by:
  - operation of the diesel genera and heavy machinery;
  - pre-production site preparation;
  - the clearing of overburden;
  - open pit mining activities such as blasting, ore crushing, conveyance and stockpiling; and
  - vehicular traffic on access roads.
- Deposition of inorganic elements on soil from releases from mining activity would have the potential to increase soil metal concentrations and affect country foods for human consumption and ecological health. Specifically;
  - Metal loading was evaluated for arsenic, boron, chromium and copper for the consumption of vegetation, willow ptarmigan, muskrat, and moose;
  - Soil concentrations of boron and copper are expected to increase above soil quality guidelines; and
  - Metal loadings during the operations phase are minor and would only slightly increase these levels.
- Release, seepage or discharge of groundwater and surface water and associated metals to watershed post-closure have the potential to increase the metal body burden of fish tissue

and thus potentially affect human health and ecological receptors through consumption.

- Arsenic, chromium, copper and selenium concentrations would be anticipated in fish tissue.
- Consumption of fish from lower Fish Creek would result in a potential effect on human health.
- Surface water concentrations would be expected to be below drinking water quality objectives,

**Mitigation:**

- No specific health mitigation is proposed in the Application beyond what is proposed in the air quality, water quality, and terrain and soils sections.
- While CAC levels in the Nemiah Valley are expected to increase throughout construction and operations phases of the Project, the proponent has indicated that emission effects would be relatively minor and well below background concentrations.
- The predicted levels of boron and copper in country food species are anticipated to be below health guidelines for both baseline and operations phases of the Project. The Proponent determined in the Application that the potential risk of metal loading to humans would be no greater than the baseline conditions.
- Regarding the issue of fish tissue, a significant adverse effect on human health is not expected, as the increase in the concentrations of metals in fish tissue would be so minimal that a person would have to eat 40 meals of fish caught at this location per 60 day period to exceed health guidelines.
- Regarding the issue of drinking water, a significant adverse effect on human health is not expected as local harvesters may use water bodies only occasionally for drinking water.

**Human Health Issues and Mitigation Measures Identified During Application Review (p.101)**

**Issues:**

During the Application review Health Canada (HC), Working Group, First Nations and members of the public raised additional issues.

- HC raised concern over water quality effects on country foods, and commented that water quality at the TSF and flooded pit may be an issue, as wildlife that may be drinking from these sources may be eaten as country foods.
- HC also raised concern over the quantity estimates used for fish that members of Xeni Gwet'in may be consuming. HC was concerned that the numbers used, which were based on Tahltan studies, may be too low.

**Mitigation:**

- With respect to HC's first concern, the proponent was of the opinion that it was unlikely that wildlife would not have an increased body burden of metals because these metals would not accumulate, there are many alternative water sources in the area, and wildlife would not consume enough water to lead to such results.
- With respect to HC's second concern, the proponent found it unlikely that Xeni Gwet'in would consume the modeled amount of fish from the two mixing points in lower Fish Creek in one year (40 meals during a 60 day period for adults).

Source: BC EAO 2009 p.99-101

**Table D.15: BC EAO's Assessment of Relevant Facts Affecting Healthy Living**

<b>Healthy Living Issues and Mitigation Measures Identified in the Application (p.102)</b>
<p><b>Issues:</b></p> <ul style="list-style-type: none"> <li>• The Project is likely to have negative implications for the continuation and expansion of opportunities for various physical and recreational pursuits in the vicinity of the Project.</li> <li>• Recreational activities such as hunting, fishing, kayaking, canoeing, rafting, mountain biking, and backpacking, would be curtailed at the mine site during operations and with the destruction of Fish Lake and the associated recreation site.</li> </ul> <p><b>Mitigation:</b></p> <ul style="list-style-type: none"> <li>• Although the Project would severely limit physical and recreational pursuits in the vicinity mine site, the proponent is of the opinion that there are many other well-used and suitable recreation areas in the Taseko River watershed.</li> </ul>
<b>Healthy Living Issues and Mitigation Measures Identified During Application Review (p.102)</b>
<p><b>Issues:</b></p> <ul style="list-style-type: none"> <li>• The assessment process during the application review revealed that the impact on public use of the land for recreational activities would be high magnitude but with a small geographic extent.</li> <li>• Consideration was also given to whether there might be opportunities to promote the expansion of existing levels of activities in the region.</li> </ul> <p><b>Mitigation:</b></p> <ul style="list-style-type: none"> <li>• The proponent was of the opinion that the creation of Prosperity Lake would create additional recreational activities in the area.</li> <li>• The proponent cautioned that a significant increase in recreational activities by employees might hamper First Nations' opportunities for fishing and hunting in the region.</li> <li>• To address the questions about how physical activity levels might be improved through design of the Project, the Proponent discussed the potential of: <ul style="list-style-type: none"> <li>• creating on-site recreational facilities such as squash or tennis courts, and</li> <li>• creating an opportunity for camp food services that serve healthy meals.</li> </ul> </li> </ul>

Source: BC EAO 2009 p.102

**Table D.16: Steps of the Provincial Consultation Process**

Date	EA Review Process Steps and Comments
<i>January 2007</i>	<ul style="list-style-type: none"> <li>The BC EAO was advised that DFO would be recommending a federal panel process.</li> </ul>
<i>December 2007</i>	<ul style="list-style-type: none"> <li>The BC EAO and the CEAA provided the draft Joint Panel Agreement (including a Consultation Protocol) to First Nations and the proponent for review and comment.</li> <li>The TNG expressed significant opposition to the proposal.</li> </ul>
<p>Despite over a year of consultation and discussion of joint panel agreement models by BC EAO and the CEAA it was not possible to develop a joint panel agreement that was acceptable to First Nations, the proponent, and both levels of government.</p>	
<i>May 13, 2008</i>	<ul style="list-style-type: none"> <li>In a letter to the TNG, the BC EAO set out options for proceeding with the review.</li> </ul>
<i>May 27, 2008</i>	<ul style="list-style-type: none"> <li>In a letter to the BC EAO, the TNG indicated that, in their view, opinions proposed did not meet the legal requirements for a proper EA and meaningful consultation and accommodation.</li> </ul>
<i>June 22, 2008</i>	<ul style="list-style-type: none"> <li>The Minister of Environment ordered that the provincial EA process be undertaken by the BC EAO.</li> </ul>
<i>July 2, 2008</i>	<ul style="list-style-type: none"> <li>The BC EAO circulated a draft of a procedural order, which establishes the scope, procedure and methods of the provincial EA, for review and comment.</li> </ul>
<i>October 2008</i>	<ul style="list-style-type: none"> <li>The BC EAO issued an order that formally directed the proponent to consult with all the bands of the Tsilhqot'in Nations.</li> </ul>
<p>The TNG have repeatedly stated that they believe the Minister's decision to not proceed with a joint panel was unfair, inappropriate and in bad faith. The BC EAO does not share this position.</p>	
<i>June 2, 2009</i>	<ul style="list-style-type: none"> <li>In a second letter to the Minister of Environment (MOE) and the Minister of Energy, Mines, and Petroleum resources (MEMPR), the TNG formally stated that it would not participate in the provincial EA process.</li> <li>The BC EAO responded by encouraging the TNG to participate in the EA process, offering to meet on a separate government-government basis, and highlighting its strengths in relation to the panel hearing process.</li> </ul>
<i>February 20, 2009</i>	<ul style="list-style-type: none"> <li>The TNG again wrote to the BC EAO, CEAA, and MEMPR outlining its concerns with respect to several aspects of the EA.</li> </ul>
<i>March 31, 2009</i>	<ul style="list-style-type: none"> <li>The province responded through a joint letter authored by the BC EAO, MEMPR, and First Nations Initiatives Division (FNID).</li> <li>The joint letter tried to address what each of the groups understood to be TNG's main concerns, which included:               <ul style="list-style-type: none"> <li>The consultation process for the Project;</li> <li>Lead agencies with respect to consultation;</li> <li>The mandate for accommodation;</li> <li>The mandate for approval or rejection; and</li> <li>Capacity funding</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• With respect to each of the concerns, the joint letter: <ul style="list-style-type: none"> <li>○ Explained that the objective of the consultation process is to determine what potential conditions or other accommodation measures may be appropriate given Tsilhqot'in Nation interests related to proven or asserted Aboriginal rights and title;</li> <li>○ Confirmed that the BC EAO is the lead provincial agency for carrying out consultation under the <i>BC EAA (2002)</i>;</li> </ul> </li> <li>• Explained that the FNID is offering a parallel process to develop a revenue-sharing agreement with the TNG in relation to the Project, which would be separate from the consultation being undertaken by BC EAO; and</li> <li>• Confirmed that the federal panel process and the provincial review are harmonized in numerous ways.</li> </ul>
<b>July 14, 2009</b>	<ul style="list-style-type: none"> <li>• The BC EAO notified all First Nations that in accordance with the <i>Prescribed Time Limits Regulation</i> of the <i>BC EAA (2002)</i>, the Panel would hold public hearings after BC EAO referral to the Minister.</li> </ul>
Given the provisions of the <i>Prescribed Time Limits Regulation</i> , the BC EAO would not be in a position to consider submissions at the federal panel hearings in the assessment report and recommendations to Ministers.	
<b>September 28, 2009 and October 15, 2009</b>	<ul style="list-style-type: none"> <li>• In all subsequent letters to the Minister, the TNG have expressed dissatisfaction with the provincial process and argued that the provincial EA process should be suspended, and consultation with the TNG deferred, until such time as the panel hearings are complete.</li> </ul>
<b>November 18, 2009</b>	<ul style="list-style-type: none"> <li>• The Minister addressed TNG's comments and confirmed that the provincial EA process would not be suspended pending any decisions by the Panel.</li> </ul>

Source: BC EAO, 2009 p. 129-133

**Table D.17: Affected First Nations and the Project Components**

First Nation	Project Components Within Traditional Territories
<b>Secwepemc</b>	
<i>Soda Creek Band</i>	<ul style="list-style-type: none"> <li>• Access Road and Transportation Corridor</li> <li>• Concrete Loading Facility</li> </ul>
<i>Alkali Lake Band</i>	<ul style="list-style-type: none"> <li>• Mines Site</li> <li>• Transmission Line</li> <li>• Access Road and Transportation Corridor</li> <li>• Fish Compensation Works</li> </ul>
<i>High Bar Band</i>	<ul style="list-style-type: none"> <li>• Transmission Line</li> </ul>
<i>Canoe Creek Band</i>	<ul style="list-style-type: none"> <li>• Transmission Line</li> </ul>
<i>Williams Lake Band</i>	<ul style="list-style-type: none"> <li>• Transmission Line</li> <li>• Access Road and Transportation Corridor</li> </ul>
<b>Tsilhqot'in Nation</b>	
<i>Nemiah Band</i>	<ul style="list-style-type: none"> <li>• Mines Site</li> <li>• Transmission Line</li> <li>• Access Road and Transportation Corridor</li> <li>• Fish Compensation Works</li> </ul>
<i>Stone Band</i>	<ul style="list-style-type: none"> <li>• Mines Site</li> <li>• Transmission Line</li> <li>• Access Road and Transportation Corridor</li> <li>• Fish Compensation Works</li> </ul>
<i>Toosey Band</i>	<ul style="list-style-type: none"> <li>• Transmission Line</li> <li>• Access Road and Transportation Corridor</li> </ul>
<i>Anaham Band</i>	<ul style="list-style-type: none"> <li>• Access Road and Transportation Corridor</li> </ul>
<i>Alexandria Band</i>	<ul style="list-style-type: none"> <li>• Access Road and Transportation Corridor</li> <li>• Concrete Loading Facility</li> </ul>
<i>Alexis Creek Band and Ulkatcho Band</i>	<ul style="list-style-type: none"> <li>• The Traditional Territories of Tsi Del Del (Alexis Creek) and Ulkatcho are understood not to be geographically located within the RSA. However those communities include Tsilhqot'in persons who have Aboriginal rights throughout the Tsilhqot'in Traditional Territory.</li> </ul>

Source: BC EAO, 2009 p. 103-104

**Table D.18: Key Issues Raised by First Nations that have Asserted Aboriginal Rights to Areas that are Potentially Affected by the Project**

<b>Key Issues Raised by Alkali Lake Band Throughout the EA</b>
<b><i>Environmental Concerns</i></b>
<ul style="list-style-type: none"> <li>• Wildlife impacts along the transmission line, including habitat fragmentation.</li> <li>• Inadequate study of moose, bear, and wild horses on east side of Fraser River.</li> <li>• Increased access for hunters and poachers along the transmission line corridor.</li> <li>• Inadequate cumulative effects assessment: logging, climate change and drought, risk to habitat in conjunction with the damage of the pine beetle.</li> <li>• Potential increased pollution and contamination of waters and lands.</li> <li>• Alternative transmission line routes.</li> </ul>
<b><i>Heritage Concerns</i></b>
<ul style="list-style-type: none"> <li>• Potential archaeological impacts along the transmission line.</li> <li>• The quality and comprehensiveness of traditional use information used in the Application.</li> <li>• Disturbance of sites of cultural and spiritual importance.</li> </ul>
<b><i>Social Concerns</i></b>
<ul style="list-style-type: none"> <li>• Potential impacts on the collection of plant food, berries and medicines.</li> <li>• Concern that bringing power to the region would result in increased development.</li> </ul>
<b><i>Economic Concerns</i></b>
<ul style="list-style-type: none"> <li>• Concern that jobs from the Project would not benefit First Nations.</li> </ul>
<b>Key Issues Raised by the TNG Throughout the EA</b>
<b><i>Environmental Concerns</i></b>
<ul style="list-style-type: none"> <li>• The loss of Fish Lake (Teztan Biny):</li> <li>• Loss of the ability to fish at Fish Lake (Teztan Biny);</li> <li>• Loss of Fish Lake (Teztan Biny) as a sacred area for ceremonies; and</li> <li>• Loss of genetically unique species of rainbow trout .</li> <li>• Potential impacts on fisheries throughout the Taseko, Chilko, Chilkotin and Fraser River watershed.</li> <li>• Reliability of predictions of hydrology, hydrogeology and ML/ARD in the Application.</li> <li>• Potential impacts on water quality.</li> <li>• Potential contamination of plants and berries gathered by Tsilhqot'in people.</li> </ul>

<ul style="list-style-type: none"> <li>• Impacts to wildlife species of importance to the Tsilhqot'in due to habitat fragmentation, alienation of hunting grounds, and increased access of non- aboriginal hunters.</li> <li>• Bird mortality from collisions with the transmission line.</li> <li>• Light and noise from the mine would impact residents of the Nemiah Valley.</li> </ul>
<b>Heritage Concerns</b>
<ul style="list-style-type: none"> <li>• Lack of traditional use information in the Application and inadequate characterization of impacts on Tsilhqot'in people.</li> </ul>
<b>Social Concerns</b>
<ul style="list-style-type: none"> <li>• Influx of money would have the potential to create issues of drugs and alcohol abuse.</li> <li>• Increased access to the area (mine site, roads, and transmission corridor).</li> </ul>
<b>Economic Concerns</b>
<ul style="list-style-type: none"> <li>• Long-term feasibility of the mine.</li> <li>• Concern that jobs from the Project would not benefit First Nations.</li> </ul>

<b>Key Issues Raised by The Canoe Creek Indian Band During the EA Pre-Application Stage</b>
<ul style="list-style-type: none"> <li>• Increased access for hunters provided by the transmission corridor.</li> <li>• Limited archaeological work proposed along the transmission corridor.</li> <li>• Limited opportunities for Canoe Creek involvement in study design and execution.</li> <li>• Desire for a consultation protocol between BC EAO and Canoe Creek.</li> <li>• The need for BC EAO to conduct a preliminary assessment of potential impacts to the exercise of rights.</li> <li>• Inconsistencies between the provincial <i>Terms of Reference</i> and federal EIS Guidelines.</li> </ul>

Source: BC EAO, 2009 p. 107-109

**Table D.19: BC EAO's Preliminary Assessment of the Project's Affect on Secwepemc Asserted and Established Rights**

<b>Canoe Creek Band (p. 110-112)</b>
<b>Hunting</b>
<ul style="list-style-type: none"> <li>• The BC EAO acknowledges that the Shuswap people have an Aboriginal right to hunt, <b><i>although the geographical extent of the area to which this right applies is unclear.</i></b></li> <li>• Given specific accommodation measures and the proponent's commitments, the BC EAO does not anticipate an adverse impact on the ability of Canoe Creek members to hunt.</li> </ul>
<b>Harvesting Timber</b>

- Canoe Creek takes the position that it has a recognized right to harvest trees for domestic purposes.
- Given specific accommodation measures and the proponent's commitments, the BC EAO does not anticipate an adverse impact on the ability of Canoe Creek members to harvest timber.

#### **Fishing**

- The BC EAO acknowledges that Canoe Creek has a good to strong *prima facie* case in support of an Aboriginal right to fish for food, social and ceremonial purposes, **although the geographical extent of the area to which this right would apply is unclear.**
- Given specific accommodation measures and the proponent's commitments, the BC EAO does not anticipate that the Project would have an adverse impact on fishing activities in the Canoe Creek territory.

