The Integrated Approach as a Framework for Incorporating Values-Based Information into Environmental Assessment in B.C.

ACKNOWLEDGEMENTS

This report has been supported by an open and dedicated group of people at the Environmental Assessment Office who are actively committed to the continual improvement of environmental assessment in B.C. Though the entire Office has provided input into this research, a small group of individuals have been involved in this work since its inception, and they deserve special thanks:

Chris Hamilton, Project Assessment Director
Michelle Carr, Director of Strategy and Quality Assurance
Autumn Cousins, Project Assessment Manager
Rachel Shaw, Project Assessment Manager
Tim Hicks, Manager of Policy and Project Assessment

This report has also been strongly influenced by the council of my supervisor at the University of Victoria, Dr. Lindsay Tedds. Dr. Tedds provided timely, relevant, and detailed feedback on many drafts of this report, and I appreciate her commitment to developing rigorous research and excellent writing.

A great deal of time has also been invested in this report by other individuals. Thank you to Rebecca Warburton, the second reader from the University of Victoria, for her fresh perspective and the additional value she contributed to this research. Thank you to Emilie Januszewski, a fellow Masters student, for performing a peer-review of this research and providing excellent feedback. Thank you to the academic committee who managed to find time during the summer to participate in my oral defense of this work.

Thank you especially to Rob Horsman for being patient with my constant preoccupation with this research for almost one year.

EXECUTIVE SUMMARY

The Environmental Assessment Office (EAO) assesses proposed major development in British Columbia (B.C.) for significant adverse environmental, economic, social, health, and heritage effects. Industry and practitioners in B.C. have developed more rigorous methods for assessing the quantitative components of this five-pillar approach than for the qualitative components. This paper focuses on identifying EAO's current practice for analyzing social impacts and examines how EAO can provide better guidance to proponents in order to improve the quality, comprehensiveness, and consistency of the qualitative information that is submitted to EAO.

Social impacts can be defined as "the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society …" (Interorganizational Committee on Principles and Guidelines for Social Impact Assessment, 2003, p. 231). Building on this definition of social impacts, it is proposed that social impact assessment (SIA) be formally defined by EAO as:

> "The process of analyzing, monitoring, and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, and projects) and any social change invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment" (Vanclay, 2003, p. 6).

Vanclay's (2003) definition of SIA is exemplary for recognizing the importance of both positive and negative effects; emphasizing not only on prediction and analysis, but also monitoring and management; and focusing on sustainable and equitable outcomes. Together, the definitions of *social impacts* and *social impact assessment* provide EAO with a basis for communicating to proponents and the public about social issues that should be considered as part of an assessment.

The literature identifies three theoretical approaches to SIA:

1. ***The Rational Approach***
   This approach focuses on technical analysis and relies solely on quantitative data. The Rational Approach claims to be strictly neutral and unbiased; however, this claim is problematic because the very nature of social issues may inevitably require subjective judgment by assessors and regulators.

2. ***The Participatory Approach***
   This approach focuses on assessing impacts to social values, as identified through dialogue with the impacted public. The Participatory Approach advocates for the participation of impacted communities in conducting the impact assessment itself. Readily available quantitative data that could add value to assessments is often ignored.

3. ***The Integrated Approach***
   This approach is the result of a trend away from polarized approaches to social impact assessment. The Integrated Approach views the Rational and Participatory Approaches

as complementary rather than exclusive. The Integrated Approach is thus able to capitalize on the benefits of the two polarized approaches.

Of these three approaches, the Integrated Approach provides the greatest ability to capture information about social impacts and support comprehensive, consistent decision-making.

A review of the literature highlights key challenges to and promising practices for conducting social impact assessment. These challenges generally fall into two broad categories: first, there is a lack of methodological guidance available in the field; and second, there are many questions about how to capture values-based social information and present these in a meaningful way to support decision-making. These challenges are not unique to B.C., but are large-scale gaps that occur internationally. At the same time, awareness of promising practices provides direction to proponents and EAO alike by acting as road maps for pursuing "best case scenario" social impact assessments. Challenges and promising practices are further examined through case studies of three projects that have previously received an Environmental Assessment Certificate in B.C. Analysis of the social impact assessments for Galore Creek, Ruby Creek, and the New Fraser River Crossing Projects provides EAO with specific examples of measures undertaken by proponents to incorporate values-based social information into project applications. The jurisdictional scan illustrates how the Integrated, Participatory, and Rational Approaches have been operationalized by the Yukon, New Zealand, and Manitoba.

Based on a comparison of the three theoretical approaches to social impact assessment, EAO appears to be operating primarily upon the Rational Approach to social impact assessment, with elements of the Participatory Approach. This determination is based on the Data Characteristics Matrix, which illustrates that EAO relies largely on quantitative, value-free information validated by experts, rather than on qualitative, value-laden information validated by impacted communities. In order to move towards the Integrated Approach to social impacts, EAO may want to consider developing additional measures to capture and incorporate qualitative, value-laden information through community input. This will likely require new or enhanced methods for consulting and communicating with the public.

The research in this report culminates in five recommendations to EAO:

1. Adopt the Integrated Approach and definitions for s*ocial impacts* and *social impact assessment;*
2. Develop principles and objectives for social impact assessment;
3. Consult the public earlier;
4. Develop new tools for consultation and communication; and
5. Require proponents to demonstrate how public input influenced the selection of VSCs.

These recommendations respond directly to the challenges and promising practices discussed in the literature, as well as the analysis of EAO's current methods of conducting social impact assessment. They also reflect the government's focus on communities, transparent decision-making, and open government (Families First Agenda for Change, 2011).These recommendations are meant to support EAO in its continued pursuit of excellence in environmental assessment.

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AIR – Application Information Requirements

B.C. – British Columbia

CBA – Cost-Benefit Analysis

CEA Agency – Canadian Environmental Assessment Agency

dAIR – Draft Application Information Requirements

EA – Environmental Assessment

EAO – Environmental Assessment Office

EPA – Environmental Protection Agency

GBA – Gender-Based Analysis

IAIA – International Association of Impact Assessment

ICF – Interactive Community Forum

IOCGP – Interorganizational Committee on Principles and Guidelines for Social Impact Assessment

NEPA – National Environmental Policy Act

RPR – Reviewable Projects Regulation

SEAMP – Socio-Economic Adaptive Management Plan

SIA – Social Impact Assessment

THREAT – Tahltan Heritage Resource Environmental Assessment Team

VSC – Valued Social Component

YESAA – Yukon Environmental and Socio-Economic Assessment Act

YESAB – Yukon Environmental and Socio-Economic Assessment Board

1. INTRODUCTION

1.1. Purpose of the Report

The International Association for Impact Assessment (1999) defines environmental impact assessment as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made" (p. 2). While this definition encompasses consideration of social effects of proposed developments, not all jurisdictions include social impacts within the scope of environmental impact assessment.[1] In British Columbia (B.C.), environmental assessments (EAs) are overseen and analyzed by the Environmental Assessment Office (EAO), an agency dedicated to assessing the potential adverse impacts of proposed major development. As part of its mandate, EAO is legislated to consider not only environmental and social impacts of proposed projects, but economic, health, and heritage effects as well. Together these elements form the basis of B.C.'s five-pillar approach to environmental assessment.

In B.C., proponents[2] of proposed projects are required to gather baseline information and conduct studies on potential impacts to the five pillars as a result of a proposed project; this information is then submitted to EAO in the form of a project Environmental Assessment Application. Thus, proponents actually *conduct* the impact assessments and EAO *analyzes* the assessments to determine if and to what extent the proponent has addressed all components of the environmental assessment as required by EAO. Incorporating feedback from experts, stakeholders, First Nations, and the public, EAO then makes a recommendation to decision-makers (The Minister of Environment and one other responsible minister) about whether or not the proposed project should be granted an Environmental Assessment Certificate (EAC). The ministers may also determine that further assessment is required prior to deciding whether or not an EAC should be granted.

Industry and practitioners in B.C. appear to have developed more rigorous methods for evaluating the quantitative components of the five-pillar approach than the qualitative components. This paper focuses specifically on identifying EAO's current approach to analyzing social impacts as assessed in proponent EA Applications and examines how EAO can provide better guidance and direction to proponents in order to improve the quality, comprehensiveness, and consistency of social impact information that is submitted to EAO for analysis. By providing guidance and direction to proponents about how to conceive of social impacts, EAO is likely to experience an improvement in the quality and consistency of SIAs submitted for analysis.

As a field, social impact assessment (SIA) has been plagued by a number of systemic challenges, many of which have been experienced by EAO as it strives to conduct

[1] For example, the Canadian Environmental Assessment Agency does not consider social impacts of proposed development, except where they are the result of environmental impacts.
[2] Note: "Proponent" is the term given to individuals or corporations whose proposed project must undergo environmental assessment.

comprehensive EAs that incorporate all five pillars. These challenges are partly the result of inherent difficulties in identifying, measuring, and mitigating the more qualitative or value-laden aspects of development-driven social change. Despite the difficulties in the field, many practitioners and experts argue that assessment of social impacts is a critical element of a successful EA. Pushchak and Farrugia-Uhalde (2009) argue that all changes to the physical environment drive social change as well; they state "not only does each new project have an impact on its physical and biological surroundings, it also affects the social and economic relations among people and the social and cultural values held by communities" (p. 131).

EAO strives to be a leader in the field of environmental assessment and is seeking to strengthen its approach to analyzing all components of the five pillars. In particular, EAO is aiming to enhance its approach to evaluating qualitative information, which by its very nature tends to be more difficult to integrate into the evaluation of significant adverse effects. EAO also has a key interest in capturing values-based information about social impacts in a way that makes sense to decision-makers and the public and is both methodologically sound and transparent. This report focuses on developing a theoretical framework from which EAO can provide more specific guidance to proponents about the standards for conducting SIA in B.C. This discussion can assist EAO in selecting an SIA methodology that can be followed by proponents and easily understood and communicated to the public. At a broader level, this research supports EAO's objective of enabling good decision-making and sustainable outcomes.

The report focuses on aspects of SIA that the literature has identified as particularly challenging, specifically:

1. *The need for consistent language*
   There is disagreement among academics and practitioners in the field of SIA about the language and approach that should be used in identifying and assessing social impacts. As such, it would be valuable for EAO to establish clear interpretation and a consistent vocabulary for talking about SIA. This paper provides the EAO with a set of definitions and a consistent way of referring to SIA.

2. *The need for a unified approach to SIA*
   Academics and practitioners have been divided between two approaches to SIA: the Rational Approach and the Participatory Approach. This paper highlights the main components of each theory and encourages the use of a third approach: the Integrated Approach. The Integrated Approach relies on both qualitative and quantitative methods to gather and assess information about social impacts.

3. *The need for integration of SIA into EA*
   The literature demonstrates the difficulty of incorporating qualitative information about social impacts into largely quantitative environmental assessments. There are a variety of reasons for this difficulty, including the limited number of practitioners grounded in social science and qualitative research, the challenge of identifying and communicating values-based feedback about a proposed development, and the

difficulty of converting values-based feedback into a defensible decision-matrix that works alongside of technical and scientific data. Despite these difficulties, most new development brings with it some form of social impacts. The literature reflects the need for better tools and methods for systematically integrating SIA into environmental assessments.

4. *The need for designated tools for conducting SIA*
   There are many tools that assist impact assessment practitioners in conducting SIA. This paper provides the EAO with some suggested activities to consider for diversifying its approach to public consultation as part of SIA (see Appendix A).

5. *The need for comparative information*
   The literature emphasizes the value of using previously completed SIAs to inform new assessments. By reviewing completed SIAs, practitioners can develop ideas about what tools work best, and when. In addition to encouraging the use of comparative information on a project-to-project basis, this paper outlines promising practices and lessons learned from academics and practitioners in the field. It also reviews three of EAO's previously completed assessments and highlights how those assessments demonstrate the promising practices discussed in the literature.

These five elements demonstrate both the need for and the importance of a focused examination of SIA as a component of EAs in B.C. As EAO examines its internal practices for assessing social impacts, it is important to keep in mind that many of the difficulties in SIA transcend EAO and apply more generally to the field as a whole.

1.2. Structure of the Report

This report is composed of seven main sections, moving from broad conceptual information to more specific analysis and recommendations for EAO. The main sections of the report are:

1. *Introduction*
   The Introduction discusses the purpose and structure of the report.

2. *Background*
   The Background describes the purpose and objectives of EAO and provides further detail on key opportunities for enhancing SIA in B.C.

3. *Literature Review*
   The Literature Review outlines the major aspects of SIA from both an academic and practitioner viewpoint. This section provides key information for defining SIA and understanding its history, theoretical frameworks, challenges, and promising practices.

4. *EAO Case Studies*
   This section examines three social impact assessments previously completed for proposed developments under assessment by EAO and draws upon the literature to highlight how these assessments demonstrate promising practices. This section is meant to provide "real-life" examples of SIA by referencing projects that are familiar to EAO.

5. *Jurisdictional Scan*
   The Jurisdictional Scan elaborates upon the promising practices and lessons learned in the literature by exploring four examples of legislation and process in other jurisdictions. This section aims to provide a sense of where EAO 'fits' in relation to the practices of other assessment agencies and practices.

6. *Discussion and Analysis*
   This component of this report draws upon previous sections to provide analysis on EAO's current approach to SIA.

7. *Recommendations*
   The recommendations are presented as a range of activities that EAO may consider in order to strengthen and reinforce the practice of SIA as part of EAs in the Province. Recommendations revolve around the importance of selecting a specific theoretical approach to guide and support SIA.

Three appendices are included at the end of this report. These appendices expand upon the material in the report and provide examples and tools that can be used by EAO should it wish to diversify its approach to SIA.

2. BACKGROUND

2.1. The Purpose of the Environmental Assessment Office

The Environmental Assessment Office was created in 1995 with the purpose of conducting environmental assessments (EAs) of proposed major development in accordance with the B.C. *Environmental Assessment Act* (the Act). The Act eliminated the need for various ministries to undertake separate reviews of a proposed project by creating one office to "administer and oversee a single, integrated process to review proposed major projects in B.C." (EAO User Guide, 2009, p. 11). Under the Act, proposed developments are assessed for their potential significant adverse impacts before they are legally allowed to proceed or before existing projects are allowed to be modified. Major development should be interpreted as any project falling within eight specifically identified sectors that exceed the thresholds laid out in the Reviewable Projects Regulation (2002). The eight specific sectors are:

1. Industrial
2. Energy
3. Mine
4. Water Management
5. Waste Disposal
6. Food Processing
7. Transportation
8. Tourist Destination Resorts

The thresholds in the Reviewable Projects Regulation that designate a proposed development as "major" are different for each sector. For example, a proposed new coal mine is defined as major if "during operation [it] will have a production capacity of $\geq$ 250,000 tonnes/year of clean coal or raw coal or a combination of both clean and raw coal" (2002, s. 8(4) (1)). In the Tourist Destination Resorts sector, a proposed new ski resort must undergo assessment if it "has $\geq$ 2,000 bed units, of which $\geq$ 600 must be commercial bed units" (2002, s. 17(4) (b)). Thus, there is no one definition of "major development" that applies to all sectors. A complete list of threshold designations can be found in the Reviewable Projects Regulation (2002).

In B.C., environmental assessments are based on a five-pillar approach; EAO requires proponents to assess potential impacts to environmental, economic, social, heritage, and health components as a result of a proposed development. The goal of an EA is to "address the issues and concerns of all interested parties" and to ensure that if a project is to proceed "it will do so in a sustainable manner" (Environmental Assessment Office, Frequently Asked Questions, para. 6). Once the proponent has conducted an assessment under the direction of EAO, this information is submitted to EAO in the form of an Application for an EAC. Applications are analyzed to determine if any significant adverse effects under the five pillars are likely to occur as a result of the project. In every environmental assessment, EAO draws upon the expertise of a working group assembled to provide advice about

projected impacts. Technical working groups may be composed of representatives from the Canadian Environmental Assessment Agency (CEA Agency), other federal and provincial agencies, local governments, First Nations, and, if applicable, adjacent jurisdictions. During an EA, EAO and the working group provide regular feedback to the proponent about the project Application with the aim of eliminating, reducing, mitigating, or compensating for all environmental, economic, social, heritage, and health issues "such that there are no residual adverse impacts that would prevent an EA certificate from being issued" (Environmental Assessment Office, Frequently Asked Questions, para. 4). Based on this process and analysis of a project Application, EAO's Executive Director makes a recommendation to the Minister of Environment and other responsible ministers about whether or not to certify a proposed project for development or require further assessment.

2.2. Environmental Assessment in B.C.

This overview of B.C.'s EA process is general and does not discuss many of the complexities and nuances of environmental assessment. It is meant only to provide a basis for understanding the process generally, and should not be interpreted as a comprehensive description.

An environmental assessment can take from 16 to 20 months to ten years to complete (EAO User Guide, 2009, p. 18). The EA process is divided into three stages:

1. **Pre-Application**: during this stage, EAO reviews the proponent's project description and determines whether or not a project is reviewable under the Act. If a project is determined to be reviewable, the EAO issues a Section 11 Order to proponents, laying out the methods and scope of the assessment. EAO and the proponent then work together to develop the Draft Application Information Requirements (dAIR), which sets out the information that the proponent must include in the Project Application. A formal public comment period on the dAIR is typically held during this stage. There is no time limit on the Pre-Application stage.

2. **Application Review**: during this stage, the proponent submits a Project Application to the EAO based on the requirements set out in the AIR. A technical working group is formed to advise EAO about issues related to the potential impacts of the proposed project. The EAO works with the proponent to attempt to resolve these issues (usually through compensation, mitigation, or redesign). The EAO then reviews the application, analyzes the information, and prepares an assessment report summarizing the findings of the EA and providing a recommendation to ministers. A formal public comment period on the Application is held during this stage to provide an opportunity for the public to comment on the proponent's Application (e.g. the assessment). The EAO is legally required to complete this stage within 180 days of receiving the Project Application.[3]

[3] Note: It is possible for the Minister or Executive Director to extend any time limit by issuing an order under Section 24 (4) of the Act.

3. **Decision**: during this stage, the Minister of Environment and other ministers that may be involved under the Responsible Ministers Regulation review the assessment report and decide whether or not to certify the proposed project or to require further assessment. Ministers consider the findings of the assessment, as well as government objectives for environmental, economic, societal, and community well-being (Environmental Assessment Office, Frequently Asked Questions). Ministers are legally required to complete this stage within 45 days of receiving the assessment report.[4]

This process is displayed below in Figure 1.

Figure 1. The B.C. Environmental Assessment Process.
The Environmental Assessment Office, 2011. Available online: http://www.eao.gov.bc.ca/ea_process.html

2.3. Opportunity Analysis

Is important to reiterate that the potential impacts of proposed developments are assessed by proponents with guidance from EAO; these assessments are then submitted to EAO for analysis and consideration. In light of various challenges related to how social impacts are assessed and analyzed, the research question that was developed collaboratively by the author and EAO to shape the scope of this report was: "what are the key issues, challenges, and approaches to SIA, and how can EAO translate this knowledge into clear, consistent direction to proponents?" However, in the process of responding to this question, it became

[4] Note: it is possible for the Minister of Environment or Executive Director of EAO to extend any time limit by issuing an order under Section 24(4) of the Act.

apparent that greater clarity is needed about the approaches to and methods of SIA before it is possible to develop direction or guidance to proponents. This report therefore focuses on three specific areas that will set the foundation for developing clear, consistent direction to proponents.