#### **Gathering Plants**

- The Canoe Creek Band did not raise concerns regarding potential impacts on the ability to gather plants.
- BC EAO anticipates minimal impact on the ability to gather plants or on the availability of plants.

#### **Aboriginal Title**

- BC EAO acknowledges that a good to strong *prima facie* case exists in support of an Aboriginal title claim to the general area of the Project's transmission line crossing of the Fraser River; however, **the BC EAO is not clear as to the identity of the holder of any such Aboriginal title.**
- Given specific accommodation measures, the proponent's commitments, and the reversibility of the impacts, the BC EAO does not anticipate that the construction and operation of the transmission line would have any material adverse impact on Canoe Creek's Aboriginal title to the area of the Project or on the use of the area if Aboriginal title were to be proven in the future.

### **Alkali Lake Band (p.112-114)**

#### **Hunting**

- The BC EAO acknowledges that the Shuswap people have an Aboriginal right to hunt, **although the geographical extent of the area to which this right applies is unclear.**
- Given specific accommodation measures and the proponent's commitments, the BC EAO does not anticipate an adverse impact on the ability of Alkali Lake Band members to hunt.

#### **Harvesting Timber**

- **The BC EAO is not certain** whether the Alkali Lake Band asserts an Aboriginal right to harvest timber in the area that could be impacted by the Project, nor does BC EAO have information as to the purposes of such a right.
- Given specific accommodation measures and the proponent's commitments, the BC EAO does not anticipate that the removal of timber as part of the construction of the transmission line right of way would have any adverse impact on the ability of Alkali Lake Band members to harvest timber.

#### **Fishing**

- **The BC EAO is not certain** whether Alkali Lake Band asserts an Aboriginal right to fish in the area that could be impacted by the Project.

<ul style="list-style-type: none"> <li>Given specific accommodation measures and the proponent's commitments, the BC EAO does not anticipate that the Project would have an adverse impact on Alkali Lake Band fishing rights.</li> </ul>
<p><b>Gathering Plants</b></p>
<ul style="list-style-type: none"> <li>The BC EAO acknowledges that Alkali Lake Band members use the area potentially affected by the transmission line for the collection of plant foods, berries and medicines.</li> <li>Given specific accommodation measures and the proponent's commitments, BC EAO anticipates minimal impact on the ability to gather plants or on the availability of plants.</li> </ul>
<p><b>Aboriginal Title</b></p>
<ul style="list-style-type: none"> <li>The BC EAO understands that Alkali Lake Band asserts aboriginal title over much of the area encompassing the Project transmission line.</li> <li>Given specific accommodation measures, the proponent's commitments, and the reversibility of the impacts, the BC EAO is of the view that is unlikely that the construction and operation of the transmission line would have any material adverse impact on Canoe Creek's Aboriginal title to the area of the Project or on the use of the area if Aboriginal title were to be proven in the future.</li> </ul>

<p align="center"><b>Soda Creek Band (p.114-116)</b></p>
<p><b>Hunting</b></p>
<ul style="list-style-type: none"> <li>The BC EAO acknowledges that the Shuswap people have an Aboriginal right to hunt, <b>although the geographical extent of the area to which this right applies is unclear.</b></li> <li>Given specific accommodation measures and the proponent's commitments, the BC EAO does not anticipate an adverse impact on the ability of the Williams Lake Band to hunt.</li> </ul>
<p><b>Harvesting Timber</b></p>
<ul style="list-style-type: none"> <li><b>The BC EAO is not certain</b> whether the Soda Creek Band asserts an Aboriginal right to harvest timber in the area that could be impacted by the Project, nor does BC EAO have information as to the purposes of such a right.</li> <li>BC EAO is not aware of any potential impact on timber supply or harvest as a result of the proposed use of the existing rail transfer facility near Macallister (Soda Creek's traditional territory overlaps this facility).</li> </ul>
<p><b>Fishing</b></p>
<ul style="list-style-type: none"> <li>The proposed mine site and Fish Lake are located a considerable distance southwest of what BC EAO understands to be Soda Creek's asserted traditional territory. BC EAO does not expect impacts to fish and fish habitat as a result of using the load out facility near Macalister.</li> </ul>
<p><b>Gathering Plants</b></p>
<ul style="list-style-type: none"> <li>The Soda Creek Band did not raise concerns during the review regarding potential impacts on the ability to gather plants.</li> <li>Given specific accommodation measures and the proponent's commitments, BC EAO anticipates minimal impact on the ability to gather plants or on the availability of plants.</li> </ul>

### **Aboriginal Title**

- The BC EAO understands that the Soda Creek Band asserted traditional territory overlaps the existing rail transfer facility near Macallister.
- Given specific mitigation measures, does not anticipate that the Project would have and adverse impact on Aboriginal title.

### **Williams Lake Band (p.116-118)**

#### **Hunting**

The BC EAO acknowledges that the Shuswap people have an aboriginal right to hunt, **although the geographical extent of the area to which this right applies is unclear.**

Given specific accommodation measures and the proponent's commitments, the BC EAO does not anticipate an adverse impact on the ability of Soda Creek members to hunt.

#### **Harvesting Timber**

**The BC EAO is not certain** whether the Williams Lake Band asserts an Aboriginal right to harvest timber in the area that could be impacted by the Project, nor does BC EAO have information as to the purposes of such a right.

BC EAO does not anticipated that the removal of timber as part of the construction of the transmission line right of way would have any adverse impact on timber supply or harvest.

#### **Fishing**

**The BC EAO is not certain** whether Williams Lake Band asserts an Aboriginal right to fish in the area that could be impacted by the Project.

The proposed mine site and Fish Lake are located outside and west of what BC EAO understands to be Williams Lake's asserted traditional territory.

#### **Gathering Plants**

The Williams Lake Band did not raise concerns during the review regarding potential impacts on the ability to gather plants.

Given specific accommodation measures and the proponent's commitments, BC EAO anticipates minimal impact on the ability to gather plants or on the availability of plants.

#### **Aboriginal Title**

The BC EAO understands that the transmission line overlaps with a portion of the Williams Lake Band's traditional territory.

Given specific accommodation measures, the proponent's commitments, and the reversibility of the impacts, BC EAO is of the view that it is unlikely that the construction and operation of the transmission line would have any material adverse impact on the Williams Lake Band claimed Aboriginal title to the area of the Project or on the use of the area if aboriginal title were to be proven in the future

Source: (BC EAO, 2009 p. 110-118)

**Appendix D.20: BC EAO’s Preliminary Assessment of the Project’s Affect on Tsilhqot’in Asserted and Established Rights**

Tsilhqot’in
<b>Fishing (p. 123-124)</b>
<b>Context:</b>
<ul style="list-style-type: none"> <li>• Baptiste et al. assert a site-specific Aboriginal right to fish in Fish Lake for food, social and ceremonial purposes, and further assert that the loss of Fish Lake constitutes an extinguishment of the right.</li> <li>• The province does not agree that members of the Tsilhqot’in Nation have specific Aboriginal right to fish in Fish Lake, and denies that destruction of Fish Lake amounts to an extinguishment Aboriginal fishing rights. The province admits that members of the Tsilhqot’in Nation hold Aboriginal rights for food, social, and ceremonial purposes; however, the province does not consider these right to include:             <ul style="list-style-type: none"> <li>○ an attachment to lands and resources in Fish Lake;</li> <li>○ the protection and conservation of the cultural, ecological and spiritual integrity of the lands, waters and resources in Fish Lake; or,</li> <li>○ the right to a particular quantity and quality of fish and fish habitat at Fish Lake (p. 124)</li> </ul> </li> <li>• The BC EAO highlighted that Tsilhqot’in Nation members fish in the Chilko Lake, Taseko Lakes, and their rivers. The BC EAO further highlighted that there are more than 20 fish bearing lakes within the Claim Area, not including Fish Lake and Little Fish Lake.</li> </ul>
<b>BC EAO’s Conclusions:</b>
<ul style="list-style-type: none"> <li>• The BC EAO is of the opinion that the Project, through the destruction of Fish Lake, would interfere with admitted Aboriginal fishing rights; however, this interference is considered justifiable given that:             <ul style="list-style-type: none"> <li>○ interference is minimal such that the rights are still meaningful notwithstanding the loss of Fish Lake;</li> <li>○ consultation and accommodation is perceived to be meaningful to date, and include measures to mitigate the loss of the lake; and</li> <li>○ the Project is of great regional and provincial importance (p. 124)</li> </ul> </li> </ul>
<b>Hunting (p. 124-126)</b>
<b>Context:</b>
<ul style="list-style-type: none"> <li>• Baptiste et al. assert that the Project would adversely affect Aboriginal hunting and trapping rights described in the <i>William</i> decision. Baptiste et al. highlight that the Project would directly and indirectly:             <ul style="list-style-type: none"> <li>○ diminish the overall quality and quantity of bird and wildlife habitat;</li> <li>○ fragment wildlife habitat and disrupting the migration and residency patterns of birds and wildlife;</li> <li>○ increase wildlife mortality from increased motor vehicle traffic and increased human activity;</li> <li>○ increase bird mortality from collisions with the transmission line;</li> <li>○ impact water quality and quantity, with consequent impacts on the quality and quantity of birds and wildlife that are hunted and trapped by Tsilhqot’in members;</li> <li>○ lead to loss of access for Tsilhqot’in members to traditional hunting and trapping grounds in and around the Project lands;</li> <li>○ increase the amount of human activity in the area and thus reducing the lands over which hunting and trapping can be safely carried out; and,</li> </ul> </li> </ul>

- increase access for non-aboriginal hunters into the region, thus increasing competition for, and pressure on, bird and wildlife populations (p. 124)
- The proponent did not find any significant impacts to wildlife at the scale presented in their original Application; however, the BC EAO required further detail in order to assess the potential impacts at a scale of particular relevance to the exercise of Tsilhqot'in hunting and trapping rights.
- In response, the proponent submitted a more detailed supplemental report, titled *Local and Regional Environmental Effects on Wildlife and Vegetation Resources of Importance to the Tsilhqot'in National Government at the Proposed Mine Site*.
- The results of the report compliment the findings in the original application and highlight that the proposed mine site represents only small portion of the relevant biogeoclimatic zones in the Claim Area.

**BC EAO's Conclusions:**

- The BC EAO does not anticipate that the Project would have a significant adverse impact on the Aboriginal right to hunt and trap. The BC EAO is also of the opinion that any potential interference with the right is justifiable given that:
  - the right would still be meaningful notwithstanding the loss of the Project area and the impact of the Project;
  - consultation and accommodation is perceived to be meaningful to date; and
  - the Project is of great regional and provincial importance (p.126)

**Gathering Plants (p. 126-127)**

**Context:**

- The TNG requested that the effects of the Project be assessed on 52 plant species of importance to the members of the Tsilhqot'in Nation.
- The proponent developed a matrix to compare linkages between vegetation indicators assessed in the Application and the plant species of importance to the TNG. Having successfully established linkages between each of the identified plant species and the vegetation indicators, the proponent found no significant residual effects.
- The proponent also applied the methods used in its supplemental report (described in the previous column) to understand effects on vegetation. As above, the proponent found that less than three percent of the relevant area available in the Claim Area would be potentially impacted by the Project.

**BC EAO's Conclusions:**

- Given the above information, the BC EAO anticipated that the Project is not likely to have a significant adverse impact on vegetation or on the activity of gathering plants (p. 127).

**Harvesting Timber (p. 127)**

- The proponent has proposed to use current cut blocks and logging roads to guide the selection of the right-of-way.
- As the proponent has proposed to maximize the use of existing disturbances and minimizes the need to construct new access or cut timber, the BC EAO is of the opinion that the removal of timber as part of the Project would not result in any significant impact on timber harvesting activities.

**Aboriginal Title (p. 127-128)**

- In the *William* decision the court declined to find that Tsilhqot'in people have Aboriginal title to any portion of the "Eastern Trapline Territory", which is in the very area of the Project.
- The BC EAO understands that Tsilhqot'in people claim Aboriginal title to much of the area outside of the Eastern Trapline Territory that would be utilized as part of the Project.

- The BC EAO is of the opinion that it is unlikely that the construction and operation of the transmission line will adversely impact Tsilhqot'in Nation Aboriginal title were aboriginal title to be proven in the future.
- The BC EAO understands that the Fish Lake area is important to Tsilhqot'in people; however, on the basis of limited information and evidence with regard to this subject, the BC EAO was not able to conclude that there is a *prima facie* case in support of such an Aboriginal right, were it to be asserted.

**Source:** BC EAO, 2009 p.123-128

**Table D.21: Specific Facts Set Out by the BC EAO to Assist the Ministers in Deciding Whether or Not to Issue an EA Certificate in Circumstances Where a Significant Adverse Effect is Found.**

Relevant Factor	BC EAO Conclusions
<b>Significant Adverse Effects</b>	<ul style="list-style-type: none"> <li>The Project would have a one-time and permanent significant adverse effect on fish and fish habitat through the loss of Fish Lake and Little Fish Lake.</li> </ul>
<b>Value of Fish Habitat Compensation</b>	<ul style="list-style-type: none"> <li>The proponent comprehensively addresses the loss of Fish Lake and related habitat through a proposed <i>Fisheries Compensation Plan</i>.</li> <li>The plan includes a hatchery to maintain genetic integrity, outplanting to lakes in the region, and the creation of a new lake and spawning channels.</li> <li>The MOE supports the proposed compensation plan and has indicated that it will address their relevant policy goals.</li> <li>The BC EAO notes that the compensation plan does not completely negate the Project's significant adverse effect of fish and fish habitat; however, BC EAO is of the belief that the comprehensiveness of the plan should be considered in assessing whether the Project is justifiable.</li> </ul>
<b>Economic Benefits</b>	<ul style="list-style-type: none"> <li>The Project would contribute to approximately 375 person years of employment during construction and operations.</li> <li>The Project would provide high-paying jobs, averaging over \$90,000 per year plus benefits.</li> <li>The Project's annual payroll is projected to be \$32 million, with \$29 million paid locally.</li> <li>Total average annual government revenue from the Project is expected to be \$74 million.</li> <li>The Project is estimated to generate approximately \$340 million in GDP annually.</li> <li>The Project would lead to indirect employment and income increases as a result of the procurement of goods and services from local and regional suppliers.</li> </ul>
<b>Contribution to Community Development</b>	<ul style="list-style-type: none"> <li>The Project would benefit a region that has above average unemployment compared to the rest of the province.</li> <li>The Project would help diversify the region's economic base and create demand for new housing units, improved infrastructure and associated construction opportunities.</li> <li>The Project is strongly supported by the Cariboo Regional District and the City of Williams Lake.</li> </ul>
<b>Allocation of Costs and Benefits</b>	<ul style="list-style-type: none"> <li>Costs of the Project include the loss of Fish Lake and Little Fish Lake, which would be borne by present and future generations.</li> <li>The loss of Fish Lake and Little Fish Lake would be offset by the compensatory values of a viable Prosperity Lake.</li> <li>Benefits of the Project include the economic and social benefits that are related to employment, contracting opportunities, government financing, and community development.</li> </ul>
<b>Consideration of Alternatives</b>	<ul style="list-style-type: none"> <li>With regard to financial considerations, alternative mine options 1 and 2 were "fatally flawed" as they resulted in projects of excessive economic risk.</li> <li>With regard to environmental considerations, alternative mine options 1 and 2 presented a significant degree of environmental risk as well.</li> </ul>

Source: BC EAO, 2009 p. 144-146

## Appendix E: Chapter 6 Supplemental Material

Table E.1: Responsible Authorities in the Federal EA

Responsible Authority	Permit, Approval or Authorization Requirements	Contribution to the Federal EA Process
<b>Fisheries and Oceans Canada</b>	<ul style="list-style-type: none"> <li>An authorization under section 32 of the <i>Fisheries Act</i> (1985) to permit the destruction of fish by means other than fishing;</li> <li>An authorization under section 35(2) of the <i>Fisheries Act</i> (1985) to harmfully alter, disrupt or destroy fish habitat; and</li> <li>Listing on Schedule 2 of the <i>Metal Mining Effluent Regulations</i> under the <i>Fisheries Act</i> (1985).</li> </ul>	<ul style="list-style-type: none"> <li>Provided written comments to the Panel on its review of the EIS and the proponent's responses to information requests;</li> <li>Participated in the early stages of the provincial EA process;</li> <li>Provided a written submission for the public hearing; and</li> <li>Presented at both the general and topic-specific hearing sessions on the subject of fish and fish habitat.</li> </ul>
<b>Transport Canada</b>	<ul style="list-style-type: none"> <li>Approvals under section 5(2) and section 5(3) of the <i>Navigable Waters Protection Act</i> (1985).</li> </ul>	<ul style="list-style-type: none"> <li>Provided written comments to the Panel on its review of the EIS, the proponent's responses to information requests, and the potential cumulative effects of the possible mine life extension;</li> <li>Provided written submissions for the public hearing; and</li> <li>Presented at both the general hearing session and the topic-specific hearing session on the subject of navigable waters.</li> </ul>
<b>Natural Resources Canada</b>	<ul style="list-style-type: none"> <li>A license under paragraph 7(1)(a) of the <i>Explosives Act</i> (1985) for the storage of explosives and the mixing facility.</li> </ul>	<ul style="list-style-type: none"> <li>Provided written comments to the Panel on its review of the EIS, the proponent's responses to information requests, and the potential cumulative effects of the possible mine life extension;</li> <li>Participated in the early stages of the provincial EA process;</li> <li>Provided written submissions for the public hearing; and</li> <li>Presented at both the general hearing session and the topic-specific hearing session on the subject of geology and geochemistry, hydrology, and earthquakes and seismic hazards.</li> </ul>

Source: CEAA, 2010 p.20-21

**Table E.2: The Panel’s Criteria for Determining Likely Significant Adverse Environmental Effects**

Is the potential effect adverse?	Is the potential adverse effect significant?	Is the potential significant adverse effect likely?
<p>The Panel compared the existing state of the environment with the predicted state of the environment, if the Project was in place.</p>	<p>The Panel used the following criteria:</p>	<p>The Panel used the following criteria:</p>
	<ul style="list-style-type: none"> <li>• <b>Magnitude</b> - the severity or magnitude of the effects;</li> <li>• <b>Geographic extent</b> – the extent of change over the geographic area of the Project and whether the effects are local or regional;</li> <li>• <b>Duration and frequency</b> – the length of time the effect lasts, how often the effect occurs and whether the effects are long term or temporary;</li> <li>• <b>Reversibility</b> – the degree to which the effects are reversible;</li> <li>• <b>Context</b> – the ability of the environment to accept change and whether the location has been previously affected or is ecologically fragile;</li> <li>• <b>Probability</b> – the likelihood that an effect would occur in circumstances where it is not certain that the effect would materialize; and</li> <li>• <b>Dose/Exposure</b> - would the dose or exposure result in an unacceptable level of risk.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Probability of occurrence</b> - If there is a high probability that the identified significant adverse effect would occur, then it is likely, and</li> <li>• <b>Scientific uncertainty</b> - Involves determining confidence levels based on statistical methods or best professional judgment.</li> </ul>

**Source:** CEAA, 2010. The Panel's criteria are derived from CEAA's reference guide entitled *Determining Whether a Project is Likely to Cause Significant Adverse Environmental Effects* (1994).

**Table E.3: First Nations Participation in the Federal EA**

First Nation	Contribution to the Federal EA Process
<b><i>Tsilhqot'in National Government and Alkali Lake Band</i></b>	<ul style="list-style-type: none"> <li>• Provided comments to the Panel at various stages in the review of the EIS;</li> <li>• Review of the draft <i>Terms of Reference</i> for the Panel;</li> <li>• Reviewed the draft EIS Guidelines;</li> <li>• Review information regarding the possible cumulative effects of an extended mine life scenario; and</li> <li>• Actively participated in all three types of public hearing sessions.</li> </ul>
<b><i>Canoe Creek Band</i></b>	<ul style="list-style-type: none"> <li>• Participated in the early stages of the EA process prior to the appointment of the Panel;</li> <li>• Provided input into the development of the Panel's <i>Terms of Reference</i> and the EIS Guidelines;</li> <li>• Participated in process information sessions and in the development of an approach to gathering information on the current use of lands and resources for traditional purposes;</li> <li>• Participated in the community hearing sessions of the public hearing; and</li> <li>• Participated in the review of the Tsilhqot'in Nation's request for confidentiality.</li> </ul>
<b><i>Williams Lake Band</i></b>	<ul style="list-style-type: none"> <li>• Participated in the development of an approach to gathering information on the current use of lands and resources for traditional purposes;</li> <li>• Provided written submissions for public hearings; and</li> <li>• Participated in the review of the Tsilhqot'in Nation's request for confidentiality.</li> </ul>
<b><i>Canim Lake Band</i></b>	<ul style="list-style-type: none"> <li>• Present during the general hearing session in 100 Mile House and performed a drumming ceremony to start the session; and</li> <li>• Participated in the review of the Tsilhqot'in Nation's request for confidentiality.</li> </ul>
<b><i>Soda Creek Band</i></b>	<ul style="list-style-type: none"> <li>• Participated during the community hearing sessions with the Canoe Creek and Esketemc Alkali Lake Bands; and</li> <li>• Participated in the review of the Tsilhqot'in Nation's request for confidentiality.</li> </ul>
<b><i>Ulkatcho First Nation</i></b>	<ul style="list-style-type: none"> <li>• Participated during the community hearing session with the Redstone Band.</li> </ul>

Source: CEAA, 2010 p.22-23

**Table E.4: Steps of the Federal EA Process**

Part 1: Background	
Date	EA Review Process Step
<i>July 10, 1997</i>	<ul style="list-style-type: none"> <li>An EA under the <i>CEA Act</i> (1992) commences, with DFO acting as the RA.</li> </ul>
<i>2000</i>	<ul style="list-style-type: none"> <li>Taseko puts the Project on hold due to weak metal prices and a poor price performance outlook</li> </ul>
<i>2006</i>	<ul style="list-style-type: none"> <li>Taseko re-activates the federal EA process, with DFO, TC and NRCan acting as RAs.</li> </ul>
<i>February 19, 2007</i>	<ul style="list-style-type: none"> <li>The RAs concluded that the Project has the potential to cause significant adverse environmental effects that could not be readily mitigated.</li> <li>The RAs also conclude and that there are important public and First Nations resource use issues.</li> <li>The RAs refer the Project to the Minister of the Environment for referral to a review panel as per subsection 21(2)(b) of the <i>CEA Act</i> (1992).</li> </ul>
<i>October 2008</i>	<ul style="list-style-type: none"> <li>The CEEA issues a draft <i>Terms of Reference</i> for establishing a federal review panel for the Project.</li> <li>The CEAA and the BC EAO released joint draft EIS guidelines for the Project.</li> </ul>
<i>January 2010</i>	<ul style="list-style-type: none"> <li>Canada's Minister of the Environment and the BC EAO jointly issue finalized EIS guidelines to Taseko.</li> </ul>
<i>January 19, 2010</i>	<ul style="list-style-type: none"> <li>Canada's Minister of the Environment refers the Project to the federal review panel.</li> </ul>

Part2: The Panel's Review of the Proponent's EIS	
Date	EA Review Process Step
<i>January 26, 2009</i>	<ul style="list-style-type: none"> <li>Taseko submitted its draft EIS for screening to the BC EAO.</li> </ul>
<i>March 16, 2009</i>	<ul style="list-style-type: none"> <li>Taseko submitted its final EIS to the Panel and the BC EAO.</li> </ul>
<i>March 25 to May 25, 2009</i>	<ul style="list-style-type: none"> <li>A joint 60-day public comment period was established to review the EIS and comments were received from federal and provincial governments, First Nations, non- governmental organizations and the public. This public comment period included open houses hosted by the BC EAO, which were attended by the Panel Secretariat.</li> </ul>
<i>June 24, 2009</i>	<ul style="list-style-type: none"> <li>The Panel issued a deficiency statement and requested further information from Taseko in 10 areas.</li> </ul>
<i>July 2 to October 2, 2009</i>	<ul style="list-style-type: none"> <li>Following its review of comments received on the EIS, the BC EAO suspended its review, pending receipt of further information from Taseko.</li> </ul>

<i>July 14 to September 25, 2009</i>	<ul style="list-style-type: none"> <li>The Panel Secretariat held discussions with First Nations on the most appropriate means to obtain information on the current use of land and resources for traditional purposes by First Nations and on their cultural heritage.</li> </ul>
<i>August 3, 2009</i>	<ul style="list-style-type: none"> <li>Taseko provided responses to all information requests from the Panel, with the exception of information requests relating to the mine waste management alternatives assessment and future mine expansion scenarios.</li> </ul>
<i>August 12, 2009</i>	<ul style="list-style-type: none"> <li>After reviewing Taseko's responses to its information requests, the Panel wrote to Taseko requesting clarification on responses to 3 of the information requests.</li> </ul>
<i>August 14, 2009</i>	<ul style="list-style-type: none"> <li>Taseko responded to the Panel's requests for clarification with supplemental material.</li> </ul>
<i>August 19 to September 18 2009</i>	<ul style="list-style-type: none"> <li>The Panel invited comment on Taseko's response to the information requests and comments were received from federal and provincial governments, First Nations, non- governmental organizations and the public.</li> </ul>
<i>October 6, 2009</i>	<ul style="list-style-type: none"> <li>The Panel issued a deficiency statement to Taseko, including a second set of information requests. The Panel also requested that First Nations submit information on the current use of lands and resources for traditional purposes and cultural heritage by November 17, 2009. In making this request of First Nations, the Panel indicated that the public hearing would allow First Nations to supplement this information through oral presentations.</li> </ul>
<i>October 9, 2009</i>	<ul style="list-style-type: none"> <li>Taseko submitted its response to the hydrology questions included in the second set of information requests.</li> </ul>
<i>October 16, 2009</i>	<ul style="list-style-type: none"> <li>The Panel requested clarification on Taseko's response to the hydrology questions included in the second set of information requests.</li> </ul>
<i>October 21, 2009</i>	<ul style="list-style-type: none"> <li>Taseko submitted its response to the questions of clarification raised by the Panel regarding the hydrology questions included in the second set of information requests.</li> </ul>
<i>October 26 to November 8, 2009</i>	<ul style="list-style-type: none"> <li>The Panel invited comments on Taseko's response to the hydrology questions raised in the second set of information requests.</li> </ul>
<i>November 2, 2009</i>	<ul style="list-style-type: none"> <li>Taseko announced an increase in the gold and copper reserves at the Project and indicated that this could extend the mine life from 20 years to 33 years.</li> </ul>
<i>November 5 to November 16, 2009</i>	<ul style="list-style-type: none"> <li>The BC EAO suspended its review, pending clarification from Taseko on the implication of the increased mineral reserves at the Project area.</li> </ul>
<i>November 10 to November 30, 2009</i>	<ul style="list-style-type: none"> <li>The Panel sought clarification from Taseko about the increased mineral reserves at the Project area and requested that Taseko provide additional information on the potential cumulative effects of the Project in combination with a potential 13-year mine life expansion.</li> </ul>
<i>December 4, 2009</i>	<ul style="list-style-type: none"> <li>Taseko raised concerns regarding a potential apprehension of bias on the part of Panel member Morin.</li> </ul>
<i>December 9 to January 12, 2010</i>	<ul style="list-style-type: none"> <li>The Panel suspended its review pending the outcome of its investigation of Taseko's allegation of reasonable apprehension of bias.</li> </ul>
<i>December 10, 2009</i>	<ul style="list-style-type: none"> <li>Taseko submitted a report in response to the Panel's second set of information requests providing its assessment of information provided by First Nations on the current use of lands and resources for traditional purposes.</li> </ul>
<i>December 12 to January 2, 2010</i>	<ul style="list-style-type: none"> <li>The Panel invited comments on Taseko's response to the information request regarding the current use of lands and resources for</li> </ul>

	traditional purposes by First Nations.
<i>December 17, 2009</i>	<ul style="list-style-type: none"> <li>The BC EAO completed its review in accordance with its 180 day timeline.</li> </ul>
<i>January 14, 2010</i>	<ul style="list-style-type: none"> <li>BC EAO's recommendations were accepted by the provincial Ministers of the Environment and Energy, Mines and Petroleum Resources and an EA certificate was issued.</li> </ul>
<i>January 18, 2010</i>	<ul style="list-style-type: none"> <li>Taseko responded to the Panel's request for information regarding the possible cumulative effects of the potential extension of the mine life as a result of the increased mineral reserves.</li> </ul>
<i>January 20-29, 2010</i>	<ul style="list-style-type: none"> <li>The Panel invited comment on Taseko's response to its questions regarding the possible cumulative effects of the potential extension of the mine life as a result of the increased mineral reserves.</li> </ul>
<i>February 2, 2010</i>	<ul style="list-style-type: none"> <li>The Panel announced that the EIS, supplemented with the additional information submitted by Taseko, was sufficient to proceed to the public hearing.</li> </ul>
<i>March 22 to May 3, 2010</i>	<ul style="list-style-type: none"> <li>The Panel held public hearing sessions in the Cariboo- Chilcotin area.</li> </ul>
<i>July 2, 2010</i>	<ul style="list-style-type: none"> <li>The Panel submitted its report containing its conclusions and recommendations with respect to the Project to the Ministers of Environment, DFO, TC, and NRCan.</li> </ul>

Source: CEAA, 2010

**Table E.5: The Panel's Assessment of Relevant Facts Affecting Surface Water**

<b>Surface Water Issues</b>	<b>Relevant Facts Considered</b>
<b><i>Annual Water Balance</i></b>	<ul style="list-style-type: none"> <li>• The Project would result in a 65% reduction in the annual flow volumes in lower Fish Creek during operations;</li> <li>• The lower Fish Creek watershed area contributing to the Taseko River would be reduced by approximately 0.5% during operations and restored to approximately 104% at closure;</li> <li>• During operations, flow from Prosperity Lake to Wasp Lake and into Beece Creek would increase by approximately 4% and decrease by 0.4% at closure; and</li> <li>• Many of the effects to surface water hydrology would be reversible in the post- closure period.</li> </ul>
<b><i>Receiving Water Quality and Treatment Methods</i></b>	<ul style="list-style-type: none"> <li>• The Project would be designed such that there would be no planned discharge of water from the mine site to the receiving environment until Year 44;</li> <li>• While water treatment was viewed as a contingency by Taseko, it confirmed that, if treatment was required for 100 years, the Project would still be economically feasible; and</li> <li>• Similar mines in BC have required ongoing water treatment to meet regulatory requirements.</li> </ul>
<b><i>The Effects on Fish Health</i></b>	<ul style="list-style-type: none"> <li>• The proponent indicated that metal levels in fish tissue in Taseko River would remain below applicable guidelines; however, First Nations indicated they may not eat salmon from the area due to the perception of contamination.</li> </ul>
<b><i>The Role of ARD and ML in Developing the Water Quality Model</i></b>	<ul style="list-style-type: none"> <li>• There was uncertainty regarding the quantity of potentially acid generating waste rock and also the predicted acid generation that would result;</li> <li>• There was uncertainty regarding the characterization of leachable metals; and</li> <li>• There was uncertainty regarding the likelihood of the need for active water treatment in the post-closure period.</li> </ul>

Source: CEAA 2010 p. 67-68

**Table E.6: The Panel's assessment of relevant facts affecting groundwater.**

<b>Groundwater Issues</b>	<b>Relevant Facts Considered</b>
<b><i>Changes to Groundwater Flow</i></b>	<ul style="list-style-type: none"> <li>• During operation, the groundwater elevation in the vicinity of the open pit would be lowered by 500 m and the groundwater divide between Fish Creek and Taseko River would shift 200 m closer to the River; this would be reversed in Year 44 when the pit would be filled; and</li> <li>• The groundwater divide between the Fish Creek and Big Onion Lake watersheds would be permanently lost as a result of the construction of the TSF.</li> </ul>
<b><i>Effects of Seepage on the West Embankment of the TSF</i></b>	<ul style="list-style-type: none"> <li>• Seepage through the main embankment of the TSF would flow towards the water collection pond and then the open pit and be treated if necessary prior to discharge to the environment;</li> <li>• Seepage from the TSF would flow towards Big Onion Lake and was predicted by the proponent to reach the lake in approximately Year</li> </ul>

	<p>50;</p> <ul style="list-style-type: none"> <li>• Big Onion Lake, which discharges into the Taseko River, was reported to be an important fishing lake for First Nations and recreational fishers;</li> <li>• There were uncertainties associated with the concentration of contaminants that would be contained in the seepage to Big Onion Lake, and the level to which water quality, rainbow trout, and other aquatic organisms in the lake would be affected;</li> <li>• No means of improving the quality of water seeping towards Big Onion Lake was proposed. Mitigation measures included minimizing seepage and intercepting it and returning it to the TSF; and</li> <li>• There was uncertainty regarding the feasibility of using interception wells to intercept and pump the seepage back to the TSF.</li> </ul>
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Source: CEAA 2010 p. 76