First, there is a need for a single, formally recognized definition for the terms *social impacts* and *social impact assessment.* This will reduce ambiguity and divergent interpretations between staff internally at EAO and more broadly amongst the public, stakeholders, and proponents. These definitions are the starting point for any discussion on SIA, and are the foundational element of a rigorous process for considering social impacts as a component of environmental assessment.

Second, EAO has not identified a common, agreed upon approach for how proponents should conduct SIAs or present social impacts as part of an EA Application. Currently, little written guidance is available to proponents from EAO about how social impacts should be identified and assessed. In the AIR Template, EAO instructs proponents to identify Valued Social Components (VSCs), which are "activities or sites of social and cultural importance including, but not limited to, land and resource use, First Nation community interests, and other features or indicators of community well-being and quality of life" (Environmental Assessment Office, Application Information Requirements Template, p. 18). In essence, VSCs are specific social values that are selected as major components of the assessment. In recognition that every proposed project is different and that affected communities are unique, EAO has historically refrained from prescribing standard VSCs that must be considered as part of each EA. However, the social component of EAs could be strengthened through the provision of clearer direction to proponents about *how* VSCs should be identified and assessed. In addition, the adoption of a specific theoretical approach will provide a framework in which EAO can situate itself and explain its analysis to the public, stakeholders, and proponents. It is, therefore, important for EAO to select and communicate a guiding theoretical approach with associated methods and tools, as this will increase the consistency between SIAs submitted to EAO.

Third, there is a need to develop EAO's internal capacity for understanding, examining, and analyzing social impacts and qualitative information more generally. As EAO strives to enhance its consideration of social impacts, this must be accompanied by a similar enhancement in staff training and EAO access to experts in social impacts and public consultation. This will be critical to the success of any efforts to enhance SIA, as it is the staff who work directly with proponents and who will be responsible for translating any theoretical approaches into common language and practical guidance that is useful to proponents, working groups, stakeholders, the public, and internally to EAO. Thus, if a new theoretical approach, methods, and tools for conducting and analyzing SIA are adopted by EAO, staff will likely need to be involved in the process.

Discussion of these three opportunities to enhance B.C.'s approach to SIA will be considered in light of the broad challenges and promising practices in the field that will be highlighted in the Literature Review. By providing EAO with a theoretical grounding in

SIA, this report will assist EAO in creating future direction to proponents for conducting rigorous SIAs.

2.4. Summary

Environmental assessment in B.C. aims to ensure that the reasonable concerns of all interested parties are addressed to the extent possible and sustainable development is fostered in the Province. In B.C., proponents cannot receive an Environmental Assessment Certificate until ministers are satisfied that they have assessed the potential adverse environmental, economic, social, health, and heritage impacts of their proposed project and these have been analyzed by EAO. Within EAO's five-pillar framework, the assessment and analysis of social impacts has been identified as an area for improvement and opportunity. The Opportunity Analysis highlighted the opportunity for EAO to:

1) Adopt a single, formally recognized definition for the terms *social impact* and *social impact assessment*;
2) Select and communicate a guiding theoretical approach that should be used by proponents in conducting SIA and that will guide EAO in analyzing SIAs; and
3) Build internal staff capacity and relationships with experts in various social fields to support the use of new methods for assessing and analyzing SIA.

This report focuses on addressing these three issues and enabling EAO to provide clearer and more consistent direction to proponents about how SIAs should be conducted and how impacts should be assessed.

3. LITERATURE REVIEW

This section presents a summary of the literature on a number of key questions relating to SIA. Specifically, it explores the notion of social impacts, provides a working definition of SIA that EAO can use internally and with proponents, and discusses the three theoretical approaches to SIA along with their respective strengths and weaknesses. This section culminates in a discussion about the challenges and promising practices that are reflected in the literature on SIA.

The purpose of this section is to provide EAO with the theoretical grounding to select an approach to SIA that can be used to provide guidance to proponents about how social impacts should be identified and assessed and to EAO staff about how social impacts should be analyzed. It also aims to situate EAO's practice of SIA within the broader field of practice, and in so doing, provides important context, concepts, and ideas that can be used to strengthen and build on EAO's current approach to SIA.

3.1. Methodology

The literature review was conducted through a systematic analysis of peer-reviewed publications and practitioner publications that draw on case studies and experiential learning. Much of the literature was taken from the two major journals on impact assessment, *Impact Assessment and Project Appraisal* and *Environmental Impact Assessment Review*. The literature review is also firmly grounded in the writings of seminal authors in the field, including C. J. Barrow, Frank Vanclay, Stewart Lockie, and Rabel Burdge.

The literature review has been broken down into sub-sections that focus on laying the groundwork for an enhanced approach to SIA in B.C. Sub-sections illuminate the history, objectives, approaches, and complexities of SIA as a field.

There are a number of concepts discussed in the SIA literature that are not included in this literature review. The major omissions in this literature review are:

1. Specific approaches to conducting SIA with First Nations populations.
2. Analysis and evaluation of gender-based analysis (GBA) as a tool for and indicator of social impacts.
3. Consideration of cost-benefit analysis (CBA) as a tool for and indicator of social impacts.
4. Consideration of income-disparity analysis as a tool for and indicator of social impacts.

These omissions do not reflect any preferences on the part of the researcher or EAO, but were made to limit the scope of the research and focus the report on foundational issues.

3.2. Milestones in the History of SIA

The field of SIA is rooted in early research conducted by social scientists in the 1950s. As the field developed, it was propelled by the passing of the *National Environmental Policy Act* (NEPA) in the United States in 1969 (Taylor et al., 2004, p. 1). NEPA required federal agencies undertaking development to file an environmental impact statement outlining "the impacts of the project on the environment, including the 'human environment'" (Burdge, 2002, p. 6). In the mid-1970s, the study of social impacts started to coalesce under the rationale that if social and economic impacts of development could be identified in anticipation, negative impacts might also be prevented (Barrow, 2000, p. 2). Canada mirrored the US, creating policy guidelines for environmental assessment in 1973, and adopting the *Canadian Environmental Assessment Act* in 1995.

SIA is often undertaken alongside or as a component of environmental assessment; in fact, the International Association for Impact Assessment (IAIA) (1999) includes social impacts in its definition of environmental impact assessment.[5] However, though many regulators and practitioners recognize the critical linkage between environmental and social impacts, the study of social impacts has historically been overshadowed by an emphasis on environmental impacts (Burdge, 2002, p. 3). Lockie (2001) has even gone so far as to nickname SIA the "poorer cousin" of environmental impact assessment (p. 277).

Despite SIA's somewhat tenuous past, there are examples in which it has been instrumental in shaping the course of development. In Canada, the Mackenzie Valley Pipeline Inquiry is the benchmark example of how social impacts have influenced the outcome of proposed development (Gamble, 1978; Slocombe et al., 2009, p. 328). The Mackenzie Valley Pipeline project was proposed in the early 1970s and consisted of a pipeline over 2,400 kilometers long that would carry natural gas from under the ocean floor in Prudhoe Bay, Alaska through the Mackenzie Delta in the extreme north and across the Northwest Territories into Alberta and the United States (Berger, 1977). Justice Thomas Berger led the inquiry into the project, and concluded that it should be delayed for at least ten years because of the significance of likely impacts to the economic, social, and cultural livelihood of the native peoples of Northern Canada, including B.C. (Berger, 1977; Gamble, 1978). In his inquiry into the project, Berger emphasized the history of the native cultures of the North, their economic linkages to the land, and the potential for social disorganization as a result of the project (Grey and Grey, 1977, pp. 512-513). The Mackenzie Valley Pipeline Inquiry is historically significant for its demonstration of the value of including impacted populations in the assessment of impacts (Barrow, 2000, p. 12).

In summary, SIA has developed alongside, and somewhat in the shadow of, environmental impact assessment. Although there have been cases, such as the Mackenzie Valley Pipeline Inquiry, in which SIA has been a prominent part of EA, these instances are not the norm.

[5] Note: The IAIA defines environmental impact assessment as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made" (p. 2).

3.3. Defining Social Impacts

Before delving into a discussion about social impact *assessment*, it is necessary to first set the stage through an exploration of what, exactly, is encompassed by the term "social impacts." The Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (IOCGP), a multi-disciplinary committee assembled in the early 1990s to develop guidelines and principles for SIA, defined social impacts as:

> "The consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society … include[ing] cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society" (2003, p. 231).

This interpretation is supported by Vanclay (2003), who stated that social impacts include changes to people's "way of life; their culture; their community; their political systems; their environment; their health and well-being; their personal and property rights; and their fears and aspirations" (pp. 7-8). Vanclay (2002) also made a critical distinction between the terms "social impacts" and "social change." He defined social change as those ongoing shifts in social conditions that occur naturally in all communities over time, while social impacts referred to the lived experience of an individual or community in response to a specific public or private action, often development (Vanclay, 2002, p. 201). This distinction can assist practitioners in delineating the scope for SIAs by eliminating naturally occurring social change from the context of an SIA.

There are many potential social impacts associated with any proposed project. The task for assessors is to delineate those impacts that are most likely to occur and are most important to affected populations. Once assessors have determined key social impacts or VSCs to assess, indicators of those impacts should be identified to predict and monitor project-driven change. This process of selecting VSCs and indicators will be expanded upon in the following discussion about defining SIA.

3.4. Defining and Exploring SIA

3.4.1. A Definition

There is no single, agreed-upon definition of SIA in the literature; rather, there are many definitions, each with their own nuance and emphasis. This section discusses key terminological differences in the literature and provides a working definition of social impacts assessment.

Wolf (1980), one of the earliest authors to define SIA, emphasized the predictive nature of SIA, describing it as "the predict[ion] and evaluat[ion] of the social effects of a policy, programme, or project while still in the planning stage…" (p. 27). While this definition is useful for its simplicity, it neglects some important considerations (such as the direction of impact–positive or negative) that came to be captured in later definitions of SIA. For

example, Dietz (1987) built on Wolf's predictive emphasis to include the notion of community concern, defining SIA as "the identification, analysis, and evaluation of the social impacts resulting from a particular event [whereby there is a]…significant improvement or deterioration in people's well-being or a significant change in an aspect of community concern" (p. 54). This emphasis was mirrored by Buchan and Rivers (1990) who viewed SIA as "a process examining proposed projects, programmes, and policies for their possible effects on individuals, groups, and communities" (p. 97). The definition provided by Buchan and Rivers expanded upon the notion of community concern to capture even more specific impacts to individuals and groups, not just communities. All of these definitions include an emphasis upon the predictive nature of SIA; however, they all vary to some extent upon the role of communities, groups, and individuals in the process.

In 2003, Vanclay proposed a definition of SIA that focused on sustainable and equitable outcomes and recognized the imbedded linkages between social and physical environments. He viewed SIA as:

> "The process of analyzing, monitoring, and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, and projects) and any social change invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment" (2003, p. 6).

This definition is noteworthy for its recognition of the importance of both positive and negative impacts, where typically, greater emphasis has been placed on assessing the negative impacts of development than the positive (Barrow, 2000, p. 78; Taylor et al., 2004, pp. 18-19). In addition, this appears to be the most comprehensive definition in the literature, including a role for not only prediction and analysis, but also for the monitoring and management of impacts. It is because of this comprehensiveness that Vanclay's (2003) definition of SIA is recommended as the working definition for this paper, and indeed, for use at EAO.

SIA is a complex practice with deep-rooted connections to activities in the natural, economic, and health environments. The complexity of SIA is compounded by the unique and diverse manner in which humans respond to change; as Rowan (2009) pointed out, "the very mention of a project may affect people's actions and responses from that point onward ... as people align interests" (p. 187). Because of SIA's focus on people and social systems, it is more useful to approach SIA as a dynamic, evolving process, rather than a static one. This concept of SIA as a dynamic process is reflected in Vanclay's (2003) definition, which calls for the continual management of social impacts as they are experienced by an affected population (p. 6).

SIA, is a broad term that encompasses the potential for human and social change as a result of a proposed development and attempts to define "the difference between the likely futures of the affected human environment *with* versus *without* the proposed action" (IOCGP, 2003, p. 234).The difference between reality with, compared to without, the

project has been termed "*actual social change*" (Pushchak and Farrugia-Uhalde, 2009, p. 141).

Having defined SIA, it must be pointed out that debate exists over the most appropriate term for what this paper refers to as "social impact assessment." Some researchers have proposed that the field be called simply "social assessment" (Clifford, 1998; Taylor et al, 2004). However, Barrow (2000) argued that the term "social assessment" refers only to the gathering of baseline data of current social structures, whereas "social impact assessment" entails the process of using this baseline data to forecast into the future and attempt to predict likely impacts (p. 3). This anticipatory element of SIA brings with it inherent value because it enables efforts to mitigate potential adverse impacts. SIA has also been referred to as "socio-economic assessment," a term that Lockie (2001) argued undermines the distinct theoretical and methodological approaches that must be used in the evaluation of social and economic impacts (p. 277). Other terms that have been used to describe SIA are human ecology, socio-technical assessment, social appraisal, and social soundness analysis (Burdge, 2002, pp. 5-6). These terms are not widely used, but are mentioned simply to bring attention to the range of terminology that exists in the field. This report uses only the term "social impact assessment," as interpreted by Vanclay (2003) in the definition provided above (p. 6).

3.4.2. The Objectives of SIA

In order to build on and expand our understanding of SIA, it is critical to explore not only its definition, but also its objectives and driving purpose. The objectives of SIA have been enunciated in a number of different ways, but with a common underlying emphasis on ensuring the sustainability of social systems. Wolf (1980), one of the early authors in the field, asserted that SIA seeks "to make public (and private) decisions that will look good in fifty years, after the evaluative criteria by which [SIAs] are judged has changed" (pp. 31-32). He discussed at length some of the challenges that accompany this objective, specifically challenges related to the role of community values, the difficulty in acquiring adequate knowledge, and the various methods that can be used for conducting SIA. These challenges will be discussed at greater length further in the section Challenges and Shortcomings of SIA. Again, with an emphasis on sustainability, Vanclay (2003) stated that the objective of SIA is "to ensure that development maximizes its benefits and minimizes its costs, especially those costs borne by people, including those in other places and those in the future" (p. 7).

Other objectives statements seem to revolve around the notion of supporting social norms and identity, while fostering community empowerment. For example, Lockie (2001) argued that SIA aims to incorporate *values* into the decision-making process. He stated that SIA considers values related to the "sort of social and natural environment people want to live or work in, their livelihood aspirations, lifestyle goals, sense of cultural identity, and aesthetic judgments" (2001, p. 282). Similarly, Barrow (2000) explained the objectives of SIA through a focus on collective learning and community growth, stating that the goal of SIA is to "help individuals, groups, organizations, and communities understand possible social, cultural, or economic impacts of change" (p. 2). This statement of objectives views

community involvement as a means of building social capital. Both Lockie and Barrow's interpretation of objectives highlight the value-laden nature of SIA and the importance of capturing the specific concerns and interests of affected populations for each project setting.

The literature is more unified about the objectives of SIA than about its definition. There is fairly strong consensus in the literature that SIA is a predictive tool for facilitating sustainable, long-term decision-making that reflects the desires and concerns of affected populations. In general, SIA aims to support socially sustainable outcomes of new development in a way that reflects community-specific values.

3.4.3. Trends in the Field of SIA

A number of enhancements to the field of SIA have been suggested by both academics and practitioners. Visions for the future of SIA include both general and specific comments about the objectives, approach, and methods of assessment.

As Lockie (2001) argued, the field of SIA has the capacity to expand into a forum for community development by capitalizing on opportunities to develop social capital, collective learning, and participatory decision-making through the SIA process itself (p. 278). In his view, SIA is not limited to its traditional purpose of predicting and evaluating impacts, but is rather a tool that transcends specific projects to assist governments and communities as they plan for the future (Lockie, 2001, p. 278).

It has also been suggested that SIA must become more attentive to impacts generated at the closure-stage of potential projects. Closure conditions "create a special set of social impacts that frequently occur within boom and bust cycles" and can lead to "community decline" (Taylor et al., 2004, p. 48). SIA practitioners are becoming increasingly aware of the importance of community revitalization and mitigation measures focused on minimizing the effects of project closure on impacted communities.

In general, the literature reflects a move away from polarized approaches to SIA and towards an integrated methodology that is equipped to incorporate both qualitative and quantitative information about social impacts. The three main methodological approaches to SIA will be discussed in the following section.

3.4.4. VSCs and Indicators

SIA is often accomplished through the selection of a limited number of key issues that are explored in depth–these issues are what EAO refers to as VSCs. Some common VSCs might be employment opportunities, community growth, traffic and noise, sense of wilderness, education and training, community infrastructure, community structure and dynamics, tourism, or any number of other components that are determined to be of significant importance in a specific project setting. In order to assess impacts to specific VSCs, assessors often define indicators that are able to measure some element of the larger VSC that would not be explicitly measureable in and of itself (Barrow, 2000, p. 79). For

example, if an impacted community values “peace and quiet,” the associated VSC might be “traffic and noise,” and three indicators that could be measured to provide an indication of impacts would be noise pollution, traffic flow, and traffic volume. Current or baseline measurements can be taken on these indicators and compared to the forecasted changes that would occur as a result of the project. This gives assessors an indication of how specific values, like “peace and quiet,” will be impacted as a result of a proposed project.

The process of selecting indicators and even sub-indicators can be very complicated for many reasons, one of which is the difficulty in ensuring that assessors understand the particular social make-up and values of an impacted population. Roche (1999) suggested that VSCs and indicators should be dependent on the nature of the project, and offers two acronyms that can help assessors in selecting appropriate indicators. The SMART acronym describes the more general properties of indicators: they should be specific, measurable, attainable, relevant, and timebound. Specific indicators are those that are likely to be impacted by the project, and are not overly influenced by external factors. Measureable indicators are carefully defined and, if possible, are comparable across groups and projects. The measurable property aims to capture indicators that are both quantifiable and comparable. Achievability speaks to the need for a realistic scope for indicators, so that the information needed to assess each indicator is available to assessors. Relevant indicators are not only relevant to the project, but are also those that can be assessed within the project’s budget and time restraints. Finally, timebound indicators specify the anticipated occurrence of a certain change, thereby allowing assessors and impacted populations to conceive of the change within a specific time of reference (Roche, 1999, 49). By adhering to these properties, assessors can increase the probability that selected indicators will be useful in measuring change over time (Roche, 1999, p. 48). A summary of the SMART properties is provided in Table 1 below.

Property	Definition
Specific	Indicators should reflect those things the project is intended to change, avoiding measures that are largely subject to external influences.
Measurable and unambiguous	Indicators must be precisely defined so that their measurement and interpretation is unambiguous. Indicators should give objective data, regardless of who is collecting the data. Indicators should be comparable across groups and projects, thus allowing changes to be compared and aggregated.
Attainable and sensitive	Indicators should be achievable by the project and therefore sensitive to the changes the project wishes to make.
Relevant and easy to collect	It must be feasible to collect data on the chosen indicators within a reasonable time and at a reasonable cost. Indicators should be relevant to the project in question.
Timebound	Indicators should describe the likely timing of expected changes.