**Table E.7: The Panel’s assessment of relevant facts affecting fish and fish habitat.**

Fish and Fish Habitat Issues	Relevant Facts Considered
<i>The Permanent Alteration and Loss of Fish and Fish Habitat in the Fish Creek Watershed</i>	<ul style="list-style-type: none"> <li>• The Fish Creek watershed including Fish Lake, Little Fish Lake, and the surrounding aquatic ecosystems support a monoculture rainbow trout population of 165, 000 fish;</li> <li>• Other than the 12,000 fish that would be salvaged, approximately 90,000 rainbow trout from Fish Lake and Little Fish Lake would be lost. Additionally, the fish and fish habitat in these lakes and in middle and lower Fish Creek would also be lost; and</li> <li>• Fish Lake was reported to be an important First Nation food fishery when salmon stocks were low.</li> </ul>
<i>Effect on Recreational and Sport Fishing Opportunities</i>	<ul style="list-style-type: none"> <li>• Fish Lake was stated to be a valued recreational fishery due to the relative ease of catching fish and the pristine surrounding.</li> </ul>
<i>The Proposed Fish and Fish Habitat Compensation Plan</i>	<ul style="list-style-type: none"> <li>• The proponent has proposed a fish and fish habitat compensation plan to replace what would be destroyed by the Project in the Fish Creek watershed;</li> <li>• The proposed plan included the creation of new spawning and rearing channels, a new replacement lake and the use of both the TSF and Pit Lake during the post-closure period as additional areas to support fish populations; and</li> <li>• Substantial risks and concerns were raised by participants with respect to the fish and fish habitat compensation plan, including: <ul style="list-style-type: none"> <li>○ The failure to meet DFO’s “no net loss” policy;</li> <li>○ Uncertainty regarding whether the proposed spawning channel would function without regular maintenance and therefore whether it would be viable in the long term;</li> <li>○ The loss of primary productivity as a result of the conversion of existing creek and stream habitat to a shorter engineered channel;</li> <li>○ The lack of outlet spawning habitat in Prosperity Lake;</li> <li>○ The potential that the proponent may have underestimated Fish Lake’s productivity and overestimated the productivity</li> </ul> </li> </ul>

	<p>of the proposed Prosperity Lake;</p> <ul style="list-style-type: none"> <li>○ Uncertainty regarding whether Prosperity Lake would support enough individual rainbow trout to reach the target population;</li> <li>○ Irreversible changes would be made to Fish Lake, Little Fish Lake, and Fish Creek before success of the proposed plan has been demonstrated;</li> <li>○ Uncertainty regarding whether aquatic vegetation could be established in a relatively short time frame;</li> <li>○ The warmer temperature profile of the headwater retention pond may affect the survival of fish in the spawning and rearing channel; Uncertainty regarding whether productive populations of rainbow trout could be established in the headwater diversion channel in the absence of spawning channels;</li> <li>○ Local fishing opportunities may not be replaced; and</li> <li>○ Uncertainty regarding the suitability of water quality in the TSF and Pit Lake to support fish populations in the post-closure period.</li> </ul>
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Source: CEAA 2010 p. 95-96

**Table E.8: The Panel’s Assessment of Relevant Facts Affecting Terrain and Soil**

Terrain and Soil Issues	Relevant Facts Considered
<b><i>Terrain Instability</i></b>	<ul style="list-style-type: none"> <li>• Within the local study area of the mine, the majority of the terrain was reported to be of low gradient and relatively stable, and the likelihood of mass wasting was considered low;</li> <li>• Along the transmission line, there would be some slopes that would require further consideration due to steep gradients;</li> <li>• The environmental management plans and monitoring set out in the EIS addressed the issue of geotechnical stability; and</li> <li>• The Canoe Creek Band expressed concerns regarding terrain and soil instability, erosion and sedimentation.</li> </ul>
<b><i>Other Related Effects and Issues</i></b>	<ul style="list-style-type: none"> <li>• Changes to terrain and soil resources within the immediate area of the mine site would occur as a result of the Project;</li> <li>• The Canoe Creek Band indicated that the baseline terrain and soil inventory carried out by Taseko to support its effects assessment was inadequate and suggested that 1:10,000 or 1:5,000 scale mapping would be necessary to adequately assess effects; and</li> <li>• The Canoe Creek Band recommended that a soil erosion and sedimentation plan for the transmission line corridor be established to ensure mitigation of effects in locations such as the Fraser River crossing and other sensitive terrain/ecosystems along the transmission line corridor and access roads.</li> </ul>

Source: CEAA 2010 p. 9

**Table E.9: The Panel’s Assessment of Relevant Facts Affecting Vegetation**

Vegetation Issues	Relevant Facts Considered
<b>Old Growth Forest</b>	<ul style="list-style-type: none"> <li>• The Project would affect 1,465 ha of old growth forest at the mine site, and 171 ha along the transmission line. Approximately 80% of old growth forest affected would be lodgepole pine;</li> <li>• Considering the effects of the mountain pine beetle infestation on pine-leading old growth forests, the Project would contribute to the loss of approximately 226 ha of old growth forest at the mine site (4% in the regional study area) and 40 ha along the transmission line (0.9% of the transmission line regional study area); and,</li> <li>• The proponent proposed to mitigate the effects on old growth forest by avoiding destruction where possible, reforesting the reclaimed mine site and transmission line corridor and working with the Province to control spruce bark beetle populations.</li> </ul>
<b>Grassland Ecosystems</b>	<ul style="list-style-type: none"> <li>• Grasslands were reported to be relatively sensitive to disturbance, have high potential for rare plant occurrence, and to be uncommon in British Columbia, but relatively common along the proposed transmission line corridor;</li> <li>• While the transmission line and the mine site would overlap with approximately 88 ha and 7.5 ha of grassland ecosystem, respectively, less than 1% of the baseline area would be lost;</li> <li>• Concerns were raised about the spread of invasive plants and the potential use of herbicides to control their spread; and</li> <li>• Grasslands closest to the Fraser River were reported to have already been affected by cattle grazing and forest harvesting activities.</li> </ul>

Source: CEAA 2010 p. 103

**Table E.10: The Panel’s Assessment of Relevant Facts Affecting Wildlife and Wildlife Habitat**

Wildlife and Wildlife Habitat Issues	Relevant Facts Considered
<b>Grizzly Bears</b>	<ul style="list-style-type: none"> <li>• The mine site, the southern portion of the Taseko Lake / Whitewater Road and the western part of the transmission line would lie within the South Chilcotin Ranges Grizzly Bear Population Unit, which was reported to be threatened and consisted of a population of only approximately 100 bears;</li> <li>• The Project would result in the reduction in the availability of seasonal feeding habitats for grizzly bears ranging from 423 ha to 3,851 ha at the mine site and a potential long-term reduction of 264 ha along the transmission corridor;</li> <li>• Increased access to the area would be likely to increase the risk of bear mortality from vehicle collisions, poaching, and other human-bear interaction;</li> <li>• The proponent’s proposed measures to mitigate the effects of the Project on grizzly bears included strict enforcement of speed limits and a policy of using a non-lethal approach to resolving any incidents involving bears;</li> <li>• There were differing opinions expressed regarding the effects of the loss of grizzly bear habitat at the mine site, and the effects of the</li> </ul>

	<p>access road and transmission corridor on bear mortality risks; The BC MOE was concerned during the review of the EIS that the grizzly bear population was threatened and could not sustain additional human induced mortality; and</p> <ul style="list-style-type: none"> <li>• The BC EAO was satisfied with the proponent's proposed grizzly bear investigation program to record vehicle-caused mortality and near misses and reached a conclusion that the Project would not be likely to result in a significant adverse effect on wildlife;</li> </ul>
<b><i>Mule Deer Migration and Ungulate Winter Habitat</i></b>	<ul style="list-style-type: none"> <li>• The Project would result in the removal of approximately 970 ha of winter shelter habitat and 26 ha of winter feeding habitat for mule deer at the mine site and approximately 264 ha of winter habitat along the transmission line;</li> <li>• The Project would result in the loss of approximately 1,680 ha and 189 ha of winter shelter and winter feeding habitat for moose, respectively, at the mine site, and 264 ha of winter habitat along the transmission line corridor;</li> <li>• Of the potentially affected habitat along the transmission line, approximately 239 ha would occur within designated Ungulate Winter Ranges, representing 0.8% of the area designated as mule deer Ungulate Winter Ranges;</li> <li>• There were different views on the mule deer migration patterns in the area of the mine site. First Nations stated that the mine site was part of an important migration corridor, while the proponent argued that the migration corridor was outside the mine disturbance area;</li> <li>• The proposed mitigation measures to reduce effects on mule deer and moose along the transmission corridor included minimizing right-of-way clearing and avoidance of construction in winter in the mule deer Ungulate Winter Ranges; and</li> <li>• The proponent would also implement an access management plan along the transmission corridor to reduce effects on wildlife from hunting, poaching and other human-wildlife interactions;</li> </ul>
<b><i>Increased Accessibility to Land</i></b>	<ul style="list-style-type: none"> <li>• According to the Alkali Lake Band and the Canoe Creek Band, the existing BC Hydro transmission line had a significant effect on wildlife as a result of increased human access to the area and expressed skepticism about the proponents plans to decommission the proposed transmission line at mine closure given their experience with expansion of the BC Hydro transmission line</li> </ul>
<b><i>The Wildlife Habitat Compensation Plan</i></b>	<ul style="list-style-type: none"> <li>• Through the provincial EA Certificate, the proponent committed to develop and implement a plan for compensation for adverse effects to wildlife habitat provided there was a technically defensible confirmation that there was an adverse effect;</li> <li>• There was disagreement between the proponent and Environment Canada on the significance of the loss of wetlands and riparian habitat at the proposed mine site. The proponent concluded that the effects would not be significant, while Environment Canada noted that effects would be measurable and long term.</li> </ul>

Source: CEAA 2010 p. 114-115

**Table E.11: The Panel’s Assessment of Relevant Facts Affecting the Atmospheric Environment**

Atmospheric Environment Issues	Relevant Facts Considered
<b>Criteria Air Contaminants</b>	<ul style="list-style-type: none"> <li>Maximum ground-level concentrations of particulate matter, PM2.5, PM10, total suspended particulates, and dust fall were predicted to be within the applicable standards and objectives for identified receptors with the exception of the work camp area.</li> </ul>
<b>Greenhouse Gases</b>	<ul style="list-style-type: none"> <li>Greenhouse gas emissions were predicted to be 0.074% and 0.067% of the combined emissions from BC and the northern territories during construction and operations, respectively.</li> </ul>
<b>Light Pollution</b>	<ul style="list-style-type: none"> <li>The closest residence to the mine site would be Taseko Lake Lodge (3 km) and the closest community would be the Nemiah Band (25 km)</li> </ul>

Source: CEAA 2010 p. 120

**Table E.12: The Panel’s Assessment of Relevant Facts Affecting Project-Related Noise**

Noise Issues	Relevant Facts Considered
<b>Noise Effects on Human and Wildlife Receptors</b>	<ul style="list-style-type: none"> <li>The primary source of noise at the mine site would be from mining operations which would operate continuously for 20 years and from blasting which would occur intermittently;</li> <li>Increased traffic would also increase noise levels along the roads;</li> <li>Noise levels were not predicted to exceed existing guidelines; and</li> <li>The closest residence was reported to be Taseko Lake Lodge, approximately 3 km from the TSF and the closest community was the Nemiah Band approximately 25 km from the mine site.</li> </ul>

Source: CEAA 2010 p. 123

**Table E.13: The Panel’s Assessment of Relevant Facts Affecting Archeology**

Archeology Issues	Relevant Facts Considered
<b>Tangible Aspects of Archeology</b>	<ul style="list-style-type: none"> <li>The proponent conducted an extensive archaeological impact assessment of the mine site; although the survey was developed in collaboration with the Tsilhqot’in, the final stages of the assessment, including the assessment and discussion of the final report, were not completed collaboratively between the two parties;</li> <li>During the public hearing, the Tsilhqot’in identified additional sites of archaeological importance that they indicated were not identified by the survey (e.g. a pit house on the island in Fish Lake);</li> <li>Concern was expressed by the Tsilhqot’in that sites of importance dating from post- 1846 were not protected under the provincial <i>Heritage Conservation Act</i>;</li> </ul>

	<ul style="list-style-type: none"> <li>Concerns were expressed by the Tsilhqot'in that the practice of excavation and storage of artifacts at a different location as a mitigation measure did not account for the cultural values the Tsilhqot'in attributed to the artifacts, and severed the spiritual connection they had with the location of the find;</li> <li>The Tsilhqot'in also expressed concerns with the classification of artifacts, noting that due to the importance of artifacts in defining their cultural identity and connection to the land, a weighting system should not be applied;</li> <li>The Secwepemc noted that the area of the proposed transmission line had high archaeological potential, and expressed concerns regarding the absence of an archaeological impact assessment for the transmission line right-of-way as a component of the EA;</li> <li>The proponent committed to undertake a comprehensive archaeological survey along the transmission line as part of the information it would use to locate the centerline within the right-of-way.</li> </ul>
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Source: CEAA 2010 p. 127

**Table E.14: The Panel's assessment of relevant facts affecting cumulative effects.**

<b>Cumulative Effects Issues</b>	<b>Relevant Facts Considered</b>
<b><i>Vegetation</i></b>	<ul style="list-style-type: none"> <li>The proponent estimated that the Project would result in a reduction of non-pine old growth forest of 0.36%;</li> <li>There would be little potential for the loss of wetlands, riparian areas and grasslands from other existing or reasonably foreseeable future projects in the area; and</li> <li>Previous forestry activities had reduced the area available for the gathering of plants by First Nations and had reduced wildlife habitat.</li> </ul>
<b><i>Mule Deer and Moose</i></b>	<ul style="list-style-type: none"> <li>Mule deer and moose populations were considered to be sustainable by the Province but concerns existed about the loss of winter habitat due to past, present and reasonably foreseeable future forest harvesting associated with the mountain pine beetle infestation.</li> </ul>
<b><i>Grizzly Bears</i></b>	<ul style="list-style-type: none"> <li>The sustainability of the grizzly bear population in the South Chilcotin region is reported to be threatened.</li> </ul>
<b><i>Surface Water Groundwater</i></b>	<ul style="list-style-type: none"> <li>A future mine life extension could involve increasing the height of the embankments by 36 m for the TSF and possibly Prosperity Lake, and increasing the size of the open pit and the non-acid generating waste rock storage areas.</li> <li>A future mine life extension could affect surface and groundwater by modifying the site water balance, increasing seepage rates from the TSF and increasing the rate of seepage flow into Big Onion Lake; and</li> <li>The proponent would have the benefit of 20 years of monitoring data to assist it with accurately assessing the potential effects of a future mine life extension on surface and groundwater.</li> </ul>
<b><i>Fish and Fish Habitat Compensation</i></b>	<ul style="list-style-type: none"> <li>A future mine life extension could affect the fish and fish habitat compensation works;</li> <li>Water quality in Prosperity Lake could be negatively affected, which could affect the survival, productivity and palatability of rainbow trout within the lake; and</li> <li>The riparian habitat that would be established along the perimeter of Prosperity Lake could also be negatively affected by increasing the size of the lake.</li> </ul>

Source: CEAA 2010 p. 138-139

**Table E.15: The Panel's assessment of relevant facts affecting land and resource uses.**

Land and Resource Use Issues	Relevant Facts Considered
<b>Forestry</b>	<ul style="list-style-type: none"> <li>• Harvesting of trees for the Project would result in a 0.6% reduction of the designated "no-harvest" zone and a 1.5% reduction of the "extended-harvest" zone in the Project footprint;</li> <li>• Lands used by the Project would not be available for forest regeneration during operations;</li> <li>• The Project would affect the reforestation of tracts of recently harvested forest and those planned to be harvested; and</li> <li>• The transmission line would remove approximately 34 ha of the Esketemc Community Forest;</li> </ul>
<b>Agriculture and Ranching</b>	<ul style="list-style-type: none"> <li>• Ranchers who used forage areas within the proposed mine site for their livestock and horses would have to find other forage areas;</li> <li>• Mitigation along the transmission line would involve seeding along the right-of-way; and</li> <li>• There would be a loss of some natural barriers to cattle along the transmission line;</li> </ul>
<b>Hunting and Trapping</b>	<ul style="list-style-type: none"> <li>• The mine site and its buffer zone would reduce the area available for hunting;</li> <li>• There would likely be an increase in hunters due to the influx of people working at the mine and increased access into the region as a result of the transmission line right- of-way; however, no hunting would be allowed by any workers at the mine site;</li> <li>• Ten guide outfitters would lose access to part of their registered territories as a result of the mine site, buffer zone and mine site access road and the transmission line would also cut through five guiding territories;</li> <li>• The Project would overlap the area of eight existing registered trapping licenses;</li> <li>• Little commercial trapping was reported to have taken place in recent years due to low fur prices but fur was still obtained for traditional uses; and</li> <li>• The proponent indicated that it would explore settlement and compensation agreements such as relocation or other management strategies that would maintain trapping potential without incurring costs;</li> </ul>
<b>Tourism and Recreation</b>	<ul style="list-style-type: none"> <li>• Thirteen commercial recreation tenures overlap the Project area;</li> <li>• The campground at Fish Lake would be lost, but a new campground would be built at Prosperity Lake;</li> <li>• Components of the mine site would be located within 3 km of Taseko Lake Lodge; and</li> <li>• Future aboriginal tourism opportunities were being considered in the Project area territories</li> </ul>

Source: CEAA 2010 p. 151-152

**Table E.16: The Panel’s assessment of relevant facts affecting navigation.**

Navigation Issues	Relevant Facts Considered
<b><i>Water Bodies and Waterways</i></b>	<ul style="list-style-type: none"> <li>• Navigation would no longer be possible in Fish Lake, Little Fish Lake and portions of Fish Creek;</li> <li>• Navigation in the Fraser River, Big Creek and some 125 small stream crossings were not predicted to be impeded by the transmission line;</li> <li>• The proponent proposed to mitigate the loss of navigation in the Fish Creek watershed with navigation in the Prosperity Lake and to enhance access to other navigable lakes in the area as an interim measure until Prosperity Lake was constructed; and</li> <li>• TC indicated that the Project would cause significant adverse effects on navigation.</li> </ul>

Source: CEEA 2010 p. 158

**Table E.17: The Panel’s assessment of relevant facts affecting traffic.**

Traffic Issues	Relevant Facts Considered
<b><i>Increased Risk of Traffic Accidents</i></b>	<ul style="list-style-type: none"> <li>• The proponent estimated the Project would add an annual average of approximately 250 vehicles/day during construction and about 100 vehicles/day during operations (round trip) to local area roads;</li> <li>• The proponent stated that traffic on the Taseko Lake / Whitewater Road would double to approximately 150 vehicles/day and that the increase in traffic may require the need for maintenance and rehabilitation expenditures by the provincial Ministry of Transportation and Highways; and</li> <li>• Concerns were expressed by local people that increased traffic would result in increased vehicular accidents and vehicle-truck collisions.</li> </ul>

Source: CEEA 2010 p. 161

**Table E.18: The Panel’s assessment of relevant facts affecting health.**

Human Health Issues	Relevant Facts Considered
<b><i>Physical Health</i></b>	<ul style="list-style-type: none"> <li>• The proponent reported that while concentrations of arsenic and methyl mercury in fish and chromium in moose meat would exceed guidelines, baseline levels of some of these parameters already exceeded guidelines;</li> <li>• The proponent reported that while antimony would exceed drinking water quality guidelines during post closure, there were no drinking water intakes in the vicinity of the mine;</li> <li>• Health Canada recommended that people not drink water from any untreated source including the pristine streams in the Project area; however, First Nations and the residents of Taseko Lake Lodge reported that they drink water directly from streams in the area;</li> <li>• Health Canada concluded that there would be no significant effects on health at the concentration levels predicted by the proponent from contaminants released from the mine; and</li> </ul>

	<ul style="list-style-type: none"> <li>• As a precautionary measure, Health Canada recommended that levels of arsenic and mercury in fish tissue be monitored to verify predictions.</li> </ul>
<b>Health and Social Services</b>	<ul style="list-style-type: none"> <li>• First Nations noted that due to their high birth rate, there would be a greater need for traditional foods to support a healthy community.</li> <li>• It was expressed that the Project would negatively affect these services and needs.</li> </ul>

Source: CEAA 2010 p. 67-68

**Table E.19: The Panel’s assessment of relevant facts affecting current use of lands and resources for traditional purposes.**

“Current Use of Lands and Resources for Traditional Purposes” Issues	Relevant Facts Considered
<b>Current Use</b>	<ul style="list-style-type: none"> <li>• First Nations spoke about spiritual balance, their natural laws, including the importance of sustainability for seven generations, and their role in protecting the land as environmental stewards and provided information on steps they have taken to support this role;</li> <li>• First Nations indicated a strong reliance on their traditional subsistence activities, as the sustenance gained from these current uses of the land and resources made a significant contribution to the average family’s overall economic well-being;</li> <li>• Many First Nations stated that their average income was low and that harvesting of traditional foods was a necessity for their survival;</li> <li>• First Nations described their family lineage, typically up to 4 generations, to illustrate how they continuously maintained their traditional use and occupancy of the land and how that continuous use strengthened their connection to those areas;</li> <li>• First Nations current use of the lands and resources within the Fish Lake and Nabas areas, and along the transmission line for traditional purposes, included fishing, hunting, gathering berries and traditional medicinal plants, as well as ceremonial and spiritual activities, and intergenerational teaching of traditional values including language and place names;</li> <li>• First Nations indicated the proposed mitigation measures and economic benefits presented by the proponent would not replace benefits First Nations received from their current use of the Project area;</li> <li>• The proponent recognized the Fish Lake area as being culturally important to the Tsilhqot’in but did not offer any specific means to mitigate effects on cultural heritage nor did it reach a specific conclusion on the significance of those effects;</li> <li>• The Tsilhqot’in referred to the Fish Lake area as one of the few remaining areas of cultural and spiritual importance for their people that was intact and not affected by other industrial development activities such as logging;</li> <li>• The Fish Lake area was reported to be an important cultural hub in seasonal Tsilhqot’in use of the land;</li> <li>• The Tsilhqot’in described the mine site area, and in particular Fish Lake island, as a significant place of power, where Tsilhqot’in people, including traditional healers, have held traditional and cultural ceremonies for spiritual healing;</li> <li>• Traditional practices were indicated to be important to the Tsilhqot’in culture and to have assisted them in healing from past traumas</li> </ul>

	<p>such as colonization and residential schools;</p> <ul style="list-style-type: none"> <li>• Secwepemc communities described the effects of the existing north-south BC Hydro transmission line and how they anticipated the proposed transmission line would negatively affect their current use for traditional purposes and cultural heritage; and</li> <li>• The Tsilhqot'in and Secwepemc spoke about how the effects of the Project on their current use of the land for traditional purposes would be significant and unmitigable.</li> </ul>
<b>Fishing</b>	<ul style="list-style-type: none"> <li>• First Nations spoke about their reliance on traditional foods to maintain and improve their physical and cultural well-being;</li> <li>• The loss of Fish Lake for this purpose could negatively affect the health of the Tsilhqot'in, particularly in the communities of the Nemiah Band and the Toosey Band; and</li> <li>• The proposed location for the Fraser River crossing of the transmission line was identified as an important fishing area for the Secwepemc communities and an area of unique cultural and archaeological heritage with extensive evidence of past occupation.</li> </ul>
<b>Hunting and Trapping</b>	<ul style="list-style-type: none"> <li>• The proposed transmission line would provide increased access to areas that were reported to be important hunting and gathering areas and would stress wildlife resources of importance to First Nations.</li> </ul>
<b>Plant Gathering</b>	<ul style="list-style-type: none"> <li>• First Nations spoke about their reliance on traditional foods to maintain and improve their physical and cultural well-being.</li> </ul>

Source: CEAA 2010 p. 201-202

**Table E.20: The Panel's assessment of relevant facts affecting aboriginal rights and title.**

<b>Aboriginal Rights and Title Issues</b>	<b>Relevant Facts Considered</b>
<b>Aboriginal Rights</b>	<ul style="list-style-type: none"> <li>• In general, First Nations stated that section 35 of the Constitution Act, 1982 provides protection for their Aboriginal rights;</li> <li>• First Nations stated that they were being displaced from the land and this was affecting their ability to practice their Aboriginal rights;</li> </ul>
<b>Effects on the Tsilhqot'in</b>	<ul style="list-style-type: none"> <li>• In the <i>William</i> case, the Tsilhqot'in were granted the right to hunt and trap birds and animals throughout the Claim area; with respect to title, Justice Vickers ruled that had the lawsuit been pleaded differently, he probably would have found Aboriginal title for over almost half of the Claim Area;</li> <li>• The proposed mine site would be located within the Claim Area with respect to Tsilhqot'in Aboriginal rights to hunt and trap, but would be located within the Eastern Trapline area which was outside of the potential title area; and</li> <li>• In the claim <i>Baptiste et al. vs. Taseko Mines Ltd, HMTQ BC and AGC</i>, the Tsilhqot'in asserted the right to fish in Fish Lake and to the protection and conservation of the cultural, ecological and spiritual integrity of the lands, waters and resources in and around Fish Lake, as required to sustain the meaningful exercise of the asserted right.</li> </ul>
<b>Effects on the Secwepemc</b>	<ul style="list-style-type: none"> <li>• The Alkali Lake Band and the Canoe Creek Band members of the Secwepemc Nation, reported that they were in stage 4 of the 6- stage BC Treaty Process;</li> </ul>

	<ul style="list-style-type: none"> <li>• The Secwepemc stated they had a proven Aboriginal right to hunt in accordance with the Alphonse case and a proven Aboriginal right to fish in accordance with Supreme Court of Canada decisions in <i>Sparrow</i> and <i>Kapp</i>; and</li> <li>• The Canoe Creek Band also stated they had uncontested Aboriginal rights to trap and harvest plants.</li> </ul>
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Source: CEAA 2010 p. 217

**Table E.21: The Panel’s assessment of relevant facts affecting the capacity of renewable resources.**

Capacity of Renewable Resources Issues	Relevant Facts Considered
<i>Fish and Fish Habitat</i>	<ul style="list-style-type: none"> <li>• The Panel notes that the Project would result in the loss of approximately 90,000 rainbow trout in the Fish Creek watershed;</li> <li>• The fish and fish habitat compensation plan, if successful, would result in a replacement of approximately 20,000 rainbow trout in Prosperity Lake; and</li> <li>• First Nations catch fish in the Fish Lake area for sustenance and for ceremonial purposes and indicated that they would not likely fish in Prosperity Lake due to fear that the fish would be contaminated.</li> </ul>
<i>Grizzly Bears</i>	<ul style="list-style-type: none"> <li>• The grizzly bear population is already threatened in the region from past activities; and</li> <li>• The grizzly bear is an important species for its intrinsic value, its spiritual value to First Nations and its value to tourism in the area.</li> </ul>

Source: CEAA 2010 p. 222

**Table E.22: The Panel’s assessment of relevant facts affecting biodiversity.**

Biodiversity Issues	Relevant Facts Considered
<i>Fish Lake Rainbow Trout</i>	<ul style="list-style-type: none"> <li>• There was uncertainty regarding the genetic distinctiveness of the rainbow trout in Lake.</li> <li>• Rainbow trout were reported to be a common species in the Cariboo-Chilcotin region.</li> </ul>
<i>The South Chilcotin Grizzly Bear</i>	<ul style="list-style-type: none"> <li>• There was disagreement on the potential effects of the Project on wildlife species, including those considered threatened, such as the grizzly bear.</li> <li>• The proponent concluded that habitat fragmentation and disturbance at the mine site would be considerable; however, at the regional level, biodiversity would not be substantially affected.</li> </ul>
<i>Moss (S. heterophyllum)</i>	<ul style="list-style-type: none"> <li>• The proponent recognized the potential effects to the endangered moss <i>S. heterophyllum</i> and proposed to relocate the boulders hosting populations to suitable sites outside the mine footprint.</li> </ul>

Source: CEAA 2010 p. 224

**Table E.23: The Panel’s assessment of the effects of the environmental on the Project.**

“Effects of the Environment on the Project” Issues	Relevant Facts Considered
<b>Climate Change</b>	<ul style="list-style-type: none"> <li>Climate change and its effects are widely known to introduce variable changes to weather patterns that are often difficult to predict.</li> </ul>
<b>Extreme Weather</b>	<ul style="list-style-type: none"> <li>The proponent’s water management plan includes provision for various scenarios of extreme precipitation and wind events.</li> </ul>
<b>Forest Fires</b>	<ul style="list-style-type: none"> <li>The proponent’s proposed mitigation measures are reasonable to minimize the potential effects of forest fires on the Project; but</li> <li>Given the degree of impact from logging activity and the mountain pine beetle infestation, the area is still at an increased risk for forest fires.</li> </ul>
<b>Mountain Pine Beetle</b>	<ul style="list-style-type: none"> <li>Extensive dead timber due to the mountain pine beetle could increase the risk and intensity of fire.</li> </ul>
<b>Seismic Activity</b>	<ul style="list-style-type: none"> <li>The proponent has committed to construct embankments according to the Canadian Dam Association Guidelines and Part 4 of the Canada Building Code; and</li> <li>NRCan is of the opinion that the proponent has adequately addressed the matter of earthquakes and seismic hazards in its proposed embankment design.</li> </ul>

Source: CEEA 2010 p. 228

**Table E.24: The Panel’s Recommendations**

Need, Purpose, and Assessment of Alternatives	
Assessment Component	The Panel’s Recommendations
<b>Need for, Purpose, and Alternatives to the Project</b>	1) The proponent and appropriate parties should re-examine the choice of the transmission line corridor to determine whether one transmission line would be an appropriate alternative to serve both the Project and the Tsilhqot’in National Government’s proposed biomass fired, thermal electric power plant, should that project proceed prior to construction of the transmission line.
<b>Alternative Means to Carrying Out the Project</b>	<i>No recommendation given.</i>
Environmental Effects	
Assessment Component	The Panel’s Recommendations
<b>Surface Water</b>	2) The proponent should monitor water levels in Beece Creek and implement appropriate corrective action in order to minimize flooding at Taseko Lake Lodge.
<b>Groundwater</b>	3) A long-term follow-up and monitoring program should be designed and implemented to verify the predicted seepage rates and concentration of contaminants from the TSF toward Big Onion Lake and the effectiveness of the proposed primary mitigation measures.
<b>Fish and Fish Habitat</b>	<i>No recommendation given.</i>

<b>Terrain and Soil</b>	<p>4) Further detailed terrain hazard and soils mapping should be done by the proponent in areas of the transmission line right-of-way that have been identified as having potentially hazardous terrain and sensitive soils to assist in finalizing the centerline;</p> <p>5) The proponent should complete an additional assessment of areas of slope instability on the access; and</p> <p>6) Areas identified as unstable should undergo a detailed on-site terrain stability assessment by a qualified professional so that appropriate planning and mitigation measures can be undertaken prior to the commencement of construction activities.</p>
<b>Vegetation</b>	<i>No recommendation given.</i>
<b>Wildlife and Wildlife Habitat</b>	<p>7) The proponent construct the transmission corridor right-of-way in such a manner as to avoid long straight-line sight distances to reduce the negative effect of the right-of-way on predator-prey relationships;</p> <p>8) The proponent begin discussions immediately with the BC Ministry of Environment and the affected First Nations to develop a wildlife habitat compensation plan for mule deer;</p> <p>9) The proponent involve the affected First Nations in the development and implementation of the mitigation measures to address the concerns regarding access along the transmission line right-of-way; and</p> <p>10) The proponent should develop and implement a wildlife habitat compensation plan that provides for the creation of additional wetland/riparian habitat beyond that proposed by the proponent at the mine site, in collaboration with Environment Canada, the BC Ministry of Environment, affected First Nations and appropriate environmental organizations such as Ducks Unlimited;</p>
<b>Atmosphere</b>	<i>No recommendation given.</i>
<b>Noise</b>	<i>No recommendation given.</i>
<b>Archeology</b>	11) First Nations, the Province and the proponent should develop an agreement outlining mitigation measures to avoid or minimize damage to archaeological finds, as well as how found artifacts would be preserved. The agreement should incorporate traditional values of First Nations and be completed prior to the start of construction.
<b>Cumulative Effects</b>	<i>No recommendation given.</i>
<b>Socio-Economic Effects</b>	
<b>Assessment Component</b>	<b>BC EAO's Recommendations</b>
<b>Land and Resource Uses</b>	<p>12) The proponent should consider relocating the transmission line outside the Esketemc Community Forest, or consider options mutually agreeable to all parties involved to minimize or compensate for the effects on the Community Forest;</p> <p>13) The proponent should meet with the affected tourism business owners to discuss compensation for lost business as a form of mitigation; and</p> <p>14) The proponent should monitor ground level concentrations of particulate matter at the Taseko Lake</p>
<b>Navigation</b>	<p>15) Transport Canada should hold further discussion with the proponent, First Nations and recreational users to determine whether interim access to other lakes would be desirable and if so, appropriate measures be developed to minimize the environmental effects of creating increased access to navigation and related fishing opportunities elsewhere.</p> <p>16) The proponent should provide access to Prosperity Lake within the same season that the lake becomes available as a compensation fishery – in approximately Year 7 of the operation phase, and</p> <p>17) The proponent should establish access to Prosperity Lake to allow for boat launching, camping and fishing to replicate as much as possible the water bodies it would replace;</p>