Table 1. SMART Properties of Indicators.
Taken from Chris Roche, *Impact Assessment for Development Agencies: Learning to Value Change*, Nederlandse Organisatie voor Internationale Bijstand, 1999, p. 48.

Roche (1999) presented a second acronym for more specific properties of indicators (p. 49). The SPICED acronym calls for indicators that are subjective, participatory, interpreted, cross-checked, empowering, and diverse. Subjective indicators are based on information drawn from sources that have an experiential or anecdotal relationship with the

indicator (i.e. people with a personal experience in relation to the indicator). This does not exclude the use of objective or fact-based indicators; however, Roche (1999) argued that subjective, experiential indicators can provide information with a higher return-on-investment because of their source's intimate experience with an issue (p. 49). Participatory indicators are selected in partnership with impacted populations, and are based on the assumption that local people are best placed to recognize local impacts. The interpretation of indicators suggests a methodological principle, whereby indicators should always be stated in a way that dispels ambiguity and explicitly explains their intended meaning. Cross-checking is similarly a methodological principle, referring to the importance of comparing various indicators and source materials, and if possible, using different methods to explore a particular indicator. Empowering indicators are those that facilitate dialogue and collective learning through the process of assessing impacts. It is worth noting that for some projects, empowering indicators may add value to the process, not only in relation to EA, but also in the broader context of community development. Finally, diverse and disaggregated indicators are those that reflect the input of a number of different groups and that can be broken down into component parts such that changes to the indicators can be assessed over time (Roche, 1999, p. 49). Table 2 presents a summary of the SPICED indicators.

Property	Definition
Subjective	The source of data for each indicator possesses experiential or anecdotal information that can yield a high return on the assessor's time.
Participatory	Indicators should be developed with those best placed to assess them. This means involving a project's impact population, such as local communities and stakeholders.
Interpreted	Locally defined indicators may not be meaningful to other stakeholders, so they may need to be explained.
Cross-checked	The validity of assessments needs to be cross-checked by comparing different indicators and progress and by using different informants, methods, and researchers.
Empowering	The process of setting and assessing indicators should be empowering in itself and allow groups and individuals to reflect critically on their changing situation.
Diverse and disaggregated	There should be a deliberate effort to seek out different indicators from a range of groups. This information should be recorded in such a way that these differences can be assessed over time.

Table 2. SPICED Properties of Indicators.
Adapted from Chris Roche, *Impact Assessment for Development Agencies: Learning to Value Change*, Nederlandse Organisatie voor Internationale Bijstand, 1999, p. 49.

Together, the SMART and SPICED properties of indicators can assist regulators and proponents in not only the selection of indicators, but also in providing a rationale to stakeholders and the public about how and why certain indicators were chosen rather than others.

3.5. Approaches

3.5.1. Introduction

Armed with an understanding of the meaning of SIA, we can now enter into a discussion about the major theoretical approaches that are reflected in the literature. In the past, there have been two main approaches to SIA: the Rational Approach and the Participatory Approach. The former is primarily product oriented, while the latter is process oriented (Taylor et al., 2004, p. 25). These two approaches are quite polarized, with distinct methodologies and orientations to planning and research. Today, there is a movement away from these polarized approaches, with many practitioners recognizing that "the best progress will be made through a merging of technical (expert) and lay knowledge" (Taylor et al., 2004, p. 31). This merging of technical and lay (public) knowledge has developed into a third approach to SIA, the Integrated Approach.

This section discusses the three approaches to SIA and concludes that the Integrated Approach provides the most rigorous framework for comprehensive assessments that are able to grapple with both fact and values-based information.

3.5.2. The Rational Approach

The Rational Approach[6] to SIA emerged in the 1960s, bringing with it a focus on technical analysis as the justification for decision-making (Noble, 2010, p. 4). The Rational Approach assumes that assessors can define relevant VSCs purely through the study of quantitative data, such as population, demographics, income, or education statistics (Pushchak and Farrugia-Uhalde, 2010, p. 137).

It has been argued that the Rational Approach "commence[s] from the assumption that there exists a single best alternative, that alternatives can be ordered from best to worst, and that choices among alternatives are made by decision-makers on the basis of (often implicitly) a decision rule" (Lawrence, 1993, pp. 4-5). Supporters of the Rational Approach purport that technical analysis can provide SIA practitioners, regulators, proponents, and decision-makers with value-free information that ensures "strict neutrality and scientific evaluation" (Barrow, 2000, p. 31). However, Barrow argued that this statement is fatally flawed: "the assessment process inevitably involves subjective judgment by the assessors" to accommodate "the sheer complexity, fickle nature of social issues, and the unpredictability of human responses" (2000, p. 31). In addition, the examination of value-free information, if it were possible to attain, provides an answer only to the "what" of potential impacts, and not the "why." In order to get at the "why" or the driving reasons for what makes an impact an impact, it is necessary to incorporate some level of contextual or values-based information.

This need for contextual information suggests that experts should not be the only source of data in a SIA. While experts are indeed important for their training and technical

[6] Note: This approach is also referred to as the "Technocratic" or "Analytical" Approach in the literature.

knowledge, they often lack the lived, experiential relationship with a project setting that would allow them to provide the type of subjective or anecdotal information that Roche (1999) recommended in his SPICED acronym (p. 49).

Just as expert opinion does not override the importance of local or anecdotal input, neither does quantitative data provide sufficient information on a project's social context to form the basis of decision-making. This is supported by Barrow's (2000) comments about the difficulty in extracting purely objective, scientific information as part of an SIA, which by its very nature, tends to involve some distinctly qualitative issues (p. 31). Lockie (2001) has argued that "restricting SIA to technical and quantifiable questions misses the point and serves only to privilege some values over others" (p. 282). In this way, the Rational Approach loses its potential for rigour and transparency by operating upon unsound methodological assumptions.

In addition, the Rational Approach supports the use of nomothetic data, that is, data that "seeks to provide more general, law-like statements about social life, usually by emulating the logic and methodology of the natural sciences" (Marshall, 1998, para. 1). While generalizations about social life can be useful, they do not compensate for the value of information and conclusions specific to each project setting. It is often through focused, non-generalized information that many of the questions about the "why" of social impacts can be answered.

The data characteristics of the Rational Approach are summarized below in Table 3.

	Rational Approach
Nature of data	Value-free
Source of data	Expert(s)
Type of data	Quantitative
Slope of data[7]	Nomothetic

Table 3. Data Characteristics of the Rational Approach.
Adapted from C. J. Barrow, *Social Impact Assessment: An Introduction*, 2000, p. 79.

A number of authors discuss at length the reductionistic tendencies of the Rational Approach and the difficulty that this creates for incorporating information about the complex human environment (Lawrence, 1993; Barrow, 2001; Pushchak and Farrugia-Uhalde, 2009). By claiming that it is entirely neutral and unbiased, the Rational Approach

[7] A nomothetic slope reflects known cause-and-effect relationships where it is established that "if x, then y" for a particular set of variables (a hypothetical example might be that if over-wintering habitat is removed, it is always true that caribou will die). On the other hand, ideographic data focuses on that which is unique, distinct, or notable within a specific context. With ideographic information, relationships between variables are not known (a hypothetical example might be the relationship between a new mine development and community identity–there is no known cause-and-effect relationship between these two variables. The relationship, and therefore the slope, will be different for each community). Because of the nature of nomothetic and ideographic information, the source of information for determining slope will be different. A nomothetic slope can be determined by establishing a generalizable, cause-and-effect relationship, whereas an ideographic slope must be determined through input from people who know and understand what is unique within a specific context.

ignores its own procedural and methodological assumptions and disregards the unavoidable role of value-judgments as part of SIA.

Indeed, a review of current literature elicits more criticisms of the Rational Approach than support. Despite these criticisms, the Rational Approach continues to be used, likely because of the many challenges to SIA that make the simplicity of the Rational Approach attractive. Jurisdictions operating under this Approach can be recognized by their reliance upon quantitative or numerical data as the foundational–and sometimes the only–grounding for SIA. An example of the Rational Approach will be discussed in the Jurisdictional Scan.

3.5.3. The Participatory Approach

Since the 1980s, assessors have turned increasingly towards a more participatory model of SIA, in which assessors become familiar with impacted individuals, groups, and communities and learn about the significance of project-driven change through dialogue (Pushchak and Farrugia-Uhalde, 2009, p. 138). As a result, the data solicited and used in Participatory SIAs tends to be value-laden, and derived from community input. The Participatory Approach is part of the *action research tradition*, whereby the "active collaboration and mutual learning of the social researcher and the affected community produce relevant information that leads to social action" (Pushchak and Farrugia-Uhalde, 2009, p. 138). Participatory impact assessment invites communities to collectively identify what they interpret to be potential significant impacts, and assign values to these impacts for analysis (Pushchak and Farrugia-Uhalde, 2009, pp. 137-8). This approach is driven largely by community development theory, which argues that, "communities are best placed to define their [own] needs and identify appropriate solutions" (Buchan, 2003, p. 168).

The Participatory Approach advocates that affected communities should assist in conducting the actual SIA. For example, scoping of social issues might be completed through public hearings and discussion; baseline data might be gathered through surveys and field studies; and mitigation measures might be identified through citizen advisory groups, workshops, and public meetings (Pushchak and Farrugia-Uhalde, 2009, pp. 139-142). Through a range of participative activities, social learning is thought to engage the public and community stakeholders in identifying the needs and interests of each participant and coming to a collective conclusion about priorities, the significance of impacts, and if and how a proposed project should proceed (Pushchak and Farrugia-Uhalde, 2009, p. 142). In essence, the Participatory Approach sees the public–not developers or regulatory agencies–as identifying the VSCs for each project.

Because of its emphasis on values and community input, the Participatory Approach is based almost entirely on qualitative data. While this supports Roche's (1999, p. 49) recommendation for the use of anecdotal or lived information, it ignores a great deal of valuable, often readily available quantitative data (e.g. employment, population, income, social, and other statistics) that if used, could produce a more comprehensive assessment.

This discussion leads to the conclusion that the Participatory Approach relies primarily on ideographic information as the basis of SIA. Ideographic information "highlights the unique elements of the individual phenomenon," or in other words, focuses on that which is unique, distinct, or notable within a specific social context (Marshall, 1998, para. 1).

The data characteristics of the Participatory Approach are summarized in Table 4 below.

	Participatory Approach
Nature of data	Value-laden
Source of data	Community
Type of data	Qualitative
Slope of data[8]	Ideographic

Table 4. Data Characteristics of the Participatory Approach.
Adapted from C. J. Barrow, *Social Impact Assessment: An Introduction*, 2000, p. 79.

The literature defines a number of benefits of the Participatory Approach, including the facilitation of community understanding; consensus building and conflict resolution; and the ability to account for interrelational complexities (Lawrence, 1993, pp. 8-9). The strengths of the Participatory Approach are weakened, however, by its inability to capture and incorporate important quantitative data into the assessment of social impacts (Becker et al., 2004, p. 188).

3.5.4. The Integrated Approach

Increasingly, academics and practitioners are arguing that the best SIAs can be completed by combining the Rational and Participatory Approach (Taylor et al., 2004; Buchan, 2003, Becker, 2004). The Integrated Approach is seen as "the middle-ground, providing the dynamic and creative setting for a proactive, issues-oriented approach" (Taylor et al., 2004, p. 30). Becker et al. (2004) echoed these sentiments, arguing that "separately, they [Rational and Participatory Approaches] provide a more limited view of social impacts than is achieved using both" (p. 184). These authors support a move away from polarized approaches to SIA and recognize that the Rational and Participatory Approaches can be operationally complementary, rather than exclusive. The value of the Integrated Approach is its ability to build on the strengths of the Rational and Participatory Approaches, while avoiding their respective shortcomings. It could be argued that through the use of quantitative data, the Rational Approach provides causal information about *what* impacts are likely to occur as the result of a particular development. On the other hand, the Participatory Approach focuses on interpreting this quantitative information and examining qualitative information to determine *why* particular impacts are likely to occur. Both the *what* and the *why* are important questions that allow impact assessors to conduct comprehensive assessments. The Integrated Approach accepts the need for both causal and contextual information and provides tools that can assist assessors in gathering it.

There are many options for how the theories and practice of the Rational and Participatory Approaches can be combined to suit the needs of each unique situation. In general, the

[8] Supra note 6.

Rational Approach's nomothetic consideration of broader, quantitative information can be combined with the Participatory Approach's focus on ideographic, community-specific contextual information to produce more rigorous SIAs than would be possible using either of the Approaches alone.

Much of the recent work on social impact assessment has been moving in this integrated direction. The Integrated Approach allows for assessments to be guided by the issues that matter to affected individuals, groups, and communities, and incorporates tools and theories from both the Rational and Participatory Approaches. Taylor et al. (2004) stated that "the best progress will be made through a merging of technical (expert) and lay knowledge" (pp. 30-31). The Integrated Approach provides a theoretical grounding from which to begin this process of merging expert and lay knowledge, while also being flexible to the unique context and needs of each project setting.

3.6. Challenges and Promising Practices of SIA

3.6.1. Introduction

The literature identifies a number of challenges and promising practices in the field of SIA. However, nowhere in the literature are these challenges and promising practices laid out in a thematic way that supports easy reference and discussion. In the process of conducting the literature review, the author came to recognize a number of themes related to challenges and recommended practices; this section was created to pull these themes together in order to highlight clear gaps and opportunities in the field. This section is particularly valuable for EAO in terms of illustrating the shortcomings in the field that are not unique to B.C., but are rather markers of large-scale gaps that occur internationally. It is also useful for providing EAO with a range of promising practices that have been identified in various settings as key components of successful SIAs.

In this section, the term "challenges" refers to reoccurring difficulties, barriers, or questions that experts and practitioners discuss in the literature. Conversely, "promising practices" refers to recommended processes, approaches, activities, or methods that the literature suggests are beneficial for conducting rigorous SIAs. While these terms may have formal definitions in other fields (for example, the Evaluation literature has a very specific definition for promising practices that is distinct from best or smart practices), they are used more generally in this paper and should be interpreted as defined above.

3.6.2. Challenges and Shortcomings

The challenges identified in the literature generally fall into two broad categories. First, there is a lack of guidance available in the field, inhibiting consistency between SIAs and making it difficult to compare different assessments and thereby improve future practices. Second, there are many questions about how to capture values-based social information about projects and present these in a meaningful way to support decision-making. These two themes are evidenced in the following list of challenges.

Challenge 1: The costs and benefits of impacts may not be measureable or quantifiable, and the tools needed to assess many impacts do not exist.

Many practitioners have noted that one of the greatest challenges with SIA is the difficultly in quantifying intangible or indirect impacts, both positive and negative, of potential projects (Vanclay, 2003, p. 7). SIA lacks many of the tools needed to grapple with and incorporate social issues, such as competing interests, beliefs, norms, and aspirations (Lockie, 2001, pp. 278-80). Often, this leads to the more intangible elements of social impact being left out of the SIA analysis, although it is often these elements that are the most important to affected populations.

Challenge 2: SIA can be undertaken in different contexts and for different purposes; this creates difficulties in defining and evaluating it.

Because SIA is used to analyze the social impacts of a range of projects across a range of geographical areas, it is extremely difficult to agree upon a definition of the process and how it should be evaluated (Vanclay, 2003, p. 7). While agreed-upon frameworks might exist within certain sectors or regions (for example, the Yukon Territory presents a framework in its *Guide to Socio-Economic Effects Assessment*), the field of SIA has found it difficult to develop a standardized way of defining and evaluating SIA that works across sectors and geographical boundaries.

Challenge 3: The social impacts of a particular project are interpreted and measured by people's values and understanding of "quality of life."

Because values are not systematic, logical, or objective, and because values vary between individuals and groups, and can change over time, SIA practitioners are confronted with a number of challenges for interpreting and measuring values-based social impacts (Wolf, 1980, p. 32; Hanna, 2009, p. 132). While recognizing the importance of values and the inherent role they play in social impacts, practitioners need to grapple with the question of *what* values are most useful to consider, *how* they should be considered, and *to what end* they should be considered. Some practitioners (Buchan, 2003) suggest that communities themselves should be intimately involved in deciding which values will be considered in each assessment. Such intimate community involvement generally makes assessments longer and more costly, but it is certainly possible for the public and communities to be involved to some degree in selecting the potentially impacted values that will be considered in an assessment.

Challenge 4: There are major gaps in the information available to SIA assessors.

The difficulty of conducting SIAs with limited information is a reoccurring theme in the SIA literature. Much of the discussion around this lack of information can be divided into two categories: 1) limited knowledge about the social norms and potential for impacts in individual communities, and 2) limited knowledge about how SIA improves the outcome for impacted communities and how mitigation measures actually minimize project impacts (Wolf, 1980, p. 35; Lockie, 2001, p. 280). Both categories are problematic.

Challenge 5: There are a number of methodological and theoretical approaches to SIA. It is difficult to evaluate processes and results when approaches are so divergent.

This issue is closely related to Challenge Two, described above (*SIA can be undertaken in different contexts and for different purposes; this creates difficulties in defining and evaluating it*). Cross-referencing and comparative analysis are suggested tools for improving the practice of SIA by studying previous projects to make predictions (Barrow, 2000, p. 35). However, when different methods and theories are being used to conduct assessments, the practitioners' ability to generalize results or trends in the field is limited, as is the extent to which findings from one SIA can be extrapolated to another.

Challenge 6: Many of the individuals conducting SIA are technical scientists who tend to view human impacts as "soft" or immeasurable.

Environmental assessments (and their various components, including SIA) are often conducted by consultants with limited ability to draw on theories of community development, public participation, and social impacts (Barrow, 2000, p. 66). In many cases, this results in SIAs that consider only quantitative indicators and do not reflect the more qualitative or value-laden components of potential impacts.

Challenge 7: There is limited theoretical guidance to identify aspects of the natural, economic, social, and cultural environments that individuals value the most.

This lack of theoretical guidance may spring from the recognition that important values are different for each community and can change based on the political, economic, environmental, and cultural context. This is compounded by the different units of measurement, frameworks, and vocabulary often adopted by the various social scientists involved (Barrow, 2000, p. 66). Despite these difficulties, it is nonetheless inevitable that practitioners and decision-makers will at some point be forced to weigh social impacts and decide whether or not to allow projects to proceed. This challenge could be improved through the creation of theoretical guidance to delineate a range of VSCs or indicators that can form the starting point of any SIA.

Challenge 8: The social impacts of project closure are often downplayed or entirely overlooked.

Most SIAs focus on potential social impacts of project implementation and construction (Barrow, 2000, p. 30). While these phases are important, it is critical to recognize that many social impacts will be felt during a project's closure and post-closure phases. When assessments are scoped narrowly (e.g. consider only implementation, construction, and even operation), they may be more manageable or timely; however, critical information about the lifecycle of the project and its potential impacts is lost if assessors fail to consider impacts of closure and post-closure.

Challenge 9: Greater emphasis and guidance is needed for conducting monitoring and evaluation activities.