<b>Traffic</b>	<i>No recommendation given.</i>
<b>Human Health</b>	18) The proponent should monitor arsenic and mercury in fish tissue as a precautionary matter to verify predictions and the results of the monitoring should be provided to appropriate federal and provincial authorities.
<b>First Nations Issues</b>	
<b>Assessment Component</b>	<b>BC EAO's Recommendations</b>
<b>Current Use of Lands and Resources for Traditional Purposes</b>	19) The proponent should collaborate with the Secwepemc when determining the final alignment of the transmission line centreline in order to minimize disturbance resulting from the Project to areas of importance to the Alkali Lake Band and Canoe Creek Band.
<b>Aboriginal Rights</b>	<i>No recommendation given.</i>
<b>Aboriginal Title</b>	<i>No recommendation given.</i>
<b>Other Issues</b>	
<b>Assessment Component</b>	<b>BC EAO's Recommendations</b>
<b>Capacity of Renewable Resources</b>	<i>No recommendation given.</i>
<b>Biodiversity</b>	20) The proponent should commit to monitoring of transplanted <i>Schistidium heterophyllum</i> populations and the implementation of appropriate adaptive management measures to ensure its survival.
<b>Effects of the Environment on the Project</b>	<i>No recommendation given.</i>
<b>Measures to Enhance any Beneficial Environmental Effects</b>	<i>No recommendation given.</i>
<b>Accidents and Malfunctions</b>	21) The proponent should investigate pit wall stability prior to closure to minimize any post-closure stability problems, and 22) The proponent should develop a revised emergency response plan before mine closure to address a possible embankment failure.
<b>Environmental Management</b>	23) The federal and provincial governments should establish an independent monitoring committee as soon as possible to assist in building trust between the proponent and First Nations and to demonstrate that the proponent is implementing its commitments as intended throughout the mine life, and 24) The suggested responsibilities of the independent monitoring committee are highlighted in this recommendation

**Table E.25: A Comparison of the Significant Conclusion of the BC EAO and the Panel for All Major Assessment Components**

<b>Assessment Component</b>	<b>BC EAO's Conclusions</b>	<b>The Panel's Conclusions</b>
<b>Need, Purpose, and Assessment of Alternatives</b>		
<b>Need for, Purpose, and Alternatives to the Project</b>	<i>Not Assessed</i>	<ul style="list-style-type: none"> <li>The Panel concluded that the proponent was aware of the many variables that would affect the Project's viability, and that the proponent sufficiently outlined the purpose and need for the Project for the purpose of the EA and,</li> <li>The Panel concluded that the proponent's decision that an open pit mine was the only</li> </ul>

		feasible alternative to mine ore of this grade was reasonable (p. 237).
<b>Alternative Means to Carrying Out the Project</b>	<ul style="list-style-type: none"> <li>The EAO concluded that the proponent's rationale for selecting its preferred alternative for the mine development plan was reasonable for the purpose of the EA.</li> </ul>	<ul style="list-style-type: none"> <li>The Panel concluded that the proponent's rationale for selecting its preferred alternative for the mine development plan was reasonable for the purpose of the EA (p. 237).</li> </ul>

Assessment Component	BC EAO's Conclusions	The Panel's Conclusions
<b>Environmental Effects</b>		
<b>Metal Leaching and Acid Rock Drainage</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects in respect of metal leaching and acid rock drainage (p.37)</li> </ul>	<ul style="list-style-type: none"> <li>The Panel concluded that the Project <i>would not result</i> in a significant adverse effect on surface water hydrology in the Project area.</li> <li>The Panel concluded that the Project <i>would not result</i> in a significant adverse effect on surface water quality; and</li> <li>The Panel concluded that the Project <i>would not result</i> in a significant adverse effect on fish health in the Taseko River (p. 237).</li> </ul>
<b>Surface Water/Hydrology</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects on hydrology (p.42)</li> </ul>	
<b>Groundwater/Hydrogeology</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects on hydrogeology (p.42)</li> </ul>	<ul style="list-style-type: none"> <li>Seepage from the TSF <i>would not result</i> in a significant adverse effect on water quality in Big Onion Lake (p. 237).</li> </ul>
<b>Fish and Fish Habitat</b>	<ul style="list-style-type: none"> <li>The Project <i>is likely</i> to have significant adverse effect on fish and fish habitat (p.61).</li> </ul>	<ul style="list-style-type: none"> <li>The Project <i>would result</i> in a significant adverse effect on fish and fish habitat in the Fish Creek watershed (p. 237).</li> </ul>
<b>Terrain and Soils</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects on terrain and soils (p.75)</li> </ul>	<ul style="list-style-type: none"> <li>The Project <i>would not result</i> in a significant adverse effect on terrain and soils (p. 238).</li> </ul>
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have a significant adverse effect on vegetation (p.71).</li> </ul>	<ul style="list-style-type: none"> <li>The Project <i>would not result</i> in a significant adverse effect on old growth forest, and</li> <li>The Project <i>would not result</i> in a significant adverse effect on grassland ecosystems (p. 238).</li> </ul>
<b>Wildlife and Wildlife Habitat</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have a significant adverse effect on wildlife (p.84).</li> </ul>	<ul style="list-style-type: none"> <li>The Project <i>would not result</i> in a significant adverse effect on mule deer and moose and their habitat; and,</li> <li>Provided a wildlife habitat compensation plan is developed and implemented, the Project <i>would not result</i> in a significant adverse effect on migratory birds and their habitat (p. 238).</li> </ul>
<b>Atmosphere/Air Quality</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have a significant adverse effect on air quality (p.64).</li> </ul>	<ul style="list-style-type: none"> <li>Emissions of particulate matter from the Project <i>would not result</i> in significant adverse effects;</li> <li>The contribution of greenhouse gases from the Project <i>would not result</i> in a significant adverse effect; and</li> <li>Light pollution from the Project <i>would not result</i> in a significant adverse effect (p. 237).</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>Not Assessed</li> </ul>	<ul style="list-style-type: none"> <li>Project-related noise <i>would not result</i> in a significant adverse effect (p. 237).</li> </ul>

Assessment Component	BC EAO's Conclusions	The Panel's Conclusions
<b>Economic Effects</b>		
<b>Land and Resource Uses</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects on local, regional, and provincial economies (p.91).</li> </ul>	<ul style="list-style-type: none"> <li>The Project <i>would not result</i> in a significant adverse effect on the forest industry;</li> <li>The proposed mine site <i>would result</i> in a locally significant adverse effect on the users of the meadows within the Fish Creek watershed due to the loss of grazing lands;</li> <li>The Project <i>would not result</i> in a significant adverse effect on ranching and grazing along the transmission line corridor;</li> <li>The Project <i>would not result</i> in a significant adverse effect on hunting in the region;</li> <li>The Project <i>would not result</i> in a significant adverse effect on trapping in the region, but <i>would result</i> in a significant adverse effect on the Nemiah Band Sonny Lulua trap line that would be most affected by the mine site footprint; and</li> <li>The Project <i>would not result</i> in a significant adverse effect on tourism and recreation in the region, but would result in a significant adverse effect on the Taseko Lake Outfitters tourism business (p. 238).</li> </ul>
<b>Navigation</b>	<i>Not Assessed</i>	<ul style="list-style-type: none"> <li>The Project <i>would result</i> in a significant adverse effect on navigation (p. 239).</li> </ul>
<b>Traffic</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects on transportation and traffic (p.92).</li> </ul>	<ul style="list-style-type: none"> <li>Increased traffic from the Project <i>would not result</i> in a significant adverse effect (p. 239).</li> </ul>

Assessment Component	BC EAO's Conclusions	The Panel's Conclusions
<b>Social Effects</b>		
<b>Human Health</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects on human health (p.101).</li> </ul>	<ul style="list-style-type: none"> <li>The Project <i>would not result</i> in a significant adverse effect on human health from consuming fish, moose meat, and drinking water (p. 239).</li> </ul>
<b>Healthy Living</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects on healthy living (p.103).</li> </ul>	<ul style="list-style-type: none"> <li>The Project <i>would not result</i> in a significant adverse effect on community health services (p. 239).</li> </ul>
<b>Archeological and Heritage Resources</b>	<ul style="list-style-type: none"> <li>The Project <i>is not likely</i> to have significant adverse effects on archeological and heritage resources (p.98).</li> </ul>	<ul style="list-style-type: none"> <li>Provided that the recommendation identified by the Panel is implemented, the Project <i>would not result</i> in a significant adverse effect on physical heritage and sites of archaeological importance.</li> </ul>

Assessment Component	BC EAO's Conclusions	The Panel's Conclusions
<b>First Nations Issues</b>		
<b>Current Use of Lands and Resources for Traditional Purposes</b>	<ul style="list-style-type: none"> <li>Given the mitigation measures and commitments proposed by the proponent, residual effects of the Project on the ability of any First Nations to continue to practice aboriginal rights, whether asserted or</li> </ul>	<ul style="list-style-type: none"> <li>The Project <i>would have</i> a significant adverse effect on the Tsilhqot'in Nation regarding their current use of lands and resources for traditional purposes and on cultural heritage resources, and</li> <li>The Project <i>would not result</i> in significant adverse effects on the Secwepemc Nation's</li> </ul>

<b>Aboriginal Rights</b>	proven, and to carry out traditional activities <i>are not significant</i> , and that impacts on any established and admitted rights <i>are justifiable</i> .	<p>current use of land and resources for traditional purposes and on cultural heritage (p. 239).</p> <ul style="list-style-type: none"> <li>The Project <i>would result</i> in a significant adverse effect on established Tsilhqot'in Aboriginal rights as defined in the William case;</li> <li>The Project <i>would result</i> in a significant adverse effect on the potential Tsilhqot'in Aboriginal right to fish in Fish Lake (p. 239).</li> </ul>
<b>Aboriginal Title</b>		<ul style="list-style-type: none"> <li>The Project <i>would result</i> in a significant adverse effect on Tsilhqot'in Aboriginal title that could be granted;</li> <li>Provided the planned mitigation to avoid construction in sensitive locations would be applied in cooperation with the Secwepemc, the Project <i>would not result</i> in a significant adverse effect on established or potential Secwepemc rights; and</li> <li>Depending on the size of the land settlement through the treaty process, the Project <i>may result</i> in a significant adverse effect on any such title that could be granted to the Alkali Lake Band and the Canoe Creek Band (p. 239).</li> </ul>

Assessment Component	BC EAO's Conclusions	The Panel's Conclusions
<b>Other Issues</b>		
<b>Cumulative Effects</b>	Not Assessed	<ul style="list-style-type: none"> <li>The Project <i>would not result</i> in a significant adverse cumulative effect on vegetation;</li> <li>The Project, together with past, present and reasonably foreseeable future forestry activities in the area, <i>would result</i> in a significant adverse cumulative effect on the South Chilcotin grizzly bear population but would not result in a significant adverse cumulative effect on deer, moose, and other wildlife;</li> <li>The Project, in combination with an extended mine life proposal, <i>would not result</i> in a significant adverse cumulative effect on surface water and groundwater; and</li> <li>The Project, in combination with an extended mine life proposal <i>would further increase</i> the likelihood of failure of the fish and fish habitat compensation plan and thus <i>result</i> in a significant adverse cumulative effect on fish and fish habitat (p. 239).</li> </ul>
<b>Capacity of Renewable Resources</b>	Not Assessed	<ul style="list-style-type: none"> <li>The Project <i>would result</i> in the inability of the fisheries resource in the Fish Creek watershed and the South Chilcotin grizzly bear population to meet the needs of present and future generations (p. 239).</li> </ul>
<b>Biodiversity</b>	Not Assessed	<ul style="list-style-type: none"> <li>The Project <i>would not result</i> in a significant adverse cumulative effect on biodiversity (p. 239).</li> </ul>

<b>Effects of the Environment on the Project</b>	<i>Not Assessed</i>	<ul style="list-style-type: none"> <li>The effects of the environment on the Project <i>would not</i> be significant (p. 239).</li> </ul>
<b>Measures to Enhance any Beneficial Environmental Effects</b>	<i>Not Assessed</i>	<ul style="list-style-type: none"> <li>The proposed mitigation measures <i>would not result</i> in an enhancement of beneficial environmental effects (p. 240).</li> </ul>
<b>Accidents and Malfunctions</b>	<i>Not Assessed</i>	<ul style="list-style-type: none"> <li>The proposed mitigation measures, emergency plans and commitments to address the possibility of accidents and malfunctions were <i>adequate</i> (p. 240).</li> </ul>
<b>Environmental Management</b>	<i>Not Assessed</i>	<ul style="list-style-type: none"> <li>The proponent's conceptual environmental management plans are consistent with good management practices to ensure that effects of the Project activities would be minimized and its commitments would be followed (p. 235).</li> </ul>

Source: CEAA, 2010; EAO, 2009

## Appendix F: Chapter 7 Supplemental Material

**Table F.1: A Summary of Haddock’s (2011) Conclusions on the Common Themes and Issues that Help Explain the Divergent EA Outcomes for the Project.**

Common Themes and Issues	Conclusion for the Provincial Assessment of the Project	Conclusion for the Federal Assessment of the Project
<b>Process</b>	<ul style="list-style-type: none"> <li>The BC EAO only provided a short review and comment period from March-May 2009, which was solely based on Taseko’s original application and occurred before critical information was made available.</li> <li>The provincial review was predominantly paper-based, which compromised openness, transparency, and accountability throughout the process, and made it difficult for the BC EAO to fully appreciate and comprehend the significance of impacts to those affected by the project.</li> </ul>	<ul style="list-style-type: none"> <li>The Panel hearings occurred over a significantly longer period and were able to collect and benefit from more detailed information.</li> <li>The Panel did not commence the public hearings until it was satisfied with Taseko’s EIS. This provided the public, First Nations, technical experts, and federal agencies with a better foundation of information from which to comment on the Project.</li> <li>The Panel hearing process provided a more open, transparent and accountable setting for fact-finding, which was critical to maintain First Nations confidence in the fairness of the process.</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>The BC EAO did not wait for DFO and First Nations to provide critical information; therefore, the provincial assessment and decision-making process was based on an insufficient and incomplete evidentiary record.</li> <li>Specifically, critical information about the Fish and Fish Habitat Compensation Plan, grizzly bear impacts, and First Nation’s traditional land use and cultural heritage was omitted from BC EAO’s and provincial minister’s factual records.</li> </ul>	<ul style="list-style-type: none"> <li>The Panel and federal Cabinet had more complete and comprehensive information upon which to base their analysis and decisions.</li> </ul>
<b>Expertise</b>	<ul style="list-style-type: none"> <li>The provincial <i>Assessment Report</i> identified four EAO staff handling the assessment but did not reveal their respective qualifications or areas of expertise.</li> </ul>	<ul style="list-style-type: none"> <li>The Panel was highly qualified, made-up of members that were impact assessment professionals, and chaired by an engineer with 27 years of relevant EA experience.</li> <li>From an agency perspective, the information provided by the DFO represented a level of expertise in assessing impacts, mitigation and compensation that was not available when the BC EAO concluded its assessment.</li> <li>The Panel was able to receive a form of expert peer review on Taseko’s EIS from fisheries scientist Dr. Gordon Hartman and grizzly biologist Wayne McCrory.</li> </ul>
<b>Significant Determinations</b>	<ul style="list-style-type: none"> <li>In addressing what may constitute a significant adverse effect, the BC EAO described that it would use criteria that is “generally consistent with the analysis used in federal environmental</li> </ul>	<ul style="list-style-type: none"> <li>The Panel adopted long-established significance determination policies under the <i>CEA Act</i> (1992), which are found in the 1994 guide “Determining Whether a Project is Likely to Cause Significant Environmental Effects.”</li> </ul>

	<p>assessments under the <i>Canadian Environmental Assessment Act</i>, although EAO has added the factor of probability” (EAO, 2009 p. 25).</p> <ul style="list-style-type: none"> <li>• In practice, the BC EAO consistently discounted the significance of local impacts by evaluating them against a large geographic area, in some cases the entire Cariboo-Chilcotin region.</li> <li>• The BC EAO’s assessment is full of examples that demonstrate this problem, especially for the significance determination of local impacts on fish, fish habitat, hunting, trapping, traditional land use, Aboriginal rights and tourism.</li> </ul>	<ul style="list-style-type: none"> <li>• The guide specifically cautioned EA practitioners that there is a loss of specificity when locally significant adverse effects are quantitatively evaluated against an unreasonably large geographic area.</li> <li>• Haddock (2011) is of the opinion that this is one of the main explanations for the divergent findings of the two assessments.</li> </ul>
<p><b>Mitigation and Compensation</b></p>	<ul style="list-style-type: none"> <li>• In BC there is a lack of clear mitigation and compensation policies to guide environmental policy, and specifically the BC EAO.</li> <li>• With the absence of established policies and regulatory guidelines the BC EAO is left rudderless, and as a result, the BC EAO can be hesitant in determining adverse effects as significant, as every adverse effect becomes an opportunity for negotiation.</li> <li>• The broadly worded objectives and performance measures to guide the compensation for the loss of Fish Lake, which were developed by the BC MOE, allowed the BC EAO to defer mitigation and compensation plans and procedures to the subsequent permitting stage</li> </ul>	<ul style="list-style-type: none"> <li>• The Panel and the DFO were directed by a long established “no net loss” policy for the destruction of Fish Lake.</li> <li>• Mitigation and compensation guidelines under the <i>CEA Act (1992)</i> required that these issues are resolved before a RA could exercise its decision-making function.</li> </ul>
<p><b>Standards and Criteria</b></p>	<ul style="list-style-type: none"> <li>• BC’s legislated EA framework lacks criteria or standards to guide decision-making around Valued Ecosystem Components and other environmental values.</li> <li>• BC’s <i>Wildlife Act</i> also failed to provide standards and criteria to measure impacts to wildlife and wildlife habitat against, even for endangered species.</li> <li>• In practice, the BC EAO missed significant adverse effects on the South Chilcotin grizzly bear population, and overlooked several other wildlife-related issues that were of concern to the provincial MOE.</li> </ul>	<ul style="list-style-type: none"> <li>• The Panel was guided by clear standards, criteria and prohibitions found in established federal legislation such as the <i>Fisheries Act (1985)</i> and <i>Species at Risk Act (2002)</i> (Haddock, 2011).</li> <li>• The <i>CEA Act (1992)</i> emphasized that the significance of adverse environmental effects is determined by a combination of regulated thresholds and standards, scientific data, social values, and professional judgments</li> </ul>

<p><b>Legislation</b></p>	<ul style="list-style-type: none"> <li>• The <i>BC EAA</i> (2002) is largely procedural and lacks of substantive aspects of the <i>CEA Act</i> (1992).</li> <li>• BC's current EA legislation does not:</li> <li>• address or define important assessment concepts and terminology;</li> <li>• include decision-making criteria such as those that guide responsible authorities under the <i>CEA Act</i> (1992);</li> <li>• and include policies and reference guides to assist assessment practitioners such as those developed under the <i>CEA Act</i> (1992).</li> </ul>	<ul style="list-style-type: none"> <li>• The structure of the EA regime for the Project was more effectively structured through the <i>CEA Act's</i> (1992) regulations and policies.</li> </ul>
<p><b>Independence</b></p>	<ul style="list-style-type: none"> <li>• The BC EAO failed to identify significant adverse effects of the Project to anything other than fish and fish habitat, despite being presented strong evidence to the contrary.</li> <li>• The question that arises is whether the reporting relationship of the BC EAO to relevant provincial ministers affected its judgment, objectivity, and neutrality throughout its assessment of the Project.</li> </ul>	<ul style="list-style-type: none"> <li>• The Panel exercised significantly more independence throughout its assessment of the Project.</li> </ul>
<p><b>Sustainability Objectives</b></p>	<ul style="list-style-type: none"> <li>• In 2002, BC's Liberal government repealed the <i>BC EAA</i> (1996) and subsequently removed a sustainability objective throughout the EA legislation.</li> <li>• The assessment approach undertaken by the BC EAO does not adopt sustainability principles.</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainability is an explicit purpose of the <i>CEA Act</i> (1992), and is an inherent theme that runs throughout the Panel's reasoning process for the Project.</li> </ul>

Source: Haddock, 2001 p. 66-71

## Box F.2: Recent Changes to the *CEA Act* With Respect to Decision-Making Criteria

### Decision-Making Criteria

A disturbing change initiated by the *CEA Act* (2012) is the considerable shift in project review responsibilities towards the CNSC and NEB. This closely aligns the federal EA process with the regulatory process, which makes it more difficult for EA to function as a true planning process, which engages the public, First Nations and governments in the early stages of project planning, design, and alternatives assessment (Doelle, 2012). Furthermore, under the current *Act* (2012), for projects that are found to have significant adverse effects, the Cabinet determines if the effects are justified in the circumstances. If the effects are considered justified, the Minister of Environment determines the ensuing conditions for project approval (Doelle, 2012). This new discretionary provision transfers considerable decision-making power to the Cabinet and essentially validates political interference within the federal EA process. As emphasized by Herring (2009), Canada's current federal EA laws "place disproportionate weight on project proponents and federal authorities whose motivations may be driven by development rather than sustainability" (p.292-293).

Furthermore, the *CEA Act* (2012) significantly narrows the scope of assessments, reduces the quantity of EA tracts, and introduces further discretion into the application process (Doelle, 2012) (See "The Environmental Assessment Process" comparisons in Table 3.2). As emphasized by Doelle (2012), the *CEA Act* (2012) is a step back to the situation demonstrated in the *True North* case, because depending on the RA's interpretation of "incidental" (referenced in section 2 and 5), project scope can once again be narrowly limited to only include project components of the listed designated projects (p.11). Most notably, the definition of "environmental effect" has been significantly narrowed, and is now only limited to the limited environmental components that are listed in section 5 (See "Definition of Environmental Effects" in Table 3.2). Furthermore, the new statute no longer requires an assessment of the need for the project, or effect of the project on the capacity of renewable resources. These fundamental changes turn the new *CEA Act* (2012) into "a regulatory information gathering process with a focus on components of projects that are under direct regulatory control of the federal government," with an assessment scope "that is based only on selected functional jurisdiction over issues such as fisheries, aquatic species, migratory birds and aboriginal peoples" (Doelle, 2012 p. 13).

### Box F.3: Recent Changes to the *CEA Act* With Respect to Efficiency

#### Efficiency

The new *CEA Act* (2012) sets statutory timelines for the completion of an EA (See “Time Limits” in Table 3.2). This can improve predictability throughout the EA process; however, imposing a rigid deadline onto a complex EA process could result in incomplete or chaotic assessments, which do not effectively consider comprehensive scientific and public information. Under new *Act* (2012), panels determine who is permitted to participate in hearing process as an interested party (*CEA Act*, s.2 (b), 2012). Statutory timelines will put panels in a position of limiting public engagement in order to meet the strict time limits imposed, or face having the hearing process terminated, and completed by the CEEA (Doelle, 2012). For the federal assessment of the Project, the public hearing process offered a robust and flexible fact-finding environment, which allowed the Panel to collect more complete information upon which to base their analysis. Under the strict statutory time limits of the current *CEA Act* (2012), the Panel may have missed important information that was made available in the latter stages of the assessment, which could have resulted in a decision that was based on a deficient evidentiary record, similar to that of the BC EAO. Overall, as noted by Doelle (2012), “strict timelines tend to put members of the public at a disadvantage relative to proponents” (p.15). Proponents have significantly more financial and technical capacity to undertake the requirements of EAs in a timelier fashion.

#### Box F.4: Recent Changes to the CEA Act With Respect to Public Participation

##### Public Participation

The revised approach under the new *CEA Act* (2012) represents a significant step backwards in the effort to meaningfully engage members of the public throughout the EA process. Most importantly, fewer federal EAs mean fewer opportunities for the public to become meaningfully engaged in the project planning or decision-making process (Doelle, 2012). As a starting point, the narrower definition of “interested party” under the new *Act* (2012) will significantly reduce public engagement. As highlighted in Chapter 3 (See “Public Participation” in Table 3.2) the former *CEA Act* (1992) defined interested party as “any person or body having an interest in the outcome of the environmental assessment for a purpose that is neither frivolous nor vexatious” (*CEA Act*, s.2, 1992). Public participants were not restricted in any manner. Under the *CEA Act* (2012), an interested party is, in the opinion of an RA (e.g., NEB, CNSB, CEAA) or review panel, a person that is “directly” affected by the carrying out of the designated project or someone with “relevant” information or expertise (*CEA Act*, s.2, 2012). The review panel process undertaken for the Project gave members of the public a more meaningful opportunity to engage in the EA process; however, under the new *Act* (2012) only interested parties will have the right to fully participate in review panel hearings. The narrower definition of interested party may largely prevent all input from those not in the local area of proposed undertakings, and will make it significantly harder for urban environmental organizations to protect remote areas of interest. In addition, this narrower definition may create a class concerned members of the public that do not qualify as having a direct interest, and as such will be excluded from the some parts of the federal EA process.

As noted in Chapter 3 the new *CEA Act* (2012) sets statutory timelines for the completion of an EA. This can improve predictability throughout the EA process; however, imposing a rigid deadline onto a complex EA process could result in incomplete public engagement. Under new *CEA Act* (2012), panels determine who is permitted to participate in hearing process as an interested party (*CEA Act*, s.2 (b), 2012). Statutory timelines will put panels in a position of limiting public engagement in order to meet the strict time limits imposed, or face having the hearing process terminated, and completed by the CEAA (Doelle, 2012). For the federal assessment of the Project, the public hearing process offered a robust and flexible fact-finding environment, which allowed the Panel to collect more complete information upon which to base their analysis. Overall, as noted by Doelle (2012), “strict timelines tend to put members of the public at a disadvantage relative to proponents” (p.15). Proponents have significantly more financial and technical capacity to undertake the requirements of EAs in a timelier fashion.

**Box F.5: Recent Changes to the *CEA Act* With Respect to Enforcement and Compliance**

**Enforcement and Compliance**

A potential advancement of the new *CEA Act (2012)* is the introduction of new enforcement and compliance provisions. The new *CEA Act (2012)* grants considerable powers to compliance officers to search, seize, and make orders, and features summary convictions offences for failing to comply with the provisions of the new *CEA Act (2012)*. This is done through enforceable decision statements that are provided at the conclusion of the EA. The absence of such a provision has been a notable limitation of the preceding federal EA legislation. Despite this apparent step forward, Doelle (2012) warns that the tightly constrained scope of EAs under the new legislation will limit the practical value of enforceable decisions.

## Appendix G: Chapter 8 Supplemental Material

**Table G.1: Summary of Public Participation Efficacy Criteria for Improving Public Participation in BC’s EA Process**

Procedural Efficacy Criteria	
<b>Notification</b>	<ul style="list-style-type: none"> <li>• Notification should occur at least 45 calendar days prior to start of the process;</li> <li>• Notification should occur through a minimum of one newspaper notice; and</li> <li>• Notification should occur through personal methods such as letters and email to make aware those most likely affected (Baker &amp; McLelland, 2003).</li> </ul>
<b>Access to Information</b>	<ul style="list-style-type: none"> <li>• Relevant information should be made available in regional libraries and on the EAO website, and should highlight issues in the decision-making process (Lucas, 1977);</li> <li>• The information should be of immediate relevance, be attractive and brief, and be appropriate to the people’s abilities, experience, knowledge, language, and culture (Beresford and Croft, 1993).</li> </ul>
<b>Consultation Techniques</b>	<ul style="list-style-type: none"> <li>• The BC EAO should seek input on public preferences for timing, location, and format of consultations; and</li> <li>• The BC EAO should select appropriate consultation techniques for different circumstances (public meetings, open houses, site visits etc.) (Baker &amp; McLelland, 2003).</li> </ul>
<b>Reporting</b>	<ul style="list-style-type: none"> <li>• The BC EAO should direct reporting in writing to all participants in consultation, upon announcement of decision on the project by minister (Brenneis and M’Gonigle, 1992); and</li> <li>• The report should include a review of the consultation process and explanation of how results were or were not incorporated into final decision (Knopp and Caldbeck, 1990).</li> </ul>
Substantive Efficacy Criteria	
<b>Legislated Participation</b>	<ul style="list-style-type: none"> <li>• There should be a legislative basis for public participation within the <i>BC EAA</i>;</li> <li>• The <i>BC EAA</i> should mandate active public participation in project assessment planning and design, beyond the “review and comment” opportunities now provided; and</li> <li>• Public advisory committees should be reinstated into the <i>BC EAA</i> (Haddock, 2010).</li> </ul>
<b>Representation</b>	<ul style="list-style-type: none"> <li>• All members of the public should have equal access and opportunity to participate; and,</li> <li>• Representation should entail a full range of value and interests on a topic (Beresford &amp; Croft, 1993; MacLaren, 1995).</li> </ul>

<b><i>Participant Learning and Understanding</i></b>	<ul style="list-style-type: none"> <li>• The BC EAO should inform participants of the issues and the participation process;</li> <li>• The BC EAO should inform participants of the decision-making process; and,</li> <li>• Participants should gain a new set skills, ideas, and values (Lucas, 1977; Brenneis and M'Gonigle, 1993; Smith, 1993).</li> </ul>
<b><i>Resource Provisions</i></b>	<ul style="list-style-type: none"> <li>• Inequalities between the participants should be balanced by resource provisions so that the public can enter the consultation process and continue to participate (Brenneis and M'Gonigle, 1992; Beresford and Croft, 1993; Smith, 1993).</li> </ul>

<b>Transactive Efficacy Criteria</b>	
<b><i>Time Management</i></b>	<ul style="list-style-type: none"> <li>• The BC EAO should manage the participation process without undue delay or cost to proponents and the public;</li> <li>• The timelines and schedules should be negotiated up-front; and</li> <li>• The participation process should progress in accordance with the negotiated timelines and schedules (Baker &amp; McLelland, 2003).</li> </ul>
<b><i>Cost Management</i></b>	<ul style="list-style-type: none"> <li>• The objectives of public consultation should be achieved at a reasonable cost as estimated by informed judgments on appropriate consultation techniques (Baker &amp; McLelland, 2003).</li> </ul>

**Source:** Baker & McLelland (2003); Beresford and Croft, 1993; Brenneis and M'Gonigle, 1993; Haddock, 2010; Lucas, 1977; and, Smith, 1993

**Table G.2: Decision-Making Points and Areas of Responsibility Throughout Canada and BC Assessments of the Project.**

Important Decision-Making Points	Canada's EA Process for the Project	BC's EA Process for the Project
<i>The EIS</i>	<ul style="list-style-type: none"> <li>The proponent commissioned and prepared the EIS.</li> <li>The proponent, which is not an objective party, has the responsibility to carry out quality control measures of a proposed undertaking that is in their interest; therefore, the credibility of the subsequent EA process is compromised.</li> </ul>	
<i>Triggering</i>	<ul style="list-style-type: none"> <li>The Project was triggered through legislative and regulatory requirements, and RA's and the Minister of Environment had the discretion to determine whether the proposed activity triggered an EA.</li> <li>Determinations can sometimes occur late in the planning process of a proposed activity, which results in delayed and insufficient opportunities for stakeholders to engage in the overall EA process.</li> </ul> <p style="text-align: right;">(Doelle, 2008)</p>	<ul style="list-style-type: none"> <li>The Project met the narrow thresholds in the <i>Reviewable Project Regulation</i>; however, it could have also been designated reviewable by the Minister of Environment, or voluntarily "opted into" by the proponent.</li> <li>About 95% of all EA become reviewable through the stated regulation, which appear to be very high and may miss many activities that have the potential to cause significant adverse effects. While the Minister has discretion to designate an activity as reviewable, the BC EAO advises that this discretion has not been exercised to date</li> </ul> <p style="text-align: right;">(Haddock, 2010).</p>
<i>Scoping</i>	<ul style="list-style-type: none"> <li>The scope of the Panel's assessment of the Project considered all the factors listed in subsections 16(1)(a) and 16(2) of the <i>CEA Act</i> (1992). This appeared to be sufficient to address all the potential adverse environmental effects of the undertaking; however, given the current framework of the federal EA process, federal decision-makers are granted considerable discretion over this process, there is considerable apprehension about how to scope projects properly, and not all projects are scoped so comprehensively.</li> <li>The assessment of the Project took a broad scoping approach; however, as the <i>CEA Act</i> leaves federal decision-makers with the responsibility of resolving the tension between narrow and broad scoping perspectives on a case-to-case basis, the Project could have been subject to a narrowed EA with a lower level of scrutiny.</li> </ul> <p style="text-align: right;">(Doelle, 2008)</p>	<ul style="list-style-type: none"> <li>Section 11 of the <i>BC EAA</i> (2002) gave the executive director of the BC EAO broad discretion to determine the assessment scope for the Project.</li> <li>A lack of scoping specifications in BC's EA legislation and regulations, and negotiable scoping provisions, give the BC EAO and its executive director broad discretion and flexibility on fundamental EA components.</li> <li>This can compromise the comprehensiveness and consistency of respective EAs, and can further entrench the notion the EA may simply be regulatory hoop jumping.</li> </ul> <p style="text-align: right;">(Haddock, 2010)</p>