Monitoring is intended to track a project's *actual* effects upon the community and measure these against the *predicted* effects. Taylor et al. (2004) pointed out that monitoring is directly tied into the mitigation of social impacts: if impacts are not monitored, mitigation activities cannot be evaluated for their effectiveness or adjusted to respond to unpredicted impacts (p. 74). Taylor et al. (2004) also suggested that participatory social monitoring is an important part of the assessment process. They note that "the involvement of affected groups and local organizations... [allows for] timely and relevant monitoring and the application of monitoring information to the mitigation and management of impacts" (Taylor et al., p. 76). Evaluation is the final step in the SIA process; it is a "systematic, retrospective review of the social effects of the change being assessed and the process that was employed" (Taylor et al., 2004, p. 62). Evaluation should be completed at three stages in the impact assessment process (Casley and Kumar, 1987, p. 106):

1. During project implementation;
2. At project completion; and
3. Years after the project has occurred.

Where evaluation occurs, it is most commonly through the use of quantitative methods, including cost-benefit and cost-effectiveness analysis, but these have generally had unsatisfactory results (Lawrence, 1993, p. 6). This is likely because quantitative evaluation methods do not systematically consider interrelationships or cumulative impacts (Lawrence, 1993, p. 7). It is also not clear who should conduct monitoring and evaluation activities – would this naturally fall to the proponent, the regulator, or a third-party?

3.6.3. Promising Practices

This paper uses the term "promising practice" to refer to processes, approaches, activities, or methods that the literature suggests are beneficial for conducting rigorous SIAs. These promising practices provide direction to the public, proponents, and regulators by acting as road maps for achieving "best case scenario" SIAs. The main barriers to achieving best case scenarios are often time and resources, although as discussed in the Challenges and Shortcomings section, a lack of methodological guidance can also hinder SIAs. This section highlights the major themes for promising practices and draws attention to key practices that can benefit practitioners and regulators as they conduct and analyze SIAs.

Promising Practice 1: SIAs should address the fairness of a project's outcomes.

In light of the reality that projects impact different people differently, it is critical to identify who reaps the beneficial impacts, and who bears the costs of each development project (Pushchak and Farrugia-Uhalde, 2009, p. 145). This might also take the form of highlighting the geographical distribution of impacts. If this discussion unfolds transparently, regulators, practitioners, proponents, and communities will have an opportunity to work together towards the equitable distribution of impacts. If this

discussion does not unfold transparently, regulators and practitioners might appear to favor some groups over others, thereby compromising the mandate and usefulness of SIA.

Promising Practice 2: SIAs should recognize and incorporate the intangible social impacts, even if they are harder to identify and measure.

Though the unquantifiable social impacts of proposed developments can be extremely difficult to measure and evaluate, they should nevertheless be included in the analysis. In fact, unquantifiable impacts, such as beliefs, values, and identity, are often the impacts that matter the most to the public and communities (Pushchak and Farrugia-Uhalde, 2009, p. 145). If intangible impacts are to be included in SIA, practitioners must be intentional about seeking them out. The intangibles may not be explicitly stated or may be disguised as quantitative variables, making them easy to overlook.

Promising Practice 3: SIAs should focus on a limited number of indicators or variables and should be organized in terms of major issues.

There is a large number of possible indicators that can be used to track social impacts (see Appendix B for a list of common indicators). Rather than attempting to track and evaluate the entire suite of indicators, it is important for assessors to focus their analysis on a few key variables that capture both the values of impacted populations as well as relevant quantitative information brought forward by technical experts. In other words, practitioners should be selective about which issues are included in the assessment; as Taylor et al. (2004) stated, "fast and useful social assessments are those that are analytic rather than encyclopedic, and issue-driven rather than general" (p. 14).

Promising Practice 4: The indicators and criteria used in SIAs should be both flexible and structured.

The balance between flexibility and structure is not an easy one to strike, but it is a necessary one. While assessments should not be restricted by prescribed formats or design, some experts feel that indicators and decision-criteria should be standardized for all assessments conducted under a particular regulatory framework. While specific methods can be flexible enough to meet the needs of individual situations, all assessments should be logical and organized by rational analysis (Taylor et al., 2004, p. 18).

Promising Practice 5: Decision-criteria should be identified and published early in the process.

Decision criteria are the "standards used to make judgments about whether environmental effects are positive or negative;" these are critical to define as early as possible, because without them, "'social well-being' can be whatever people assume it to be" (Taylor et al., 2004, p. 19). Because the public will inevitably hold varying interpretations about the impacts of a project, when decision criteria are not publicized, decision-making can appear arbitrary or purely political. This perception can be counteracted by developing and publicizing explicit decision-criteria early on in the assessment process. Taylor et al.

(2004) argued that "since decisions about resource use rest on sets of assumptions about values, it is better to state these precepts clearly and early in decision-making" (p. 20). Decision-criteria could be developed through a combination of public participation methods and quantitative analysis, and may also be based on government-mandated goals and priorities.

Promising Practice 6: SIAs should solicit and reflect input from the impacted public, communities, and stakeholders.

Affected populations should be included throughout the SIA process, from the selection of indicators (or VSCs) through to the monitoring of actual impacts (Buchan, 2003, p. 169; Becker et al., 2003, p. 379). By including the public, communities, and stakeholders in as much of the process as feasibly possible, two benefits can occur: affected populations can develop buy-in to the process and purpose of SIA, and social capital can be built as people work together and come to a greater understanding of issues (Buchan, 2003, p. 169; Putnam, 1993).

Promising Practice 7: Positive impacts should be highlighted along with negative impacts.

By its very definition, SIA encompasses "analyzing, monitoring, and managing the intended and unintended social consequences, both positive and negative, of planned interventions and any social change invoked by those interventions" (Vanclay, 2003, p. 6, emphasis added). However, historically, greater focus has been placed on analyzing the negative impacts of proposed development (Barrow, 2000, p. 78; Taylor et al., 2004, pp. 18-19). This needs to change. Positive impacts may factor into the decision-makers ultimate decision to permit or restrict development, and as such, it is critical that these impacts be included in public discussions and documents for transparency and accuracy.

3.6.4. Summary

The challenges discussed in this section represent a variety of both practical difficulties and theoretical shortcomings, as discussed in the literature. As the field of SIA continues to develop, it will be critical for academics and practitioners to focus on refining some of the major issues hindering the advancement of the field. Perhaps most fundamentally, it will be necessary for the field to coalesce around some general guidelines that are transferrable across sectors and geography, in order to improve the generalizability and comparability of SIAs.

The discussion of promising practices outlines some of the strategies that can be used to assist practitioners and regulatory agencies in conducting equitable, sustainable, and methodologically sound SIAs. Many of the promising practices illustrate the flip side of one or more challenges; for example, Promising Practice 2 (*SIAs should recognize and incorporate the intangible social impacts, even if they are harder to identify and measure*) speaks in response to Challenge 1(*The costs and benefits of impacts may not be measureable or quantifiable, and the tools needed to assess many impacts do not exist*).

While it is critical to recognize the challenges of SIA, in the short term it may be more useful to focus on opportunities for improvement (promising practices), rather than on deficiencies. This may engender greater action or improvement than would a focus on shortcomings.

A summary table of the challenges and promising practices identified in the literature is included in Appendix C.

3.7. Summary

The Literature Review highlights the origins of SIA in North America, beginning in 1969 with the creation of the *National Environmental Policy Act* in the US, and in Canada with policy guidance in 1973 and formal legislation in 1995. In Canada, the Mackenzie Valley Pipeline Inquiry provides a notable example of how anticipated social impacts have influenced the outcome of proposed development.

A clear definition of social impacts and SIA is a critical starting point for regulators and practitioners, allowing for a shared understanding of purpose and goals. This paper adopts the IOCGP's 2003 definition of social impacts, along with Vanclay's (2003) definition of social impact assessment. Together, these definitions provide EAO with language that can be used both internally and externally to ensure all parties have the same understanding of what it means to assess social impacts. The literature also identifies a number of objectives for SIA, all of which revolve around supporting sustainable social systems that recognize and represent the values and concerns of affected populations. The role of VSCs and indicators is highlighted within this discussion on definitions, as the elements that delineate those key issues that will be explored within each SIA. Roche's (1999) SMART and SPICED acronym's present a helpful guide for selecting relevant VSCs and indicators (p. 49).

This discussion leads into the identification and analysis of three theoretical approaches to SIA: the Rational, Participatory, and Integrated Approaches. The findings of the Literature Review suggest that the Integrated Approach provides the most comprehensive framework for incorporating both general, qualitative data and specific, quantitative data into SIAs.

The Literature Review culminates with the consolidation of challenges and promising practices for SIA noted in the literature. This is a valuable discussion that provides context to EAO about common issues across the field along with suggested practices for improving the status of SIA in B.C. While the challenges and promising practices are discussed throughout the literature, nowhere are they summarized together for easy reference as they are in this report.

The Literature Review provides the background for recognizing the strengths and weaknesses of SIA. The next section will consider three case studies of SIAs for projects that have previously received an EAC. The case studies will be examined in light of the challenges and promising practices highlighted by the literature.

4. CASE STUDIES: EXAMPLES OF SIA IN B.C.

4.1. Methodology

This section provides an analysis of three exemplary SIAs that were previously submitted to EAO as part of project applications. The purpose of this exercise is to:

1) Explore SIAs from real-life projects in order to highlight the promising practices discussed in the Literature Review; and
2) Provide EAO with examples of innovative measures used by proponents in order to eliminate, reduce, mitigate, or compensate for social impacts.[9] These measures reflect various promising practices and provide examples to EAO of ways of incorporating the principles of the Integrated Approach into SIA.

The case study examples were not randomly selected, but were identified by EAO and through a high-level scan of previous project applications as providing especially rigorous socio-economic analysis. The focus on exemplary case studies and linkages with promising practices was a conscious choice of the author to focus on illustrating positive activities and opportunities, rather than challenges and barriers. As such, the case studies attempt to demonstrate how values-based social impacts can be systematically considered as part of SIA. Specifically, the case studies demonstrate the importance of selecting relevant VSCs (or indicators), describing and analyzing the social make-up of affected communities prior to development (baseline information), and establishing measures for continued community and stakeholder involvement after an environmental assessment certificate has been granted. Though case study analysis emphasizes promising practices, it is noted where specific measures were undertaken by proponents that counteract or respond to challenges in the literature. Challenges are not, therefore, evaluated in a systematic or comprehensive manner, but are simply noted where they are related to an exemplary measure or practice demonstrated in the case studies.

This section provides EAO with some specific examples of rigorous SIAs that can be modeled and references as EAO works to enhance SIA in B.C.

4.2. Galore Creek Copper-Gold-Silver Project

The Galore Creek Copper-Gold-Silver Project (Galore Creek) is an open pit mine located in Northwest B.C. The EAO issued a certificate for Galore Creek in February 2007. The communities primarily impacted by the project are Stewart, Iskut, Dease Lake, and Telegraph Creek, as illustrated by Figure 2.

[9] Note: It must be noted that no formal evaluation activities have been conducted to determine the effectiveness of such measures in terms of the actual (versus projected) impacts that have been eliminated, reduced, mitigated, or compensated for as a result of these measures.

Figure 2. Map of the Galore Creek Copper-Gold-Silver Project and Primary Impact Communities. Adapted from *Application for Environmental Assessment Certificate*, Rescan Environmental Services Ltd., 2006, p. 1-39.

The four communities of primary impact are small, northern towns with an average population of 430 people; the majority of residents are members of the Tahltan First Nation. Historically, the region has been challenged by boom-and-bust patterns of growth, lack of infrastructure, limited access to services and supplies, and very few opportunities for education and long-term employment (Rescan Environmental Services Ltd., 2006, p. 6-239).

Based on the demographic and social make-up of affected communities, Galore Creek's SIA identified a number of key focus areas, including:

- The Tahltan First Nation and their cultural traditions;
- Economic and employment stability in the region;
- Community health and the ability of social services to adapt to change; and
- Traffic and infrastructure.

In performing the socio-economic impact assessment, the proponent (NovaGold) relied upon both statistical information and input from the Tahltan Heritage Resource

Environmental Assessment Team (THREAT) and a working group focused on socio-economic impacts. A number of innovative measures were undertaken by the proponent in conducting the assessment, both in terms of the actual activities undertaken and the presentation and organization of the information in the Application. Within a project Application, clear communication of the criteria for how VSCs have been selected and defined is almost as important as the selection of VSCs itself. When reading the Galore Creek assessment, it is easy to determine how VSCs were selected: potential VSCs were screened based on secondary research, consultation, interviews, cultural significance, and potential to be impacted (Rescan Environmental Services, 2006, p. 4-14). Not only does the Application provide a rationale for the importance of the VSCs that were selected for assessment, it also lists those VSCs that were excluded and explains the reasons for doing so. The Application also identifies the party or source through which selected VSCs were identified (e.g. Land Users, Stewart, Ministry of Transportation, Tahltan Central Council, Iskut band, secondary research, etc). Finally, the assessment discusses impacts to VSCs based on individual mine components or those elements of the mine development that will drive impacts (e.g. mine, mill, and other facilities; access road to mine site; transportation of concentrate and supplies; workplace conditions; work rotations; and contracting practices). In other words, impacts are considered in light of the specific activity driving them (Rescan Environmental Services, 2006, p. 7-635). This enhances and diversifies the reader's understanding of which mining activities will be likely to drive impacts. Together, these measures ensure that readers of the Application, including EAO, can readily identify the methodology and rationale for the selection of VSCs. These measures set a foundation for understanding and evaluating the remainder of the SIA and support the promising practice of focusing on a limited number of variables or indicators. The proponent's consideration of VSCs supports the promising practice of addressing equity and focusing on a limited number of indicators or components.

Many other measures in Galore Creek's SIA support the need to address the fairness of a project's social outcomes. For example, the Application provides baseline information on each of the communities that make up the local study area; this baseline information is presented in the form of "community profiles" that highlight the unique social make-up of each community. In addition, projected impacts are disaggregated not only by their relation to specific VSCs, but also by their relation to each community. This illustrates how the effects of the project are likely to be distributed to individual communities, rather than examining the local study area as a whole. Disaggregating impacts in this fashion allows EAO and other interested parties to analyze projected impacts across and between communities and to direct mitigation efforts based, among other things, on the distribution of impacts.

As part of the SIA, the Galore Creek proponents also undertook a number of measures to work with First Nations to minimize impacts. For example, NovaGold signed a joint Participation Agreement with the Tahltan Central Council with the intention of minimizing potential adverse impacts from the project and enhancing benefits to the Tahltan Nation (Rescan Environmental Services, 2006, p. 7-703). The proponent also agreed to form a Human Resources Committee with the Tahltan First Nation in order to facilitate dialogue about the Tahltan Nation's human resources objectives, including employment

opportunities, workplace conditions, and training needs (Rescan Environmental Services, 2006, p. 7-709). Both of these partnerships support the promising practice of addressing the fairness of a project's outcomes by demonstrating the proponent's recognition of the likely impacts to First Nations as the primary inhabitants of the local study area. These two measures also support the promising practice of recognizing and incorporating intangible social impacts through the proponent's willingness to facilitate dialogue and develop relationships as part of the SIA and beyond into development. Finally, these measures demonstrate the promising practice of highlighting project benefits, by providing a venue for identifying and capitalizing on opportunities for the Tahltan Nation as a result of the Galore Creek project.

The proponent of Galore Creek also took measures that respond to the promising practice of using both flexible and structured indicators and criteria for assessing impacts. For determining the significance of impacts, the Application not only evaluates impacts based on the six factors for determining significance[10] required by EAO, but also based on two supplementary factors: timing (identifying the project phase during which an impact will commence) and direction (identifying positive, negative, and neutral effects) (Rescan Environmental Services, 2006, p. 7-715). These two additional factors bring an added level of complexity to the analysis of impacts, and help EAO and the public to develop a comprehensive picture of when, how, and by whom impacts are likely to be experienced.

The Galore Creek Application includes a measure that responds to the need identified in the literature for greater emphasis on monitoring and evaluation activities as part of SIA. Specifically, the proponent committed to a continued relationship with the Tahltan Central Council and the Tahltan Heritage Resources and Environmental Assessment Team (THREAT) after the completion of the mandatory environmental assessment (Rescan Environmental Services, 2006, p. 7-705). Through this commitment, the proponent provided a mechanism for ongoing dialogue with potentially impacted communities. While this is not a formal monitoring activity, the proponent's commitment to maintain an open line of communication provides an informal venue for follow-up and monitoring of social impacts.

Table 5 below presents a summary of the key strengths of the Galore Creek SIA and the promising practices that they correspond to. Where there is no corresponding promising practice for a key strength, it may be noted how a particular activity responds to one of the challenges identified in the literature.

Key Strengths – Galore Creek
Promising Practice 1: SIAs should address the fairness of a project's outcomes.
• Presentation of baseline information in the form of "community profiles" illustrating the social make-up of communities near the proposed mine.
• Discussion of VSC impacts for each community, including geographic disaggregation of baseline data and impact projection.

[10] Note: EAO's six factors of significance determination are: magnitude of impacts; geographic extent of impacts; duration and frequency of impacts; reversibility of impacts; probability of impacts; and context of the impacts.

Key Strengths – Galore Creek
• Well-defined primary and secondary impact areas and discussion of social profiles.
• Creation of a joint Participation Agreement between the proponent and the Tahltan Central Council to minimize potential adverse impacts from the project and enhance Tahltan benefits.
• Commitment by the proponent to form a Human Resources Committee with the Tahltan First Nation.
Promising Practice 2: SIAs should recognize and incorporate the intangible social impacts, even if they are harder to identify and measure.
• Commitment by the proponent to form a Human Resources Committee with the Tahltan First Nation.
Promising Practice 3: SIAs should focus on a limited number of indicators or variables and should be organized in terms of major issues.
• Well-defined socio-economic VSCs and transparent criteria for how VSCs were selected.
• Discussion of impacts to VSCs for individual mine components (i.e. mine and mill, access roads, workplace conditions, and work rotations).
Promising Practice 4: The indicators and criteria used in SIAs should be both flexible and structured.
• Analysis of EAO's six factors for determining impact significance[11] and three supplementary factors: timing (identifying the project phase an impact will commence), direction (identifying positive, negative, and neutral effects), and probability of occurrence (nil, low, moderate, unknown).
Promising Practice 7: Positive impacts should be highlighted along with negative impacts.
• Creation of a joint Participation Agreement between the proponent and the Tahltan Central Council to minimize potential adverse impacts from the project and enhance Tahltan benefits.
Challenge 9: Greater emphasis and guidance is needed for conducting monitoring and evaluation activities.
• Commitment by the proponent to continue a relationship with the Tahltan Central Council and the Tahltan Heritage Resources and Environmental Assessment Team (THREAT) following the EA.

Table 5. Key Strengths of the Galore Creek Copper-Gold-Silver Project SIA.
Adapted from *Application for Environmental Assessment Certificate*, Rescan Environmental Services Ltd., 2006,

The measures taken by the proponents of Galore Creek provide some examples of specific activities that respond to the promising practices discussed in the literature. These measures relate to the quality and type of information provided in the Application, but also to the manner in which that information was conveyed to enhance readability. The Galore Creek SIA was particularly strong in responding to the need to address the fairness of a project's outcomes (Promising Practice 1), but also demonstrated attention to a number of other promising practices.

4.3. Ruby Creek Molybdenum

The Ruby Creek Molybdenum Project (Ruby Creek) is an open pit mine located next to Atlin in Northeast B.C. The EAO issued a certificate for Ruby Creek in September 2007. Atlin was the singular primary impact community for this project. Due to the project's rural location, impacts to other communities were deemed to be limited.

[11] Note: EAO's six factors of significance determination are: magnitude of impacts, geographic extent of impacts, duration and frequency of impacts, reversability of impacts, probability of impacts, and context of the impacts.

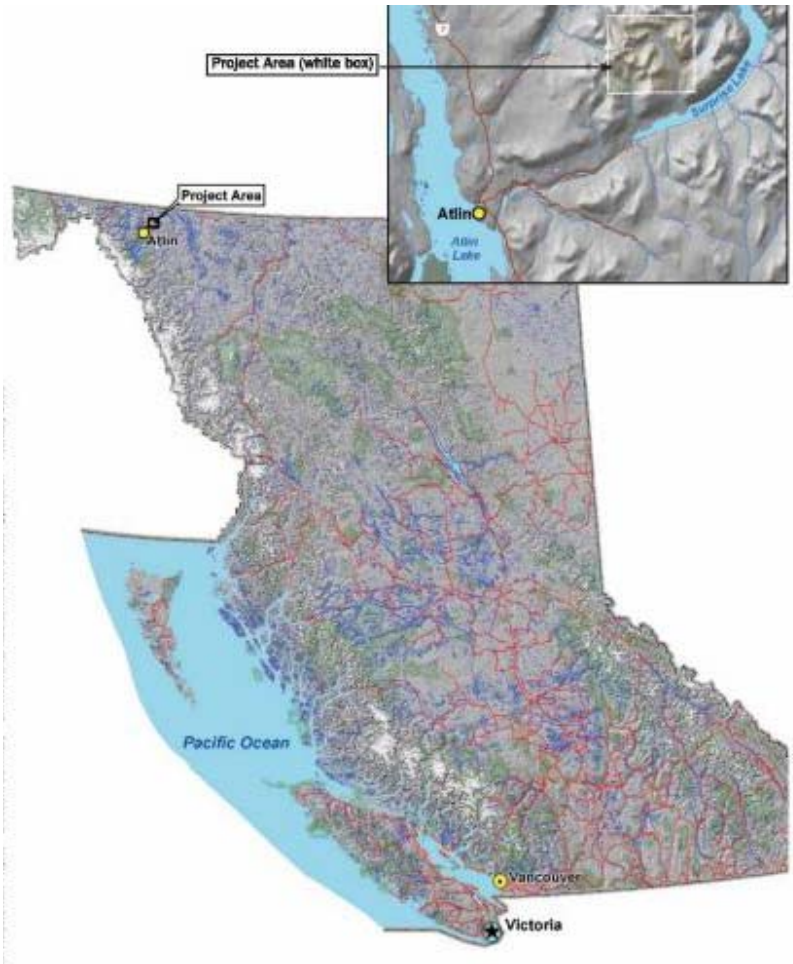

Figure 3. Map of the Ruby Creek Molybdenum Project and Proximity to Atlin.
Adapted from *Environmental Assessment Certificate Application,* Klohn Crippen Berger, 2006, p. 9.

Atlin is a small community with approximately 450 permanent residents. Many residents have chosen to live in Atlin because of its isolation, quiet, and access to pristine natural environments (Klohn Crippen Berger, 2006, p. 415). The community has been challenged, however, by low employment rates and an aging population (p. 415).

Based on the demographic and social make-up of affected communities, Ruby Creek's SIA identified a number of key focus areas, including:

- Community lifestyle and dynamics;
- Economic and employment stability in the region;
- Opportunities for education and training;
- The ability of social services to support population growth; and
- Tourism and recreation.

In performing the SIA, the proponent (Adanac Moly Corp) relied on statistical information as well as stakeholder consultation and field research (p. 403). It is important to note that two Taku River Tlingit First Nation reserves were considered part of the local study area

for the socio-economic studies. A range of measures were undertaken as part of the Ruby Creek assessment to enhance the quality of the SIA and its value to EAO as the evaluating body. Many of these measures relate directly to promising practices recommended by practitioners and scholars. Similarly to the Galore Creek assessment, baseline information is presented in the form of "community profiles" that illustrate the social make-up of the communities near the proposed mine site (Klohn Crippen Berger, 2006, pp. 408-414). This format can help assessors create linkages between the current conditions in the area and forecasted impacts, and in so doing, provides an opportunity to assess which social groups might be most affected by impacts, thus providing an indication of the fairness of the project's outcomes.

One of the most notable measures undertaken as part of the Ruby Creek SIA was the modeling of three socio-economic scenarios to compare possible effects and identify impacts to VSCs for each scenario (Klohn Crippen Berger, 2006, pp. 654-669). The three models assess social impacts based on the potential for: 1) no project effect on the population, 2) small project-related population increase initially with a sustained increase throughout operations, and 3) dramatic increase in population that is sustained over the course of the project. For each scenario, impacts to all VSCs were assessed. The model predicted that scenario 2 (small project-related population increase initially with a sustained increase throughout operations) was most likely to occur (Klohn Crippen Berger, 2006, pp. 667). The modeling of these three scenarios was initiated in response to concerns from the Taku River Tlingit First Nation about possible impacts as a result of an increase in population. The modeling serves as an example of how information and assessment can be used to not only as a tool for illustrating how adverse effects can be minimized, but also as a way of recognizing and responding to the concerns of impacted populations. This measure supports Promising Practices 1 and 2, which emphasize the need for SIAs to address the fairness of outcomes and recognize the importance of intangible social impacts.

The Ruby Creek assessment includes an extensive discussion about Atlin's "social fabric;" that is, its people, attitudes about development, history, and current setting (Klohn Crippen Berger, 2006, pp. 415-417). This section recognizes and helps illustrate to readers some of the specific social characteristics that make Atlin prone to specific types of social impacts. In addition, the assessment contains a discussion about the business, government, and non-government presence in Atlin; this is provided as an indication of the resiliency and diversity of the community's social infrastructure (Klohn Crippen Berger, 2006, pp. 428-429). In turn, this assists the public and EAO to understand the capacity of a population's ability to respond to social impacts. Together, these measures support the promising practice of recognizing and incorporating intangible social impacts into assessments.

In support of the literature's recommendation that SIAs should focus on a limited number of VSCs and that SIAs should reflect input from the public, the Ruby Creek assessment relied extensively on community involvement in the determination of VSCs. Community members were involved in this process through interviews, consultation, the Ruby Creek Liaison Committee, and input from private citizens (Klohn Crippen Berger, 2006, p. 75). Through these activities, the proponents were able to limit the number of indicators considered, while also reflecting the values communicated by impacted people. The

proponent also undertook various other measures to reflect input from the public, including the creation of the Ruby Creek Liaison Committee, which was formed to facilitate dialogue between the proponent and community stakeholders (Klohn Crippen Berger, 2006, p. 409); and partnership with the City of Atlin to create a joint Community Development Plan to provide a mechanism for ensuring that the proponent remained informed of the community's vision for its future (Klohn Crippen Berger, 2006, p. 642).

It is of particular note in the Ruby Creek assessment that a major element of the project design was demonstrably impacted by community feedback. There is a clear connection between the design of the mine's employee village and construction camp and the concerns expressed by the residents of Atlin about the potential social impacts that could accompany "the sudden presence of a relatively large, affluent, male-dominated population" (Klohn Crippen Berger, 2006, p. 648). Based on community concerns, the proponent decided to locate the employee village and construction camp at the mine site, rather than directly in Atlin (Klohn Crippen Berger, 2006, pp. 646-653). The proponent's response in designing the employee village speaks directly to the promising practice of reflecting input from the affected public, communities, and stakeholders.

Finally, as part of the SIA, the proponent committed to creating a Socio-Economic Adaptive Management Plan (SEAMP) following approval of the Application (Klohn Crippen Berger, 2006, p. 608, 643). This accountability measure would provide the public and stakeholders with an action plan for how the proponent would respond in the event that actual impacts differed from predicted impacts. This measure responds to a particular deficiency noted in the literature around a lack of emphasis on monitoring and evaluation activities as part of SIA.

Table 6 identifies and discusses the key strengths of the Ruby Creek SIA in light of the promising practices discussed in the literature. Where there is no corresponding promising practice for a key strength, it may be noted how a particular activity acts in response to one of the challenges identified in the literature.

Key Strengths – Ruby Creek
Promising Practice 1: SIAs should address the fairness of a project's outcomes.
• Presentation of baseline information in the form of "community profiles" illustrating the social make-up of communities near the proposed mine.
• Recognition of linkages between projected impacts and specific socio-economic baseline conditions, providing strong context and continuity.
• Presentation and discussion of three socio-economic scenarios to compare possible effects of the project and identify impacts to VSCs for each scenario.
Promising Practice 2: SIAs should recognize and incorporate intangible social impacts.
• Discussion of Atlin's "Social Fabric."
• Discussion about business, government, and non-government presence in Atlin.
• Presentation and discussion of three socio-economic scenarios to compare possible effects of the project and identify impacts to VSCs as a result of each scenario.
Promising Practice 3: SIAs should focus on a limited number of indicators or variables and should be organized in terms of major issues.
• Extensive community involvement in the determination of VSCs.
Promising Practice 6: SIAs should solicit and reflect input from the impacted public, communities, and

Key Strengths – Ruby Creek
stakeholders.
• Extensive community involvement in the determination of VSCs.
• Creation of the Ruby Creek Liaison Committee to provide a venue for communication with stakeholders in Atlin.
• Proponent partnership with the City of Atlin to draft a joint Community Development Plan.
• Clear connection between the design of the Employee Village and the VSCs.
Challenge 9: Greater emphasis and guidance is needed for conducting monitoring and evaluation activities.
• Commitment by the proponent to write a Socio-Economic Adaptive Management Plan (SEAMP) following approval of the Application.

Table 6. Key Strengths of the Ruby Creek Molybdenum Project SIA.
Adapted from Environmental Assessment Certificate Application, Klohn Crippen Berger, 2006.

Table 6 demonstrates how the Ruby Creek SIA fulfils a number of the promising practices discussed in the Literature Review, and provides some examples of measures that EAO could recommend to proponents for improving the quality of SIAs. The Ruby Creek SIA was particularly strong in the categories of recognizing and incorporating intangible social impacts and soliciting and reflecting input from the impacted public, communities, and stakeholders (Promising Practices 2 and 6). In one instance, it is noted where the proponent undertook a measure that responds to one of the challenges identified in the Literature Review.

4.4. New Fraser River Crossing

The New Fraser River Crossing Project (NFRC) is a 10.5 kilometer transportation adjustment that includes a crossing over the Fraser River in the Lower Mainland. Two options were considered for the crossing: a bridge over 200th Street and a tunnel under Barnston Island. Through extensive study and consultation with the public, the bridge option was selected as the preferred design. EAO issued a certificate for NFRC in August 2004.

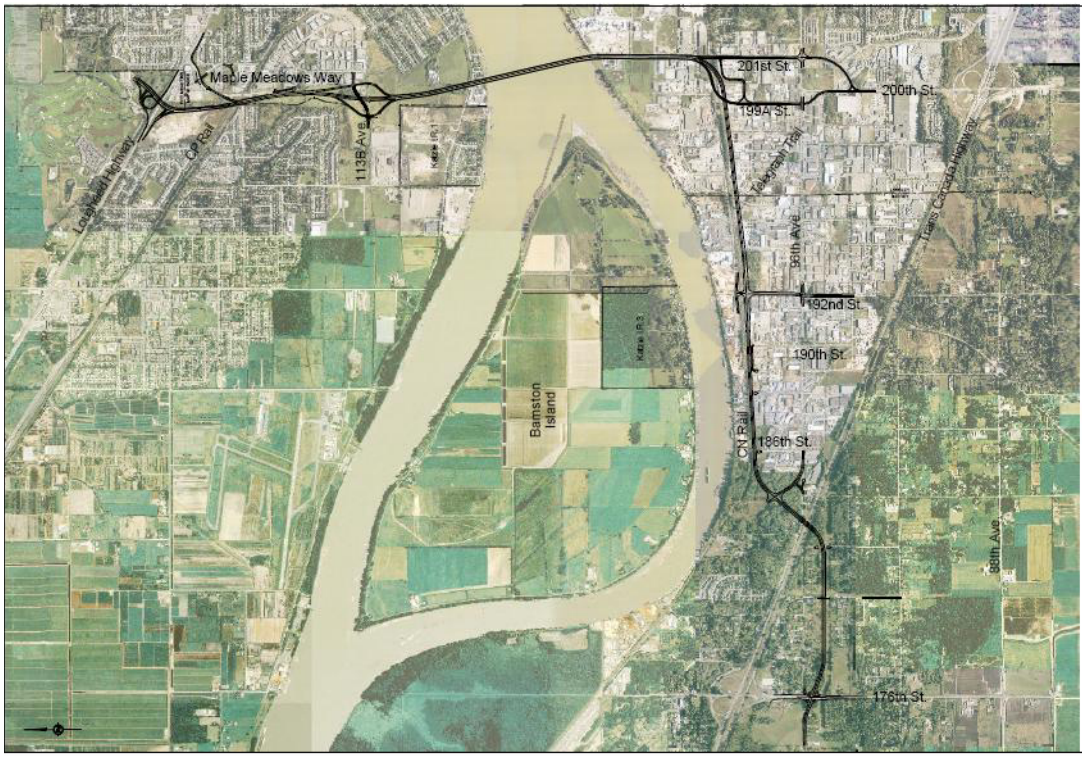

Figure 4. Map of the New Fraser River Crossing Project.
Adapted from *Application for Environmental Assessment Certificate,* Greater Vancouver Transportation Authority, 2003.

Figure 4 illustrates the route of the NFRC project. The primary impact communities were Surrey, Langley, Maple Ridge, and Pitt Meadows. The Katzie First Nation and Barnston Island residents were also extensively consulted because of their proximity to some areas of the transportation alignment. These communities are mostly suburban, bedroom communities of Vancouver, with rapidly growing populations. Many residents have chosen to live here because of the lower housing costs compared to Vancouver (Greater Vancouver Transportation Authority [GVTA], 2003, pp. 5-8, Vol. 1, Sec. C).

Based on the demographic and social make-up of affected communities, NFRC's SIA identified a number of key focus areas, including:

- Potential new housing and commercial development as a result of the project;
- Potential municipal revenue as a result of the project;
- Impacts to transportation and traffic flow during construction; and
- Impacts to various categories of traffic users during and post construction.

In discussing the strengths of the NFRC SIA, it is important to note that the project is somewhat unique in that the proponent (TransLink) is an agency of the Provincial Government, and was therefore driven not only by the need for financial efficiency, but also by the need for public accountability. Consultation was thus a major element of TransLink's impact assessment process. In performing the socio-economic impact assessment, TransLink relied heavily on feedback gathered through public consultation, as well as on statistical information and relevant literature (p. 2, Vol. 3, Sec. D).

Similarly to both the Galore Creek and the Ruby Creek SIAs, the NFRC assessment presents baseline social information in the form of "community profiles" that illustrate the social make-up of communities in the study area (GVTA, 2003, pp. 5-7, Vol. 3, Sec. D). These profiles explore how affected communities are unique and provide an indication of the resiliency and diversity of each community's social infrastructure. The proponent also commissioned BC Statistics to undertake an input-output study to assess the effects of construction across the Province. The input-output model shows the flow of goods and services among various sectors and generates an estimate of the impact of project spending (GVTA, 2003, pp. 40-44, Vol. 3, Sec. D). This study assisted the proponent and EAO in understanding the geographic distribution of impacts across the Province. Together, the use of community profiles and the input-output study assist proponents and EAO in determining the fairness of a project's outcomes.

The NFRC SIA attempts to pointedly acknowledge intangible effects of the project. The Application discusses various elements of potential impacts from a decidedly qualitative perspective. For example, community cohesion is assessed by examining the "degree to which the NFRC project bisects or cuts through neighborhoods" and the "degree to which the use and enjoyment of an individual's home or property is affected (GVTA, 2003, p. 55, Vol. 3, Sec. D). The Application also assessed impacts to the use of community facilities, including outdoor recreational areas, heritage areas, and areas close to schools, specifically in the context of changes in the road access to these areas (GVTA, 2003, p. 56, Vol. 3, Sec. D). In addition to explicitly recognizing where these impacts were likely to occur, the proponent also took action to minimize those impacts (for example, the proponents worked with individuals planning the Trans Canada Trail to use the new bridge as part of the trail so that no dedicated pedestrian crossing structure would need to be built to accommodate the trail) (GVTA, 2003, p. 58, Vol. 3, Sec. D). This impact analysis supports Promising Practice 2, which calls for the incorporation of intangible impacts into SIAs.

The NFRC Application contains a number of elements that support Promising Practice 6 in order to reflect the input from the affected public, communities, and stakeholders. The NFRC description of public consultation efforts is exemplary for its detail, comprehensiveness, and synthesis of themes raised by the public. Each public consultation activity undertaken prior to the submission of the project Application is described in detail and includes discussion of the purpose, methods, and results of each activity (GVTA, 2003, p. 1 & pp. 11-14, Vol. 4, Sec. B). The proponent states explicitly in the Application that they are committed to facilitating "meaningful public involvement" (GVTA, 2003, p. 1, Vol. 4, Sec. B). This type of detail and approach to consultation activities provides EAO with clarity about how and to what extent the proponent sought public and community input as part of the EA. In addition to facilitating rigorous public consultation, the proponent also created a Public Information Line with full-time staff available Monday to Friday to respond to stakeholder and public inquiries over the phone (GVTA, 2003, p. 5, Vol. 4, Sec. B). The proponent's effort to solicit input from affected publics is discussed extensively in the project Application, with reference to how public input actually influenced project planning. For example, the proponent held "neighborhood workshops with Abby Ridge community representatives…to establish an east-west connector

alignment that satisfied the community and reduced the impact of the crossing (GVTA, 2003, p. 44, Vol. 4, Sec. B). Perhaps the proponent's most notable effort to engage with impacted communities and develop a social license to operate was the commitment to create a number of forums for communicating with and including the public in project planning (GVTA, 2003, p. 72, Vol. 4, Sec. D). These forums included a:

- Construction Planning Advisory Committee;
- Construction Traffic Management Plan;
- Project Drop-In Centre for residents and traffic users;
- Communication Plan;
- Community Advisory Design Panels; and
- Landscape Design Plan.

Some of the forums listed above are common elements of many projects. Others forums, specifically, the Construction Planning Advisory Committee, the Community Advisory Design Panels, and the Landscape Design Plan, were created with the express purpose of including members of the public in discussions about the project, and as such, are exemplary. Together, these forums assisted the proponent in maintaining relationships with and hearing from the impacted public and stakeholders. In addition, these various initiatives reflect the proponent's commitment to preventative measures meant to minimize the adverse impacts of development.

The NFRC Application also provides information and analysis on the potential community-specific benefits of the project, including how the project would impact housing units, development cost charges, and municipal and commercial property taxes (GVTA, 2003, pp. 19040, Vol. 3, Sec. D). This type of analysis can assist EAO in evaluating the significance of potential adverse impacts in light other, positive benefits that might reduce or mitigate overall effects of a project.

Table 7 identifies and discusses the key strengths of the NFRC SIA in light of the promising practices discussed in the literature.