<p><b>Public Engagement</b></p>	<ul style="list-style-type: none"> <li>Responsibility to engaged the public rested with the Panel, and was initiated by the RAs and the Minister of Environment; however, this public engagement responsibility was viewed as a privilege that was at the discretion of these decision-makers, who may or may not understand its value.</li> <li>EA is not an effective planning tool when decision-makers have the right to exclude interested parties from the EA process based on their exercise of discretion.</li> </ul> <p>(Doelle, 2008)</p>	<ul style="list-style-type: none"> <li>Public engagement throughout BC's assessment of the Project was mandated through <i>Public Consultation Policy Regulation</i>; however, these are only general guidelines, and the BC EAO is afforded significant discretion over handling public engagement provisions.</li> <li>Pubic input should be central to an effective EA; however, given BC EAO's broad and inconsistent discretion to manage public engagement, it is unclear as to how and whether public input actually effects final EA decision.</li> </ul> <p>(Haddock, 2010).</p>
<p><b>Alternative Assessment</b></p>	<ul style="list-style-type: none"> <li>The Panel evaluated the benefits and risks of various alternative options that were presented by the proponent; however, the Panel was able to decide if the proponent's alternative assessment was reasonable, without carrying out its own comprehensive comparative analysis.</li> <li>When federal authorities, which can include the Panel and RAs, are afforded discretion over their consideration of alternatives, it is reasonable to expect that there will be some motivation for them to sacrifice comprehensiveness for reduced time and cost, and control over the outcome.</li> </ul> <p>(Doelle, 2008)</p>	<ul style="list-style-type: none"> <li>The BC EAO reviewed the proponent's alternatives assessment; however, despite noting several flaws with alternatives assessment, the BC EAO accepted the proponent's evaluation without a full examination of rationale behind proponent's conclusions.</li> <li>The requirement for alternatives assessments is at the discretion of the executive director; however, most alternative assessments are triggered through the <i>CEA Act</i>.</li> <li>When alternative assessments are undertaken by the BC EAO, the exercise is discretionary and vague, and not based on subjective judgment criteria.</li> </ul> <p>• (Haddock, 2010)</p>
<p><b>Final Decision</b></p>	<ul style="list-style-type: none"> <li>In the case of the federal EA for the Project, which was administered through a panel review, an RA could only make a final project decision with the approval of the Governor in Council.</li> <li>For the respective assessments of the Project, the allocation of the critical decision-making responsibility, to allow or deny project approval, rested with elected officials in the political realm.</li> <li>The final decision should rest with elected government decision-makers, with the existing requirement that any deviation from the recommendation of the BC EAO or Panel be identified and explained.</li> </ul> <p>(Doelle, 2008)</p>	<ul style="list-style-type: none"> <li>In the case of the provincial EA for the Project, which was administered by the BC EAO, the Minister of Environment had the final discretion to approve the Project.</li> </ul>
<p><b>Follow-up and Compliance</b></p>	<ul style="list-style-type: none"> <li>If the Project was approved, The RAs would take primary responsibility for ensuring follow-up and compliance, given that they would have ongoing decision-making responsibilities and involvement with the project.</li> <li>As the <i>CEA Act</i> (1992, 2002) does not specify how the follow-</li> </ul>	<ul style="list-style-type: none"> <li>The BC EAO would responsible for overseeing the approved Project to ensure that post-certification issues are properly addressed (BC AG, 2011).</li> <li>The BC EAO predominantly relies on "proponent self-monitoring" and "complaints monitoring" to acquire information about compliance and enforcement (BC EAO, 2011a).</li> </ul>

	<p>up program is to be designed, what information needs to be collected, and what action is required and by whom if unexpected consequences are identified, it represents another component of the federal EA process where broad discretion is given to the proponent, the RAs and other federal decision-makers.</p> <p>(Doelle, 2008)</p>	<ul style="list-style-type: none"> <li>• The BC EAO the BC EAO does not have a field presence, or a realistic compliance and enforcement strategy</li> </ul> <p>(Haddock, 2010).</p>
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**Source:** Doelle, 2008; Haddock,2010

**Table G.3: Collaborative Planning Evaluation Criteria**

<b>CP Process Best Practice Principles</b>	<b>Discussion</b>	<b>CP Outcome Criteria</b>	<b>Discussion</b>
<b><i>Purpose and Incentives</i></b>	<ul style="list-style-type: none"> <li>The process should be driven by a shared purpose and provides incentives to participate and to work towards consensus in the process.</li> </ul>	<b><i>Agreement</i></b>	<ul style="list-style-type: none"> <li>The process should reach an agreement that is accepted by all parties.</li> </ul>
<b><i>Inclusive Representation</i></b>	<ul style="list-style-type: none"> <li>All parties with a significant interest in the issues and outcome should be involved throughout the process.</li> </ul>	<b><i>Perceived as Successful</i></b>	<ul style="list-style-type: none"> <li>Stakeholders should perceive the process and outcomes as successful.</li> </ul>
<b><i>Voluntary Participation</i></b>	<ul style="list-style-type: none"> <li>Parties who are affected or interested should participate voluntarily and committed to the process.</li> </ul>	<b><i>Conflict Reduced</i></b>	<ul style="list-style-type: none"> <li>The process should reduce conflict.</li> </ul>
<b><i>Self-Design</i></b>	<ul style="list-style-type: none"> <li>The parties involved should work together to design the process to suit the individual needs of that process and participants.</li> </ul>	<b><i>Superior to Other Methods</i></b>	<ul style="list-style-type: none"> <li>The process should be perceived as superior to alternative methods.</li> </ul>
<b><i>Clear Ground Rules</i></b>	<ul style="list-style-type: none"> <li>As the process is initiated, a comprehensive procedural framework should be established, which includes clear terms of references and operating procedures.</li> </ul>	<b><i>Innovative and Creative</i></b>	<ul style="list-style-type: none"> <li>The process should produce creative and innovative ideas and outcomes.</li> </ul>
<b><i>Equal Opportunity and Resources</i></b>	<ul style="list-style-type: none"> <li>The process should provide for equal and balanced opportunity for effective participation of all parties.</li> </ul>	<b><i>Knowledge, Understanding and Skills</i></b>	<ul style="list-style-type: none"> <li>Stakeholders should gain knowledge, understanding, and skills through their participation.</li> </ul>
<b><i>Principled Negotiation and Respect</i></b>	<ul style="list-style-type: none"> <li>The process should operate according to the conditions of principled negotiation including mutual respect, trust, and</li> </ul>	<b><i>Relationships and Social Capital</i></b>	<ul style="list-style-type: none"> <li>The process should create new personal and working relationships, and social capital among participants.</li> </ul>

	understanding.
<b>Accountability</b>	<ul style="list-style-type: none"> <li>The process and its participants should be accountable to the broader public and their own constituencies</li> </ul>
<b>Flexible, Adaptive, Creative</b>	<ul style="list-style-type: none"> <li>Flexibility should be designed into the process to allow for adaptation and creativity in problem solving.</li> </ul>
<b>High Quality Information</b>	<ul style="list-style-type: none"> <li>The process should incorporate high quality information into decision-making.</li> </ul>
<b>Time Limits</b>	<ul style="list-style-type: none"> <li>Realistic deadlines and milestones should be established and managed throughout the process.</li> </ul>
<b>Implementation and Monitoring</b>	<ul style="list-style-type: none"> <li>The process and final agreement should include clear commitments to implementation and monitoring.</li> </ul>
<b>Effective Process Management</b>	<ul style="list-style-type: none"> <li>The process should be coordinated and managed effectively and in a neutral manner.</li> </ul>
<b>Independent Facilitation</b>	<ul style="list-style-type: none"> <li>The process should use an independent, trained facilitator throughout the process.</li> </ul>

<b>Second-Order Effects</b>	<ul style="list-style-type: none"> <li>The process should produce second-order effects including changes in behaviors, spin-off partnerships, umbrella groups, collaborative activities, new practices and/ or new institutions. Participants should be willing to work together on issues or projects outside the process.</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>The process should produce improved data, information, and analyses through joint fact finding that stakeholders understand and accept as accurate.</li> </ul>
<b>Public Interest</b>	<ul style="list-style-type: none"> <li>The outcomes should be regarded as just and serve the common good or public interest, not just those of participants in the process</li> </ul>
<b>Understanding and Support of CP</b>	<ul style="list-style-type: none"> <li>The process should result in increased understanding of, and participants support for, collaboration.</li> </ul>

**Source:** Based on the original criteria created by the Sustainable Planning Research Group at Simon Fraser University. Frame et al. 2004; Gunton et al. 2010; Cullen et al. 2010; and, Kennedy, 2012, also used these criteria for their respective evaluations.

**Table G.4: Addressing the Shortcomings of the Project EAs Using CP Good Practices**

EA Best Practice Criteria	Substantive Recommendations for Incorporation Good Practices of CP
<p><b>Clearly Defined Roles and Responsibilities</b></p>	<ul style="list-style-type: none"> <li>• Federal, provincial and First Nations EA representatives should be <i>equally</i> involved in a <i>collaborative joint assessment committee</i>.</li> <li>• All other affected stakeholders, each with separate agendas, concerns and perspectives, should also fully participate in an <i>interactive, collective, and continuous</i> CP based EA.</li> <li>• All affected stakeholders should have the opportunity to derive the <i>thresholds</i> and <i>criteria</i> of the EA, and/or <i>interpret the significance</i> of issues or concern and potential impacts of the Project.</li> <li>• The role of the CEAA and the BC EAO should be to simply <i>facilitate</i> the effective involvement of the most directly affected and vulnerable groups and individuals.</li> </ul>
<p><b>Clearly Defined Decision-Making Criteria</b></p>	<ul style="list-style-type: none"> <li>• Major decisions throughout the EA should be delegated to affected stakeholders, who engage in <i>interest-based negotiation</i> to reach <i>consensus agreement</i> on the outcome of the assessment.</li> <li>• CP based decision-making criteria should focus on key <i>value-based</i> choices and tradeoffs of those most affected by the Project.</li> <li>• Artificial categories of environmental impacts and components should not constrain the joint-decision making process; rather, the process should take a <i>holistic</i> approach to major decisions throughout the assessment.</li> <li>• Interpretation of <i>impact significance</i> and <i>justifiability</i> should be participative, open, inclusive and transparent (Couch, 2000).</li> <li>• The process should ensure complete documentation of the <i>rationale</i> for all interpretations and conclusions, with direct-ties to decision-making.</li> <li>• The collaborative decision-making process should be consistent with the <i>subjective, qualitative</i> and <i>uncertain</i> nature of significance determination.</li> <li>• The process should <i>minimize</i> the potential for <i>arbitrary</i> choices and biases.</li> </ul>
<p><b>Sound and Clearly Defined Methods of EA</b></p>	<ul style="list-style-type: none"> <li>• The process should be represented by a <i>two-tiered (two-table) collaborative joint assessment committee</i>, where all affected stakeholders engage in <i>joint fact-finding</i> to identify a wide range of potentially significant issues.</li> <li>• <i>Stakeholder bargaining</i> should inform the CP processes within the respective committees.</li> <li>• Major parties should engage in <i>interest-based negotiate</i> using principles of <i>alternative dispute resolution</i>.</li> <li>• <i>Public meetings, workshops, retreats, conferences, roundtables, and focus groups</i> should be the preferred methods of the CP process.</li> <li>• The CP process should be conducive to <i>synergistic</i> and <i>creative</i> interpretations and problem solving methods.</li> <li>• Effective <i>two-way communication, mutual learning</i> and <i>negotiation</i> should become critical EA methods.</li> <li>• <i>Stakeholder value analysis</i>, through the use of <i>surveys, interviews</i> and <i>questionnaires</i>, should identify the range of interests and perspectives.</li> </ul>
<p><b>Adequate and Objective Information</b></p>	<ul style="list-style-type: none"> <li>• <i>Scientific</i> and <i>technical</i> EA methods and analysis should assist the process; however, the interpretation of technical issues and tradeoffs is at the discretion of all the parties involved in the process.</li> <li>• Information derived through the CP approach, which informs major EA decisions, should <i>reflect local community</i> perspectives, goals and aspirations.</li> <li>• <i>Storytelling</i> and <i>traditional knowledge</i> forums should be included so that the process is conducive to the integration of <i>community</i> and <i>traditional</i> knowledge.</li> </ul>

<p><b>Alternatives Assessment</b></p>	<ul style="list-style-type: none"> <li>• The alternative means to undertaking the Project should be viewed from <i>multiple perspectives</i>, consistent with the range of values and interests held by all affected and interested parties.</li> <li>• <i>Reasonable</i> and <i>preferred</i> alternatives should be directly incorporated into the significance considerations and overall joint decision-making process.</li> </ul>
<p><b>Process Efficiency</b></p>	<ul style="list-style-type: none"> <li>• A CP based EA should <i>equally</i> involved all affected parties in a single <i>collaborative joint assessment</i> process.</li> <li>• The CP based EA process can be more efficient than the existing EA process if it can <i>reduce opposition</i> and <i>conflict</i> at the <i>onset</i> of the process.</li> <li>• The process should initially facilitate understanding and dialogue between the government, proponent, and all other interested and affected parties, so that subsequent decision-making components of the EA become more efficient.</li> </ul>
<p><b>Consideration of Cumulative Effects</b></p>	<ul style="list-style-type: none"> <li>• Cumulative effects assessment of the Project should reflect a full range of <i>interest</i> and <i>values</i> held by <i>all affected and interested parties</i>.</li> <li>• The process should focused on major <i>local</i> and <i>regional</i> issues and tradeoffs from multiple perspectives.</li> <li>• The complex task of interpreting the <i>significance</i> of the cumulative effects, should consider broader values and perspectives, and should encompass all valued components.</li> <li>• The process should minimize the potential for <i>artificial</i> and <i>arbitrary</i> cumulative assessment boundaries.</li> </ul>
<p><b>Fair and Equitable Outcomes</b></p>	<ul style="list-style-type: none"> <li>• The process should produce more fair and equitable outcomes if it can be more <i>open, inclusive, and transparent</i> to directly affected and vulnerable individuals, groups, and communities.</li> <li>• The process should avoid <i>discrepancies</i> between the values represented by the significance determinations and effects justifications, and the values of affected and vulnerable individuals, and local and regional communities.</li> <li>• The process should foster local and regional <i>empowerment</i> and <i>democratic-decision making</i>.</li> </ul>
<p><b>Adequate Resources</b></p>	<ul style="list-style-type: none"> <li>• The role of the CEAA and the BC EAO should be to <i>facilitate</i> the effective involvement of those directly affected, and the most vulnerable groups and individuals (e.g. through participant funding).</li> <li>• The role of the CEAA and the BC EAO should be to provide <i>procedural</i> and <i>substantive training</i> for parties to effectively participate in the process, and to train parties to interpret and understand impact assessment research and documentation.</li> <li>• Third parties, such as professional <i>facilitators</i> and <i>mediators</i>, should provide procedural support towards effective collaboration between all affected and interested parties.</li> </ul>
<p><b>Participative</b></p>	<ul style="list-style-type: none"> <li>• The process should offer a <i>higher opportunity for participation</i> that places affected and interested parties <i>central</i>, rather than at the periphery, of the major decision-making points throughout the EA process.</li> <li>• The process should involve all affected and interested parties <i>prior</i> to each EA judgment and decision.</li> <li>• The process should ensure <i>direct</i> and <i>ongoing</i> involvement of all affected and interested parties.</li> <li>• The process should facilitate the involvement of the most <i>vulnerable</i> individuals, groups, and communities that might otherwise be excluded from the process due to procedural or substantive barriers.</li> </ul>

<p><b>Obligations to First Nations Met</b></p>	<ul style="list-style-type: none"> <li>• The process should include a <i>full consideration</i> of First Nations' values, interests, perspectives, rights, worldviews, concerns and knowledge, throughout the entire assessment process.</li> <li>• A <i>two-tiered CP</i> based EA should allow for <i>government to government negotiations</i> between First Nation government representatives and provincial and federal government representatives.</li> <li>• The process should achieve full and direct engagement of First Nations in developing a <i>consensus-based</i> EA outcome.</li> </ul>
<p><b>Monitored and Enforced Compliance</b></p>	<ul style="list-style-type: none"> <li>• The outcome of the assessment should be monitored and enforced by individuals that were <i>directly involved</i> in the EA process.</li> <li>• Affected and interested participants should develop a higher degree of <i>appreciation, knowledge, and understanding</i> around the Project, and should <i>remain invested</i> throughout its entire lifespan.</li> <li>• The process should develop and <i>maintain effective communication</i> between all CP stakeholders beyond the initial collaborative EA.</li> <li>• The local community affected by the Project should be encouraged and empowered to take <i>long-lasting ownership</i> over the long-term outcome of the collaborative assessment.</li> </ul>
<p><b>Features an Appeal Process</b></p>	<ul style="list-style-type: none"> <li>• While Canada and BC do not currently include an adequate appeal process for participants dissatisfied with the EA process or its outcomes, the CP process can develop a plan that is in the <i>public interest</i>, and it is less likely that decision appeals will be pursued.</li> </ul>
<p><b>Adaptive Management and Continuous Learning</b></p>	<ul style="list-style-type: none"> <li>• The process should readily <i>adapt</i> to changing attitudes, values, and perspectives, and to changing local or regional conditions.</li> <li>• The process should <i>immediately</i> seek to correct and resolve misinformation and misunderstanding.</li> <li>• The process should consider lessons and insights from <i>comparable</i> situations.</li> </ul>
<p><b>Democratically Accountable Administration</b></p>	<ul style="list-style-type: none"> <li>• Democratically elected officials should remain the ultimate decision-makers with respect to reviewable projects. However, to ensure democratic accountability, the EA process must be based on CP and shared decision makers. Major decision making authority throughout the EA process should not only be afforded to civil servants. Democratically elected officials must also directly take into account the findings and decisions of affected and vulnerable non-governmental stakeholders.</li> </ul>
<p><b>A Strong Legislative Foundation</b></p>	<ul style="list-style-type: none"> <li>• The structure of the CP based EA regimes should be formally structured through legislation and regulations, which established collaboration as a mandatory and enforceable component of EAs.</li> </ul>

Source: Substantive recommendations for incorporation good practices of CP are adapted from Lawrence, 2005 p. 44 and 45