Key Strength – New Fraser River Crossing
Promising Practice 1: SIAs should address the fairness of a project's outcomes.
• Presentation of baseline information in the form of "Community Profiles" illustrating the social make-up of communities in the Local Study Area.
• A BC Statistics study, commissioned by the proponent, to assess construction effects of the project across the Province using the BC Input-Output Model.
Promising Practice 2: SIAs should recognize and incorporate the intangible social impacts, even if they are harder to identify and measure.
• Specific attention to qualitative project impacts during construction, including "community cohesion," "use of community facilities," "tolling," and "construction."
Promising Practice 6: SIAs should solicit and reflect input from the impacted public, communities, and stakeholders.
• A comprehensive description of public consultation, including the purpose, methods and results of each activity, and the Proponent's commitment to "meaningful public involvement."
• Creation of a Public Information Line (staffed Monday-Friday, 9-5:00) to respond to stakeholder and public inquiries.

Key Strength – New Fraser River Crossing
• Discussion of how public input actually influenced project planning.
• Commitment by the proponent to create a number of forums for communicating with and including the public, including a Construction Planning Advisory Committee, a Construction Traffic Management Plan, a Project Drop-In Centre for residents and traffic users, a Communication Plan, Community Advisory Design Panels, and a Landscape Design Plan.
Promising Practice 7: Positive impacts should be highlighted along with negative impacts.
• Extensive discussion about the community-specific benefits of the project, including how the project would impact housing units, development cost charges, and municipal and commercial property taxes.

Table 7. Key Strengths of the New Fraser River Crossing Project SIA.
Adapted from *Application for Environmental Assessment Certificate*, Greater Vancouver Transportation Authority, 2003.

The NFRC assessment demonstrated strong performance in the categories of soliciting and reflecting input from the impacted public, communities, and stakeholders (Promising Practice 6), with a number of other examples distributed amongst the other promising practices.

4.5. Summary

These case studies demonstrate a number of the promising practices discussed in the literature and in so doing, illustrate how values-based social impacts can be systematically considered as part of an assessment.

In general, all three of these case studies provided a clear description of the methodology used for identifying and assessing social impacts. This is of critical importance for allowing EAO to assess the comprehensiveness of both content and process. In addition, two of the three case studies (Galore Creek and Ruby Creek) established a measure for monitoring social impacts after completion of the initial assessment.

When viewed together, these case studies collectively demonstrate the greatest response to Promising Practices 1, 2, and 6 (*SIAs should address the fairness of a project's outcomes, SIAs should recognize and incorporate the intangible social impacts even if they are harder to identify and measure,* and *SIAs should solicit and reflect input from the impacted public, communities, and stakeholders*). Promising Practices 4 and 5 (*the indicators and criteria used in SIAs should be both flexible and structured,* and *decision-criteria should be identified and published early in the process*) were the least represented in these three case studies, pointing to a need for greater emphasis on these two activities.

5. JURISDICTIONAL APPROACHES TO SIA

5.1. Methodology

This purpose of this jurisdictional scan is to build upon the literature to illustrate the Rational, Participatory, and Integrated Approaches to SIA. This sections examines the Yukon Environmental and Socio-Economic Board (the Integrated Approach), the Ewan Floodway Project in Hutt City, New Zealand (the Participatory Approach), and the Maple Leaf Pork's hog processing project in Brandon, Manitoba (the Rational Approach). Together, these jurisdictions offer perspective and context for B.C.'s practices in comparison. The jurisdictional scan is meant to provide a broad sense of the different forms that exist for conducting SIA and to offer some comparisons to the process in B.C. The information in this section is based on academic and peer-reviewed articles, but also draws strongly on practitioner and government publications that outline or elaborate upon unique approaches to SIA.

The three jurisdictions were not randomly selected, but were identified through a scan of the literature. Initially, the scan was intended to identify jurisdictions that could be relevant to B.C. based on similarities in economy, population, and demographics. Later, as the literature review began to coalesce around the three theoretical approaches to SIA, these case studies were formally selected because of their ability to illustrate the theoretical approaches.

Many case studies in the SIA literature focus on experiences in the third or developing world. These case studies were not considered because the issues that arise in these instances often focus on forced displacement and human rights issues that are not largely relevant to B.C.

Originally, a fourth study was to be included in this section: SIA in the United States under the *National Environmental Policy Act*. However, upon researching and writing this section, it was determined that this fourth study did not provide additional value in terms of further illustrating the theoretical approaches or the challenges and promising practices. As a result, the discussion on NEPA was removed from this report.

5.2. YESAB: The Integrated Approach

The Yukon Environmental and Socio-Economic Board (YESAB) was created in 2003 to administer the Federal *Yukon Environmental and Socio-Economic Act* (YESAA). Under YESAA, socio-economic effects are defined as, "effects on economies, health, culture, traditions, lifestyles and heritage resources" (Government of Canada, 2003). The Act also identifies one of its purposes as ensuring "that projects are undertaken in accordance with principles that foster beneficial socio-economic change without undermining the ecological and social systems on which communities and their residents, and societies in general, depend" (Government of Canada, 2003). YESAB has been quite proactive in its approach to SIA and has created a number of documents to assist proponents and the public to engage with and support the SIA process.

In 2006, YESAB published an extensive document, *Guide to Socio-Economic Effects Assessment*, which provides in-depth instruction on the methodological and theoretical underpinnings of SIA, describes the SIA process, and provides tools for conducting SIA. Although it is not explicitly identified as such, the Guide reflects the Integrated Approach to SIA and encourages assessors to rely on both existing quantitative data and qualitative feedback from the public and stakeholders in conducting SIAs (YESAB, 2006, p. 15).

Whereas B.C. has not defined a particular theoretical approach to conducting SIAs, YESAB has adopted a six-step model for SIA (YESAB, Socio-Economic Effects Assessment Fact Sheet, p. 2):

1. Determine project scope
2. Determine assessment scope
3. Determine the socio-economic baseline
4. Predict and analyze potential effects
5. Evaluate mitigation strategies
6. Determine significance of potential effects

These steps more or less mirror the structure of most impact assessments in general; however, this model is unique simply because it is a specific process for SIA. This indicates that YESAB considers social impacts to be equally important as environmental impacts. While this may be true in B.C. as well, B.C. considers social impacts under the umbrella of environmental impacts and does not have a specific process for conducting and assessing SIA separate from the other four pillars.

The YESAA legislation has recently undergone a five-year review. The review aimed to identify priorities for improvement as well as challenges and opportunities in the assessment process. Despite YESAB's proactive effort to develop guidance and rigor within SIAs, many of the review's conclusions focus on improvements needed to enhance the socio-economic component of assessments (SENES Consultants Ltd, 2009). Specific findings of the report identify the need for:

1. Additional focus on the full scope of applicable heritage, cultural, and socio-economic issues (p. ii);
2. A clear process for determining the significance of environmental and socio-economic effects (pp. 49-50);
3. Consideration of beneficial (as opposed to solely adverse) environmental and socio-economic elements of projects (p. ii);
4. Creation of clear regulatory tools to assess and mitigate social, economic, and cultural impacts from development (p. ii);
5. A database on socio-economic conditions and trends in the Yukon for use by proponents, assessors, government departments, and other interveners during project assessments (p. 61); and
6. Additional training to YESAB staff and Board members in the techniques and principles of socio-economic impact assessment (p. 61).

Many of these recommendations are not uniquely applicable to YESAB, but extend to other organizations confronted by the general challenges in the field of SIA. The Yukon provides a useful comparison for B.C. because it is a proactive jurisdiction, already operating upon the principles of the Integrated Approach and with extensive guidance to assist participants, communities, and stakeholders. The YESAB Annual Report of 2009/10 and the YESAA five-year review website indicate that the five-year review is being considered by the Government of Canada, the Council of Yukon First Nations, and the Government of Yukon. These three parties are in the process of writing a response to the five-year review; upon approval of the response, the parties will then begin implementation of accepted recommendations.

The YESAA review demonstrates that other jurisdictions are grappling with the same complexities that challenge B.C. As such, it would be beneficial for B.C. to monitor YESAB's response to the five-year review and any accompanying implementation measures; these could provide opportunities for learning and partnership as both provinces strive towards a rigorous and comprehensive process for conducing SIA.

5.3. Hutt City, New Zealand: The Participatory Approach

Hutt City is the second largest city in New Zealand's Wellington Region, with a population of 136,116 in 2006 (Statistics New Zealand, 2009). The three largest industries in the region are business services, government administration, and education (Government of New Zealand, 2009).

In 1991, the Hutt City Council and the Wellington Regional Council retained Dianne Buchan, a consultant and SIA practitioner, to conduct an SIA on the Council's proposed Ewan Floodway Project. This Project included construction of a four-lane bridge into the city, demolition of a section of the shopping centre, construction and landscaping of new stop-banks, relocation of some local roads, and construction of paths and walkways. The Ewan Floodway Project was one of the first projects to be assessed under New Zealand's newly adopted *Resource Management Act* (RMA), which aims to "promote the sustainable management of natural and physical resources" (1991). The Act defines sustainability as "the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety" (1991, Section 5(1) & 5(2)). Thus, social impacts of development are encompassed under the Act through the definition of sustainability.

To begin the Ewan Floodway SIA, Buchan assembled three "community resource groups" –composed of residents, businesses, and local institutions–to review project plans and identify potential impacts in partnership with the Councils and technical experts (Buchan, 2003, p. 170). Building on feedback from the community resource groups and studies that were being undertaken, Buchan completed the initial SIA report. The report was then given to these three resource groups to review and provide feedback for incorporation into the report.

Later, when detailed project plans were being developed, the resource groups met with the Councils' engineers, planners, and landscape architects to gain a more comprehensive understanding about the complexities and potential impacts of the project. As their knowledge of the project grew, the resource groups continued to provide input to the Councils about the project design, offering suggestions for improving the project, such as the location of public spaces along the river, the width and location of walking and cycling trails, and the location of parking areas. Through this process, the Councils agreed to make specific changes to the project design (Buchan, 2003, p. 171).

Buchan (2003) identifies the major value of this exercise as "empowering the participants [through] an active role both in analyzing the significance of potential impacts and in developing mitigation measures that would address their concerns" (p. 171). This is a clear example of Promising Practice #6, which states that SIAs should solicit and reflect the input of impacted publics, communities, and stakeholders. In addition, the creation of community resource groups was one of the first actions taken as part of the Ewan Floodway SIA, thereby ensuring that members of the public were included in the process as early as possible.

Based on her experience conducting numerous SIAs in various parts of the world, Buchan (2003, p. 170) identifies five elements that are necessary for successful community participation:

1. **Adequate funding**: community involvement may take longer than an assessment grounded in the Rational Approach, thereby costing more money.
2. **Sufficient time**: community participants must be trained and informed prior to actively participating in the assessment process.
3. **Flexibility**: the process must be responsive to the needs of participants.
4. **Willingness from those in power to involve the community in decision-making**: this includes the recognition that there are various levels of public consultation[12] and that participative SIAs require a fairly high level of involvement; in addition, the proponent must be willing to share all relevant information with participants.
5. **A skilled SIA practitioner who can teach local participants about SIA techniques**: the practitioner must be able to communicate data in a way that participants can understand.

While all five of these elements are important, Buchan (2003) notes that adequate time and flexibility in the process are especially critical for supporting the Participatory Approach to SIA (p. 168).

This example of the Participatory Approach provides EAO with an illustration of how members of the public can be actively involved throughout the SIA process, including identification, assessment, and monitoring of social impacts. Furthermore, it demonstrates that a project can be developed in a way that incorporates and reflects public concerns and values.

[12] Note: the different levels of public consultation are discussed in the Discussion and Analysis section.

5.4. Brandon, Manitoba: The Rational Approach

In December 1997, the City of Brandon, Manitoba was selected as the location of choice for Maple Leaf Pork's new hog processing facility and accompanying wastewater treatment plant (City of Brandon). The proposed project was required to undergo a Provincial EA, and under Manitoba's *Environment Act*, the environment includes "air, land, and water, or plant and animal life, including humans" (Environment Act, 1987). Thus, social impacts were a required component of the Maple Leaf EA. The facility completed environmental assessment and was granted an Environmental License in 1998.

In 2003, Diduck and Mitchell published an article examining the comprehensiveness of the Maple Leaf project's SIA through the lens of the social learning framework. This framework seeks to address "the complexity and uncertainty of seemingly intractable environmental problems" by developing the public's technical knowledge and awareness of diverse interests (Diduck and Mitchell, 2003, p. 340). Through this framework, Diduck and Mitchell (2003) examine the extent to which three specific types of community learning were enabled through the Manitoba Maple Leaf Pork EA:

1. **Instrumental learning**: "coping with the external world through technical understanding" (341);
2. **Communicative learning**: "constructing meaning from communications in social interactions" (341), which includes the subcategories of "(i) insight into one's own interests, (ii) insight into the interests of others, (iii) communication strategies and methods, and (iv) social mobilization" (351); and
3. **Emancipatory learning**: resolution of disagreements through discourse, leaving the learner open to the "ideal conditions of learning" (p. 341).

Through semi-structured interviews conducted in 1999 (after the EA was completed) with members of the public, it was determined that:

- While some members of the public developed technical knowledge through the EA process, technical information was not accessible to many people (p. 356);
- The public tended to view the EA process as being controlled by the proponent; similarly, many people did not participate in the EA because they felt their input would not make a difference in the outcome (pp. 356-57);
- The disproportionate financial support for proponents provided by the Manitoba government (compared to financial support for public participation) reinforced negative perceptions about the EA's neutrality (p. 358); and
- Because project approval was decided at the political level, the public felt that there was a lack of fairness and transparency (p. 359).

Diduck and Mitchell (2003) concluded that the Manitoba Government's EA for Maple Leaf Pork limited collective learning among participants (p. 360). The EA followed the Rational Approach and contained a "complex web of barriers to public involvement" (Diduck and Mitchell, 2003, p. 360). Further, "opportunities for all participants to define their own meanings, intentions, and values were limited, which restricted opportunities to

self-define broader goals and community futures" (Diduck and Mitchell, 2003, p. 360). In fact, the authors refer to this EA as a typical case of "decide-announce-defend" as opposed to a more participatory or democratic process (Diduck and Mitchell, 2003, p. 360).

The public response to the Manitoba EA for Maple Leaf Pork highlights two specific challenges raised by the literature, both of which relate to the complexity of identifying and incorporating values into SIAs. These two challenges are:

- Challenge 3: The social impacts of a particular project are interpreted and measured by people's values and understanding of "quality of life;" and
- Challenge 7: There is limited theoretical guidance to identify aspects of the natural, economic, social, and cultural environments that individuals value the most.

The shortcomings of the Maple Leaf Pork EA emphasize the importance of enabling meaningful public participation as part of EAs. Through the project was ultimately approved, the community did not feel involved in the process and opportunities for public learning, buy-in, and capacity-building were lost.

5.5. Summary

The Jurisdictional Scan reinforces the challenges and promising practices discussed in the Literature Review and provides examples of how the three theoretical approaches highlighted by the literature have been operationalized in practice.

The Yukon Environmental and Socio-Economic Board illustrates the use of the Integrated Approach to SIA. YESAB has created an extensive guidebook for proponents on the process, methods, and tools for conducting Integrated SIAs. Despite this extensive guidance, the recommendations of YESAB's recent five-year review focus on the need to improve the assessment of socio-economic effects. The five-year review recommendations and YESAB's forthcoming response provide EAO with an opportunity to learn from another jurisdiction grappling with many of the same difficulties that occur in B.C.

The Ewan Floodway Project in Hutt City, New Zealand, demonstrates the Participatory Approach. As part of the SIA for this infrastructure project, community resource groups were assembled at the beginning of the process to identify potential impacts and provide feedback to the proponents on community concerns. These groups continued to provide input throughout the assessment, and into the development and construction phases. While the process resulted in positive relationships and community buy-in, it was also costly and time-consuming.

The Ewan Floodway Project is contrasted by the SIA for the Maple Leaf Pork hog processing plant in Brandon, Manitoba. The Maple Leaf Pork Project reflects the Rational Approach to SIA, as was demonstrated by interviews with community members following the completion of the EA process. Interviews demonstrated that community learning and public input were not fostered as part of the SIA, and as a result, impacted populations felt the process was a typical case of "decide-announce-defend."

DISCUSSION AND ANALYSIS

This section builds on the previous discussion to provide EAO with an understanding of how SIA is currently conducted in B.C. It then offers some ideas for how EAO might proceed to explore elements of SIA through consideration of a public consultation spectrum or the mixed methods approach to combining qualitative and quantitative information.

5.6. Identifying EAO's Current Approach to SIA

In order to continually improve environmental assessment in B.C., it is critical to identify the theoretical context in which B.C.'s SIA process is currently grounded. Based on a comparison of the three theoretical approaches to SIA, EAO appears to trend towards the Rational Approach to assessing the social impacts of planned development. While SIA in B.C. does demonstrate some characteristics of the Participatory Approach, these appear to be secondary to the Rational characteristics. This is likely due to the fact that although EAO considers value-laden information and uses community input to inform EAs, mechanisms for systematically factoring this Participatory data into the decision framework have not been developed or consistently applied.

Table 8 below evaluates B.C.'s environmental assessment process through the Data Characteristics Matrix that describes the Rational and Participatory Approaches to SIA:

	Rational	**Participatory**
Nature of EAO's data	✓ Value-free	X Value-laden
	Though EAO and proponents provide opportunities for public consultation on all potential impacts, including social impacts, there are often boundaries or constraints to consultation that the public does not understand. For example, each public comment period has a defined scope (i.e. the dAIR or the Application). During these public comment periods, the public tends to voice opinions of the project based largely on values and lifestyle issues, while the intent of the comment period is to solicit feedback on technical and lengthy documents (i.e. the dAIR or the Application). Thus, while value-laden information is communicated to EAO and proponents by the public and while this information is considered by EAO, there are limited mechanism for systematically incorporating it into the EA, except where the value-laden information can be made to fit the language of the dAIR or Application (for example, a request to add "community cohesion" as a VSC in the dAIR). The technical nature of the information being assessed and the nuances of the process itself restrict EAO and proponents from being able to capture value-laden information, except where a concerted effort is made to do so. Participation on project working groups is similarly highly technical. Although various local agencies are currently invited to sit on working groups, it would be beneficial for EAO to pursue strengthened local government (and perhaps Regional Health Authority) participation in order to better incorporate community input into EAs. In this way, community concerns, including those that are not technical in nature, could be brought forward for discussion in a more systematic way. This would also allow EAO to inform the public that elected local government officials are representing impacted communities at the working group level, and to encourage community members to make their views known to their local government, who can then bring these views forward to the working group. EAO may wish to model such an effort on current First Nation participation in working groups, which provides a good example of how non-technical input can	

	play an invaluable role. Therefore, although EAO gathers and considers information about social impacts during EAs, because of the nature of technical comment periods and the composition of working groups, this information stands to be more fully recognized and incorporated into the analysis and decision.	
Source of EAO's data	✓ Expert(s)	X Community
	EAO provides opportunities for both expert input (through working groups) and community input (through public comment periods) during EAs. In addition, proponents are required to respond to public comments on issues included in the EA through a tracking table included in project Applications. Therefore, both expert and community input are considered in each EA. However, as the process is currently applied, much of the feedback received from communities is not systematically considered in the analysis or decision, because it is not relevant to the technical issues being considered in the AIR or Application. As a result, EAO relies quite heavily on technical working groups for feedback, validation, and suggestions on those impacts being assessed. It is likely that this dynamic could be improved through two actions: 1) Conducting consultation earlier in each EA so that the public has a chance to comment on the project scope and design before the process becomes highly technical; and 2) Making information about the process and technical documents available to the public in a more colloquial and understandable way. At the root of this issue is the reality that it is extremely difficult to incorporate community, values-based perspectives into a technical document written by and for experts. As suggested previously, to move towards greater integration of community input into EA, it would be beneficial for EAO to solicit increased local government participation on working groups in order to raise the profile of social issues and create a space for non-technical discussions at the working group table.	
Type of EAO's data	✓ Quantitative	X Qualitative
	Membership on technical working groups is largely composed of scientific experts who can evaluate the technical elements of proponent submissions. While it is not within EAO's control to require agencies with a social mandate to participate in working groups, it nonetheless remains that working groups are better equipped to validate quantitative information than qualitative. EAO might consider requiring proponents to better "tell the story" of community concerns and feedback much in the same way that proponents are required to consider potential impacts to First Nations (e.g. not just the technical, objective comments). EAO could build upon proponents' capacity to capture and communicate qualitative impacts of development in the First Nations context by encouraging proponents to use a similar approach to assessing social impacts to people and communities in general.	
Slope of EAO's data	✓ Nomothetic (Broadly generalized information)	✓ Ideographic (Community-specific information)
	Nomothetic slope refers to the drawing of general or abstract conclusions about social interactions, while ideographic slope refers to an emphasis on the unique elements of social life (Marshall, 1998). As demonstrated in the case studies of three previously approved projects in B.C., the information required in applications to EAO is generally a comprehensive mix of both nomothetic and ideographic information on impacted social environments. This is one of the strengths of EAO's process and is an element that should be reinforced and recognized. Most project applications and accompanying EAO evaluations examine impacts to individual communities, Local Study Areas, Regional Study Areas, and the Province as a whole. This	

	provides a fairly comprehensive picture of impacts and their geographical distribution, and helps EAO determine whether or not the project is in the public interest.

Table 8. EAO's Approach to Assessing Social Impacts through the Data Characteristics Matrix.
Adapted from C. J. Barrow, *Social Impact Assessment: An Introduction*, 2000, p. 79.

As Table 8 demonstrates, EAO's incorporation of social impacts currently trends towards the Rational Approach, with elements of the Participatory Approach. The literature argues that the Rational Approach is limited by its singular focus on quantitative or factual information, making it difficult to gather and incorporate the values-based public input that is so critical to discussions about social impacts. As EAO is actively pursuing continual improvement in environmental assessment, the literature suggests that it would be beneficial to move towards an Integrated Approach to conducting SIA. The Integrated Approach provides a more rigorous framework for gathering values-based public input and incorporating it into the assessment process. Given that the Integrated Approach is a combination of the Rational and Participatory Approaches, and given that EAO is already practiced in the Rational Approach, moving towards integration will require EAO to bolster its capacity for understanding participatory methods of information gathering and evaluation and communicating this to proponents and the public.

5.7. The Public Consultation Spectrum

The literature makes a distinction between the terms 'consultation' and 'participation.' In general, the literature views consultation to be less comprehensive (e.g. one-way flow of information to the public) and participation to be more comprehensive (e.g. two-way flow of information between the public and proponents/regulators) (Buchan, 2003; Taylor et al., 2004; Sinclair and Diduck, 2009). However, the BC Public Consultation Policy Regulation (2002) uses the term 'consultation' to refer to all forms of public involvement. Therefore, rather than distinguishing between degrees of public input by using the terms 'consultation' and 'participation,' this paper uses the term 'public consultation spectrum' to acknowledge that consultation encompasses a wide range of techniques and levels of involvement.

The International Association for Public Participation (2007) identified five general categories of public involvement that can be adopted based on community needs: inform, consult, involve, collaborate, and empower. These five categories range from low to high levels of citizen participation, and are illustrated in the matrix for public consultation presented in Figure 5. This type of spectrum is widely applicable and represents the public consultation activities that could occur in any project or process setting. Specifically within the EA context, this spectrum could act as an interesting and valuable source of internal discussion for EAO to explore alternative methods of public consultation. It should be explicitly noted that although a consultation spectrum is a useful tool, it must also respect the regulatory responsibilities held by EAO. For example, although Figure 5 includes "empowerment" as a category of consultation, in which the promise to the public is "we will implement what you decide," as a regulatory authority EAO is legally required to carry out EAs as prescribed by legislation. In so doing, the objectives of "empowerment" could not supersede the responsibilities prescribed to EAO under the Act. Furthermore, decisions about whether or not to issue EACs are made by ministers who are elected by the

public to make decisions in the public interest. For these reasons, it would not be advisable for EAO to consult with the objective of "empowerment," although it would be within reason for industry or proponents to pursue this method.

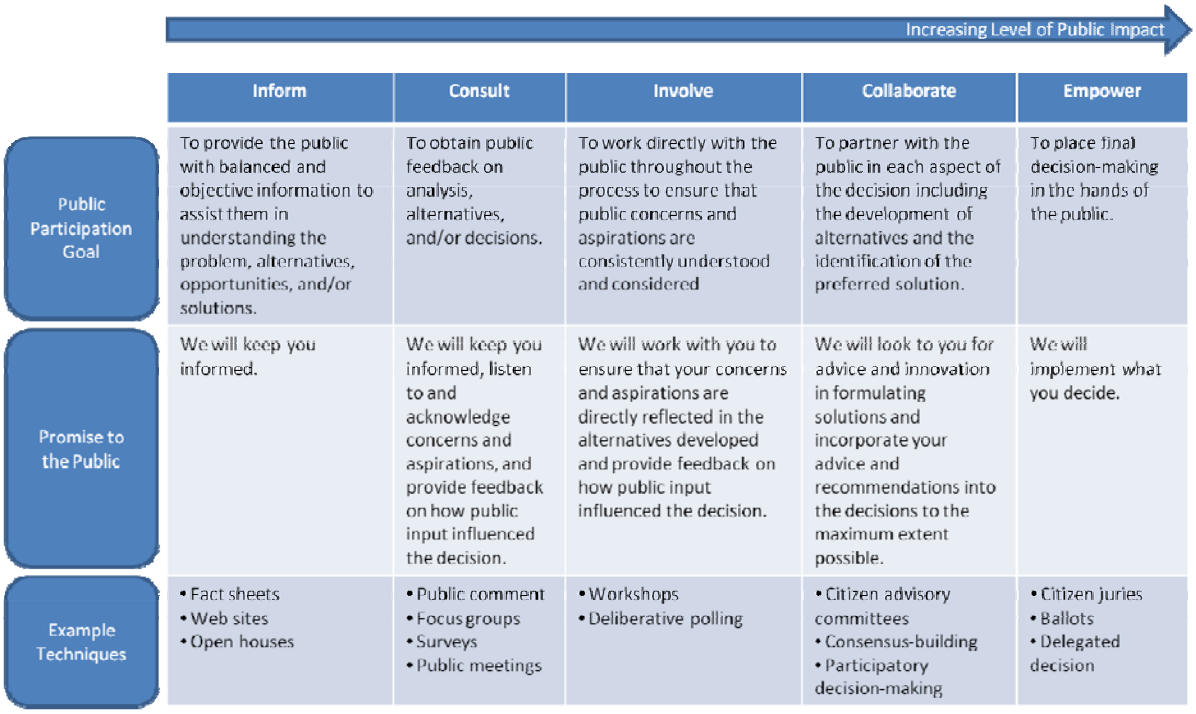

Figure 5. The Public Consultation Spectrum.
Adapted from "IAP2 Spectrum of Public Participation," by The International Association for Public Participation, 2007. Available online: http://www.iap2.org/associations/4748/files/IAP2%20Spectrum_vertical.pdf

Because all projects examined by EAO are different, a template approach to public consultation is not appropriate. Consultation methods must be flexible enough to match the needs and context of each project. In addition, not all communities will desire the same level of involvement in an EA. Some communities may be curious about a project and seek only information about the project and its benefits; other communities will be highly engaged and desire a more active role. Still other communities will fall somewhere in the middle. Similarly, within each community, there will be a range of individual participation levels, from low to high involvement preferences.

Figure 5 suggests that as the degree of social impacts increase, so to should the depth of public consultation. In deciding what level of consultation should be adopted for a particular community, Roberts (2003, p. 261) suggested considering:

- Previous community experiences;
- Volatility of the community;
- Extent of controversy about a proposed project;
- Levels of potential impacts; and
- Costs of delay for the proponent.

Perhaps one of the most fundamental considerations when consulting with the public is who, exactly, should be included in the scope of consultation. The IOCGP, in their 2003 guidelines for conducting SIA in the United States, suggested including (pp. 243-244):

- Those who live nearby;
- Those who will see, hear, or smell a development;
- Those who are forced to relocate because of a project;
- Those who have an interest in the proposal but may not live in proximity; and
- Those who might normally use the land on which a project is located.

As is apparent from this list, the IOCGP recommended that consultation be inclusive. Not only will this engender within communities a sense of "being heard," it will also provide regulators with the broadest cross-section of feedback and public opinion available on a particular project. Having a suite of tools to accommodate the various levels of desired involvement will allow EAO to facilitate the most meaningful public involvement possible for each particular project. Many of the example techniques listed in Figure 5 are also referenced in Appendix A.

5.8. Mixed Method Tools for Qualitative Research

As a precursor to the discussion on mixed methods, it is important to remember that in B.C., it is proponents who conduct environmental assessments, which are submitted to EAO for analysis and recommendations to ministers. As EAO seeks to continually improve its practice as a provincial regulator and leader in the field of environmental assessment, it may consider directing proponents to use new qualitative research methodologies. One possible methodology of interest is the mixed methods design, an approach that was developed in the field of education and is "a procedure for collecting, analyzing, and 'mixing' both quantitative and qualitative research and methods in a single study to understand a research problem" (Creswell, 2008, p. 552). This design could be incorporated into how EAO directs proponents to conduct SIA in order to better capture complex social issues that cannot be easily quantified. The mixed methods research design is similar to the Integrated Approach, in that it also supports the combined use of technical data and community input. However, the mixed method design provides different qualitative techniques and processes for information gathering (Creswell, 2003, p. 552). Some of the research techniques supported by the mixed methods design are outlined in Table 9. This table could be provided to proponents to give them some examples of methods for qualitative research and analysis.

Qualitative Data Collection Approaches	
Observation (field notes)	Observation as participant
	Observation as observer
	Spend more time as participant than observer
	Spend more time as observer than participant
	Observe as an "outsider," then participate and observe as an "insider"
Interviews and Questionnaires	Unstructured, open-ended interviews with interview notes
	Unstructured, open-ended interviews that are recorded and transcribed
	Semi-structured interviews that are recorded and transcribed
	Focus group interviews that are recorded and transcribed
	Open-ended electronic interviews or questionnaires
	Open-ended questionnaires (non-electronic)
Documents	Journal of the research study (or qualitative social impact period)
	Participants journal during the research study (or period during SIA)
	Personal letters from participants
	Public documents (official memos, minutes of meetings, records or archival material)
	Local government documents (Official Community Plans, Regional Growth Strategies, Annual Reports, Land Use Plans)
	Autobiographies or biographies
	Maps and seating charts
	Portfolios or formal public and stakeholder submissions
	Emails and electronic data

Table 9. Approaches to Qualitative Data Collection.
Adapted from "Quantitative and Qualitative Methods of Data Collection and Types of Data," by J. Creswell, 2003, p. 563. Copyright 2003 by Pearson Prentice Hall.

The mixed method design is typically applied in academic research settings, but it is grounded in principles and practices that could be translated into practical application as well. For example, the mixed methods process illustrated in Figure 6 below could be adapted to work within the EAO's process for conducting environmental assessments.

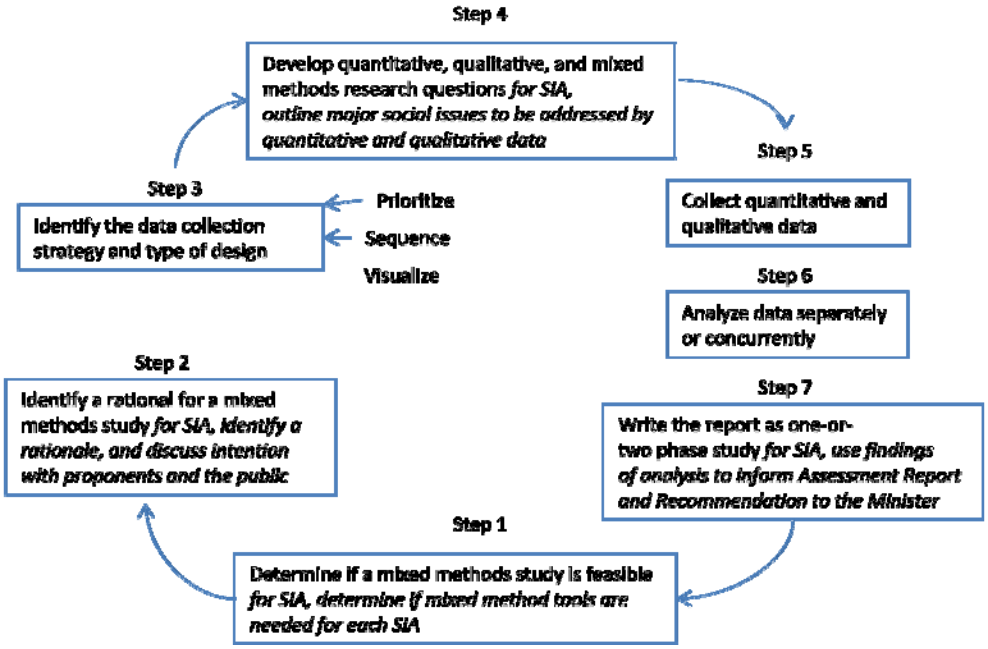

Figure 6. Steps for Conducting a Mixed Methods Study for a Social Impact Assessment.
Adapted from "Steps in the Process of Conducting a Mixed Methods Study," J. Creswell, 2003, p. 568. Copyright 2003 by Pearson Prentice Hall.

The drawback of the mixed methods design is that it can be costly, time consuming, and require extensive knowledge of qualitative research tools (Creswell, 2003, pp. 557-562). As a result, this method should not be attempted without adequate training and grounding in qualitative research design and evaluation. As EAO continues to enhance its approach to SIA, mixed methods design may provide EAO with tools that can be provided to proponents to reinforce and diversify their ability to capture qualitative information. In the future, EAO may wish to host a staff workshop for developing collective understanding about qualitative research and analytical methods and how these might be conveyed to proponents.[13]

5.9. Further Research

In the future, EAO may wish to consider exploration of a number of concepts discussed in the literature, but not reflected in this report, including:

1. Specific approaches to conducting SIA with First Nations populations.
2. Analysis and evaluation of gender-based analysis (GBA) as a tool for and indicator of social impacts.
3. Consideration of cost-benefit analysis (CBA) as a tool for and indicator of social impacts.

[13] Note: If EAO is interested in this option, it might be possible for professors from the University of Victoria's Faculty of Human and Social Development to develop and deliver such a workshop.

4. Consideration of income-disparity analysis as a tool for and indicator of social impacts.

Any further work on these concepts could be framed within the epistemology of the Integrated Theoretical Approach and as such, could work in tandem with the recommendations in this report.

6. RECOMMENDATIONS

These recommendations respond directly to the challenges and promising practices discussed in the literature, as well as the analysis of EAO's current administration of SIA in B.C. The recommendations do not imply any deficiencies in EAO's current practice, but are rather meant to enhance and build on existing standards. These recommendations reflect the government's focus on communities, transparent decision-making, and open government (Families First Agenda for Change, 2011).

Recommendation 1: Adopt the Integrated Approach and Define *Social Impacts* and *SIA*

It is recommended that EAO formally adopt the Integrated Approach to SIA and be transparent with proponents, stakeholders, First Nations, and the public about requiring both qualitative and quantitative information as part of social impact assessments. This will likely require intentional discussions with proponents about the role of qualitative information and methods for gathering it. Adopting a guiding approach and defining social impacts is the first step in developing enhanced guidance and direction to proponents for how SIAs can be more rigorously and consistently prepared across the Province. If this recommendation is approved, EAO may wish to create a guidebook for SIA, similar to that created by YESAB and discussed in the Jurisdictional Scan. It would also be valuable to organize internal discussions or training to familiarize staff with the language and principles of the Integrated Approach.

Recommendation 2: Develop Principles and Objectives for SIA

Once EAO defines a theoretical approach that proponents must use in conducting SIA, principles and objectives can then identify guiding concepts that can shape the process and outcome of SIA. The value of principles and objectives is that they establish a high-level framework that can be flexible to project-specific needs. As a starting point, EAO could consider the seven principles and objectives that YESAB has adopted for SIA (*Guide to Socio-Economic Effects Assessment*, 2006, pp. 20-23). These are:

1. Achieve a broad understanding of the local and regional settings potentially affected by the proposed action;
2. Focus assessment on key aspects of the human environment that are relevant to communities and stakeholders;
3. Provide valid and relevant information for use in decision-making;
4. Identify methods and assumptions and define significance.
5. Ensure that effect equity issues (social justice) are described and analyzed;
6. Consider and recommend suitable mitigation and include in the assessment mechanisms to improve the likelihood of mitigation success; and
7. Determine the best development alternative(s), rather than merely serving as an arbiter between socio-economic benefit and social cost.

These objectives and principles would need to be adapted for use at EAO, but they provide an example of how high-level statements can be used to guide and shape not only proponent activities and submissions, but also analysis by the regulatory authority.

As part of this discussion, it would be beneficial for EAO to consider how, and to what extent, public opinions for or against a project are considered in EAO's analysis and recommendation to ministers. Currently, EAO does not systematically consider non-technical public input stating an opinion for or against a project as part of the decision-making framework. If EAO were able to develop a principle or objective that could respond to this issue, it would be a valuable communication tool for helping the public to understand the role of their input in the outcome of assessments. It would also assist EAO in "telling the story" of the public's non-technical feedback to ministers.

Recommendation 3: Consult the Public Earlier

If EAO adopts the Integrated Approach, it will need to expand its emphasis on the qualitative aspects of SIA, including consultation. Specifically, it is recommended that public engagement activities be shifted to occur earlier in the EA process so that impacted populations can be consulted on the project description and possibly the scope of the assessment (the Section 11 Order). Currently, consultation typically occurs on the dAIR and project Application documents. This requires public input to focus on technical documents that are often confusing and inaccessible. It is anticipated that opening up the floor for dialogue with communities earlier in the process will circumvent many of the issues that occur later in EAs when EAO and proponents consult on the lengthy and technical dAIR and Application documents. This is not to say that consultation on the dAIR and Application are not useful; indeed, they are, and they provide community experts with the opportunity to share their expertise. However, it would also be beneficial to consult with the public at an earlier stage in the process when the material is not as technical.

Consultation is a key part of SIA because it is during this activity that proponents and EAO are made aware of public and community values. Community values often affect EAs throughout their entire duration, and can be the source of positive or negative relationships between proponents, EAO, and the public. Ultimately, if community values are captured by the project description and possibly the scoping process and are accurately reflected as VSCs in the dAIR and Application, proponents should be equipped to submit better information to EAO. This has the potential to significantly enhance EAO's analysis of proponent submissions and in turn, the Executive Director's recommendation to ministers.

It is important to make the distinction that if EAO intends to expect consultation on the project description, this would need to occur before a project enters into the EA process and would be conducted solely by the proponent.[14] For this to occur, EAO would need to

[14] Note: In its February 18, 2011 ruling on the *Nlaka'pamux Nation Tribal Council v. British Columbia (Environmental Assessment Office)* case, the BC Court of Appeal established that First Nations consultation activities must be required through the Section 11 Order to be considered 'consultation.' Therefore, if proponents were to consult on the project description (which is developed prior to the Section 11 Order), it

develop guidance for proponents about expectations for pre-EA public consultation. Proponents would likely be required to submit a table documenting public concerns, suggestions, and interests including the proponents' responses to those issues along with the initial project description. If, in addition to or separate from consultation by the proponent on the project description, EAO decides to institute consultation on the Section 11 Order, this would be carried out by EAO and the CEA Agency, if applicable. Some guidance would likely need to be developed to assist EAO staff in consulting on the Section 11 Order, and could be based on a recent pilot that has been conducted for the proposed Ajax Mine Project in Kamloops, B.C.

Recommendation 4: Develop New Tools and Training for Consultation and Communication

Since EAO is already practiced in using quantitative or scientific tools for SIA, it could benefit from expanding its use of qualitative tools if it chooses to adopt the Integrated Approach. It is recommended that EAO's first step towards an expanded qualitative capacity is the development of internal awareness and a practical toolbox for a wider range of public consultation techniques.

EAO should not expect to expand the consultation spectrum overnight. Roberts (2003) cautions that making a shift like this requires "more than a new range of techniques and methods; it requires a shift in values, which allows for a more open, honest and transparent relationship to develop among all parties...above all, it takes time, resources, and commitment" (p. 265-66). Adopting new techniques and developing a shift in values will be a gradual process. It will also require training and discussions with staff to enable collective learning and ensure that EAO is using language and methods consistently.

Drawing upon a wider range of public consultation methods will help EAO to gather information about and report on socio-economic impacts in a way that provides useful and transparent values-based information to decision-makers. An expanded toolkit for conducting public consultation will allow EAO and proponents to adapt to each unique project context.

As part of this recommendation, it is recommended that EAO pursue strengthened local government (and perhaps Regional Health Authority) participation on working groups. In this way, community concerns, including those that are not technical in nature, could be brought forward for discussion in a more systematic and formalized way. This would also allow EAO to inform the public that elected local government officials are representing impacted communities at the working group level, and to encourage community members to make their views known to their local government, who can then bring these views forward to the working group. The EAO may wish to model such an effort on current First Nation participation in working groups, which provides a good example of how non-technical input can play an invaluable role.

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would be focused on public consultation. Issues raised by First Nations would need to be considered formally following the Section 11 Order.

As a starting point for considering new techniques, Appendix A contains a list of various public participation methods that EAO may consider using. If EAO intends to diversify its consultation practices, it would be wise to solicit input and guidance from experts in online communication, public engagement, interactive forums, and related areas of consultation and communication.

Recommendation 5: Require Proponents to Demonstrate how Public Input Influenced the Selection of VSCs

In order to improve EAO's ability to verify and analyze information about baseline social conditions and potential impacts thereon, EAO could specifically require Proponents to discuss the linkage between public input and the selection of VSCs. This would entail a fairly straightforward amendment to Section 4 (Methodology) or Section 7 (Assessment of Potential Social Effects) of the AIR Template. Currently, the AIR template outlines the approach that Proponents should use in outlining the socio-economic setting and potential project impacts; however, proponents are not required to explicitly describe the linkages between this information and public input. It is recommended that the AIR be revised to require a mandatory discussion highlighting such linkages.

If EAO decides to require consultation at an earlier stage, as raised in Recommendation 3, proponents would also be required to demonstrate to EAO how public input during consultation on the project description has been addressed and incorporated.

7. CONCLUSION

The Environmental Assessment Office assesses proposed major development in the Province of B.C. for significant adverse environmental, economic, social, health and heritage effects. One of the greatest challenges EAO faces is that as a regulator, it is not actually conducting environmental assessments, but is rather providing direction and guidance to proponents on standards that must be met in project Applications. This report examined three specific opportunities for improvement:

1. Selecting a single, formally recognized definition for *social impacts* and *social impact assessment*;
2. Adopting a common theoretical framework to provide a standard for how proponents conduct social impact assessment; and
3. Developing internal capacity, including staff education and awareness, and improved access to social experts.

By exploring these three issues, this report provides EAO with ideas for developing clearer and more consistent direction to proponents about how SIAs should be conducted and how impacts should be assessed.

Using the Data Characteristics Matrix, which examines the nature, source, type, and slope of the data generated in an EA, this report suggested that B.C. is operating primarily upon the Rational Approach to SIA, with Participatory components. The report also suggested that because of EAO's strength in evaluating quantitative data, greater internal capacity is needed for assessing and evaluating qualitative information. To this end, the report provided an example of a public consultation spectrum that could assist EAO and proponents in better working with the public to identify and frame values-based concerns in a way that can be incorporated into assessments and decisions.

The report culminated with a suite of five recommendations that respond directly to many of the issues raised in the Literature Review and the Discussion and Analysis. It is recommended that EAO:

1. Adopt the Integrated Approach and definitions provided for s*ocial impacts* and *social impact assessment;*
2. Develop principles and objectives for social impact assessment;
3. Consult the public earlier;
4. Develop new tools and training for consultation; and
5. Require proponents to demonstrate how public input influenced the selection of VSCs.

These recommendations are meant to support the Environmental Assessment Office in its continuing pursuit of excellence in environmental assessment.

8. REFERENCES

Baldwin, C., O'Keefe, V., & Hamstead, M. (2009). Reclaiming the balance: Social and economic assessment -- lessons learned after ten years of water reforms in Australia. *Australasian Journal of Environmental Management, 16*(2), 70-83.

Barrow, C. J. (2000). *Social impact assessment: An introduction*. New York: Oxford University Press.

BC Environmental Assessment Office. (2009). *User guide*. Retrieved from http://www.eao.gov.bc.ca/pdf/EAO_User_Guide%20Final-april2010CI.pdf

BC Environmental Assessment Office. (2010). *Application information requirements template*. Retrieved from http://www.eao.gov.bc.ca/pdf/AIR_Template_oct2010.pdf

BC Public Consultation Policy Regulation, O.C. 1160/2002 (2002).

BC Reviewable Projects Regulation, O.C. 1156/2002 (2002).

Becker, D., Harris, C., McLaughlin, W., & Nielson, E. (2003). A participatory approach to social impact assessment: The interactive community forum. *Environmental Impact Assessment Review, 23,* 367-382. doi:10.1016/S0195-9255(2)00098-7

Berger, T. (1977). *Northern frontier, northern homeland – Mackenzie Valley pipeline inquiry report*. Ottawa: Ministry of Supply and Services Canada. Retrieved from https://www.neb-one.gc.ca/ll-eng/livelink.exe?func=ll&objId=238336&objAction%20=browse&redirect=3&redirect=4

Black, H. (2004). Imperfect protection: NEPA at 35 years. *Environmental Health Perspectives, 112*(5), 292-295.

Buchan, D., & Rivers, M. (1990). Social impact assessment: Development and application in New Zealand. *Impact Assessment Bulletin, 8*(4), 97-105.

Buchan, D. (2003). Buy-in and social capital: By-products of social impact assessment. *Impact Assessment and Project Appraisal, 21*(3), 168-172. doi:10.3152/147154603781766266

Burdge, R. (2002). Why is social impact assessment the orphan of the assessment process? *Impact Assessment and Project Appraisal, 20*(1), 3-9. doi:10.3152/147154602781766799

Canter, L., & Clark, R. (1997). NEPA effectiveness: A survey of academics. *Environmental Impact Assessment Review, 17*, 313-327.

Casely, D., & Kumar, K. (1987). *Project monitoring and evaluation in agriculture.* London: Johns Hopkins University Press.

Clark, C. (2011). *Families first agenda for change*. Retrieved from http://www.christyclark.ca/cc/wp-content/uploads/2010/12/ChristyClark-FamiliesFirstAgenda.pdf

Clifford, D. (1998). *Social assessment theory and practice: A multidisciplinary framework.* London: Ashgate Publishing.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3 ed.). New Jersey: Pearson Education.

Diduck, A., & Mitchell, B. (2003). Learning, public involvement and environmental assessment: A Canadian case study. *Journal of Environmental Assessment Policy and Management, 5*(3), 339-364.

Dietz, T. (1987). Theory and method in social impact assessment. *Sociological Inquiry, 57*(1), 54-69. doi: 10.1111/j.1475-682X.1987.tb01180.x

Economic Development Brandon. (2010). *Looking back at the Maple Leaf project.* Retrieved from http://www.city.brandon.mb.ca/main.nsf/Pages+By+ID/648

Environmental Assessment Office. *Frequently asked questions: What is an environmental assessment (EA)?* Retrieved from http://www.eao.gov.bc.ca/FAQ.html

Gamble, D. J. (1978). The Berger inquiry: An impact assessment process. *Science, 199*(4332), 946-952. Retrieved from http://www.jstor.org/stable/1745867

Gray, J. A., & Gray, P. J. (1977). The Berger report: Its impact on northern pipelines and decision making in northern development. *Canadian Public Policy, 3*(4), 509-515. Retrieved from http://www.jstor.org/stable/3549571

Greater Vancouver Transportation Authority. (2003). *Application for Environmental Assessment Certificate for the new Fraser River crossing project*. Retrieved from http://a100.gov.bc.ca/appsdata/epic/documents/p214/d15645/1063837399249_bed779eb373f4bfca97afa56ac42a5ae.pdf

Hanna, K. (Ed.). (2009). *Environmental impact assessment: Practice and participation* (2nd ed.). Ontario: Oxford University Press.

International Association for Impact Assessment. (1999). *Principles of environmental impact assessment best practice*. Retrieved from http://www.iaia.org/publicdocuments/specialpublications/Principles%20of%20IA_web.pdf

International Association for Public Participation. (2007). IAP2 spectrum of public participation. Retrieved from http://www.iap2.org/associations/4748/files/IAP2%20Spectrum _vertical.pdf

Interorganizational Committee on Principles and Guidelines for Social Impact Assessment. (2003). Principles and guidelines for social impact assessment in the USA. *Impact Assessment and Project Appraisal, 21*(3), 231-250.

Karkkainen, B. (2002). Toward a smarter NEPA: Monitoring and managing government's environmental performance. *Columbia Law Review, 102*(4), 903-972.

Klohn Crippen Berger. (2006). *Application for Environmental Assessment Certificate for the Ruby Creek molybdenum project*. Retrieved from http://a100.gov.bc.ca/appsdata/epic/documents/p258/d22211/1155335628563_fae4f62c195f4363b95a965bdfb8e7b8.pdf

Lawrence, D. (1993). Quantitative versus qualitative evaluation: A false dichotomy? *Environmental Impact Assessment Review, 13*, 3-11.

Lockie, S. (2001). SIA in review: Setting the agenda for impact assessment in the 21st century. *Impact Assessment and Project Appraisal, 19*(4), 277-287. doi:10.3152/147154601781766952

The Manitoba Environment Act, C.C.S.M. c. E125 (1987).

Marshall, G. (1998). Ideographic versus nomothetic approaches. In *A dictionary of sociology*. Retrieved from http://www.encyclopedia.com/doc/1O88-ideogrphcvrssnmthtcpprchs.html

Miskowiak, D. (2003). Meaningful to citizens – functional for planning: Using public participation tools to accomplish planning tasks. *The Land use Tracker, 3*(3), 1-5.

Noble, B. (2010). *Introduction to environmental impact assessment: A guide to principles and practice* (2nd ed.). Toronto: Oxford University Press.

Norton-Miller, A. (2009). NEPA-where are we? where are we going? *Environmental Practice, 2*(4), 275-279. doi:10.1017/S1466046600001691

New Zealand Resource Management Act, No. 69 (1991). Retrieved from http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html

Pushchak, R & A Farrugia-Uhalde. (2009). Social impact assessment and high-level radioactive waste disposal: The Canadian concept and Aboriginal responses. In Hanna (ed), *Environmental impact assessment: Practice and participation* (pp. 131-157). Don Mills: Oxford University Press.

Putnam, R. (1993). The prosperous community – social capital and public life. *American Prospect* (13), pp. 35-42.

Rescan™ Environmental Services Ltd. (2006). *Application for Environmental Assessment Certificate for the Galore Creek copper-gold-silver project*. Retrieved from http://a100.gov.bc.ca/appsdata/epic/documents/p239/d21939/1151444091453_f314149f768a4109abd3ab91484841ea.pdf

Roberts, R. (2003). Involving the public. In H. Becker and F. Vanclay (eds), *International handbook of social impact assessment* (p. 258). Cheltenham: Edward Elgar Publishing Ltd.

Roche, C. (1999). *Impact assessment for development agencies: Learning to value change*. Oxford: Oxfam GB.

Rowan, M. (2009). Refining the attribution of significance in social impact assessment. *Impact Assessment and Project Appraisal, 37*(3), 158-191. doi:10.3152/146155109X467588

SENES Consultants Ltd. (2009). *The Yukon environmental and socio-economic assessment act five-year review: Final report-observations and conclusions.* Whitehorse: Yukon Environmental and Socio-Economic Board.

Slootweg, R., Vanclay, F., & van Schooten, M. (2001). Function evaluation as a framework for the integration of social and environmental impact assessment. *Impact Assessment and Project Appraisal, 19*(1), 19-28. doi:10.3152/147154601781767186

Statistics New Zealand. (2006). Population count of upper Hutt City and lower Hutt City.

Statistics New Zealand. (2007). *Top 10 industries in Wellington, by number of people employed*. Retrieved from http://www.careers.govt.nz/default.aspx?id0=10106&id1=02AECE68-C76E-420E-BB14-787AEDD07823

Taylor, C. N., Bryan, C. H., & Goodrich, C. G. (2004). *Social assessment: Theory, process, and techniques* (3rd ed.). Middleton: Social Ecology Press.

Vanclay, F. (2002). International principles for social impact assessment. *Impact Assessment and Project Appraisal, 21*(1), 5-11.

Vanclay, F. (2003). Conceptualising social impacts. *Environmental Impact Assessment Review, 22*(184), 183-211.

Vanclay, F. (2005). Principles for social impact assessment: A critical comparison between the international and US documents. *Environmental Impact Assessment Review, 26*, 3-14. doi:10.1016/j.eiar.2005.05.02

Walker, G. (2010). Environmental justice, impact assessment and the politics of knowledge: The implications of assessing the social distribution of environmental outcomes. *Environmental Impact Assessment Review, 30*(5), 312-318. doi:10.1016/j.eiar.2010.04.005

Wolf, C. P. (1980). Getting social impact assessment into the policy arena. *Environmental Impact Assessment Review, 1*(1), 27-36.

Yukon Environmental and Socio-Economic Act, S.C. c. 7, (2003).

Yukon Environmental and Socio-Economic Board. *Socio-economic effects assessment fact sheet*.

Yukon Environmental and Socio-Economic Board. (2006). *Guide to socio-economic effects assessment.*

Yukon Environmental and Socio-Economic Board. (2010). *Annual report 2009/10*.

9. APPENDICES

Appendix A: List of Activities for Diversifying Public Consultation

Public Participation Techniques for EA/SIA		
Passive public information techniques		
Advertisements	Feature stories	Information repositories
News conferences	Newspaper inserts	Press releases
Print materials	Technical reports	Television
Websites		
Active public information techniques		
Briefings	Central contact person	Community fairs
Expert panels	Field offices	Field trips
Information hotline	Open houses	Technical assistance
Simulation games	Social media	
Small-group public input techniques		
Informal meetings	In-person surveys	Interviews
Small-format meetings		
Large-group public input techniques		
Public hearings	Response sheets	
Mail, telephone, and internet surveys		
Small-group problem-solving techniques		
Advisory committees	Citizen juries	Community facilitation
Concensus building	Mediation and negotiation	Panels
Role playing	Task forces	
Large-group problem-solving techniques		
Workshops	Interactive polling	Sharing circles
Websites and chat rooms	Future search conference	

Source: Sinclair, A & A. Dicuck. (2009). "Public participation in Canadian environmental assessment: Enduring challenges and future directions." In Hanna, 2nd ed (2010). 72.

Appendix B: Indicators of Social Impact Assessment

Social impact assessment variables	General planning, policy development, preliminary assessment	Detailed planning, funding, & impact assessment	Construction/ implementation	Operation/ maintenance	Decommission/ abandonment
Population change					
Population size density and change					
Ethnic & racial comp & dist					
Relocating people					
Influx & outflows of temporaries					
Presence of seasonal residents					
Community and institutional structures					
Voluntary associations					
Interest group activity					
Size & structure of local government					
Historical experience with change					
Employment/income characteristics					
Employment equity of disadvantaged groups					
Local/regional/national linkages					
Industrial/commercial diversity					
Presence of planning & zoning					
Political & social resources					
Distribution of power and authority					
Conflict newcomers and old-timers					
Identification of stakeholders					
Interested & affected parties					
Leadership capability & characteristics					
Interorganizational cooperation					
Community & family changes					
Perceptions of risk, health, & safety					
Displacement/relocation concerns					
Trust in political & social institutions					
Residential stability					
Density of acquaintanceships					
Attitudes toward proposed action					
Family & friendship networks					
Concerns about social well-being					
Community resources					
Change in community infrastructure					
Indigenous populations					
Changing land-use patterns					
Effects on cultural, historical, sacred & archaeological resources					

Source: Adapted from: "US Principles and Guidelines for Social Impact Assessment," 2003, *Impact Assessment and Project Appraisal*, 21(3), 243. Beech Tree Publishing: Surrey.

Appendix C: Summary of the Challenges and Promising Practices Raised in the Literature

Challenges
1. The costs and benefits of impacts may not be measureable or quantifiable, and the tools needed to assess many impacts do not exist. 2. SIA can be undertaken in different contexts and for different purposes; this creates difficulties in defining and evaluating it. 3. The social impacts of a particular project are interpreted and measured by people's values and understanding of "quality of life." 4. There are major gaps in the information available to SIA assessors. 5. There are a number of methodological and theoretical approaches to SIA. It is difficult to evaluate processes and results when approaches are so divergent. 6. Many of the individuals conducting SIA are technical scientists who tend to view human impacts as "soft" or immeasurable. 7. There is limited theoretical guidance to identify aspects of the natural, economic, social, and cultural environments that individuals value the most. 8. The social impacts of project closure are often downplayed or entirely overlooked. 9. Greater emphasis and guidance is needed for conducting monitoring and evaluation activities.
Promising Practices
1. SIAs should address the fairness of a project's outcomes. 2. SIAs should recognize and incorporate the intangible social impacts, even if they are harder to identify and measure. 3. SIAs should focus on a limited number of indicators or variables and should be organized in terms of major issues. 4. The indicators and criteria used in SIAs should be both flexible and structured. 5. Decision-criteria should be identified and published early in the process. 6. SIAs should solicit and reflect input from the impacted public, communities, and stakeholders. 7. Positive impacts should be highlighted along with negative impacts.