

# Socio-Economic Impact Assessment **GUIDELINES** Mackenzie Valley Environmental Impact Review Board

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**Cover photos**

**Front (L-R)**

Elder at community hearing in the Dehcho  
Community hearing in Fort Resolution, NWT  
Children at the 2006 Tlicho Annual Assembly in Wekweeti, NWT

**Back (L-R)**

Fort Good Hope, NWT  
Snap Lake, NWT  
Dog musher (photo, Tessa Macintosh)  
William Koe, Charlie Snowshoe, and James Andre in Fort McPherson, NWT

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# Common Acronyms

The following is a list of acronyms used in the *Socio-Economic Impact Assessment Guidelines*:

- DAR Developer's Assessment Report
- EA environmental assessment
- EIA environmental impact assessment
- *EIA Guidelines* *Environmental Impact Assessment Guidelines*
- EIR environmental impact review
- ENR (GNWT department of) Environment and Natural Resources
- GDP gross domestic product
- GNWT Government of the Northwest Territories
- INAC Indian and Northern Affairs Canada
- MVRMA *Mackenzie Valley Resource Management Act*
- NEB National Energy Board
- NGO non-governmental organization
- NWT Northwest Territories
- REA Report of Environmental Assessment and Reasons for Decision
- PWNHC Prince of Wales Northern Heritage Centre
- SEIA Socio-Economic Impact Assessment
- *SEIA Guidelines* *Socio-Economic Impact Assessment Guidelines*
- TOR Terms of Reference

## Disclaimer:

These guidelines are not a legal authority and are not intended to provide legal advice or directions. This guideline provides information only, and should not be used as a substitute for the *Mackenzie Valley Resource Management Act* (MVRMA) or regulations. In the event of a discrepancy, the MVRMA or a land-claim agreement prevail.





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## Using the Socio-Economic Impact Assessment Guidelines

# Using the Socio-Economic Impact Assessment Guidelines

## 1.1 Review Board Guidelines

The *Socio-Economic Impact Assessment Guidelines* are the third set of guidelines the Review Board has produced to help clarify the environmental impact assessment (EIA) process in the Mackenzie Valley. The Review Board developed each set of guidelines in accordance with section 120 of the *Mackenzie Valley Resource Management Act* (MVRMA).

The Review Board recommends that every organization involved in EIA become familiar with the expectations and processes described in the Review Board's series of guidelines—beginning with the *Environmental Impact Assessment Guidelines* (*EIA Guidelines*).

The *EIA Guidelines* are the parent document in the Review Board's guidelines series. The *EIA Guidelines* reflect the law, current thinking and good practices for EIA in the Mackenzie Valley. These guidelines describe the steps, requirements and Review Board expectations of the EIA process.

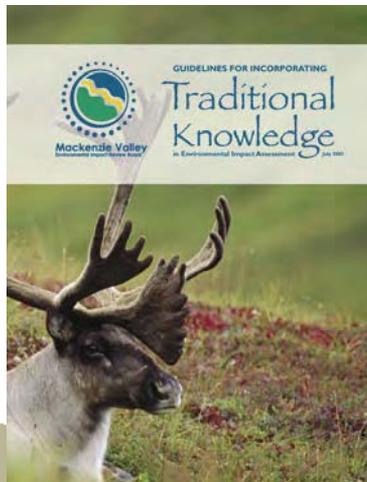
The *Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment* (*TK Guidelines*) outline the Review Board's expectations and processes for incorporating traditional knowledge in the EIA process. The *TK Guidelines* are particularly important for developers planning to work with traditional knowledge holders in Mackenzie Valley communities. These guidelines also explain to Mackenzie Valley residents and communities how the EIA process can accommodate issues related to protecting the confidentiality of traditional knowledge.

These *Socio-Economic Impact Assessment Guidelines* (*SEIA Guidelines*) are a planning tool that outline the Review Board's expectations for assessing socio-economic and cultural impacts. The developer and parties to the EIA of a proposed development that may cause adverse socio-economic and cultural impacts should refer to the *SEIA Guidelines*. The developer and parties should also refer to the *SEIA Guidelines* to identify whether these potential impacts *need* to be assessed during the EIA process.

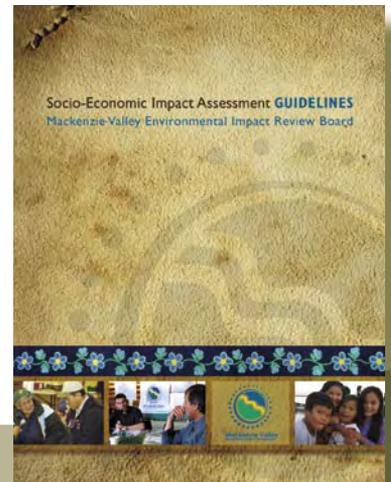
*Environmental Impact Assessment Guidelines (EIA Guidelines)*



*Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment (TK Guidelines)*



*Socio-Economic Impact Assessment Guidelines (SEIA Guidelines)*



## 1.2 Who Should Use These Guidelines?

**Developers** that are responsible for assessing and reporting the potential socio-economic and cultural impacts of proposed developments. The *SEIA Guidelines* explain how a developer can conduct SEIA, including the following:

- How to address SEIA issues when engaging communities before the EIA process begins
- What level of SEIA is required for the proposed development application

**Regulatory agencies and government departments** that are responsible for the following:

- Determining whether a developer’s SEIA identifies potential impacts and the stated concerns of potentially affected Mackenzie Valley residents and communities
- Fulfilling their socio-economic mandates by participating in and contributing to the SEIA process

**Aboriginal groups, communities and other parties** that want to participate in the SEIA of a proposed development. These groups are valuable participants in SEIA. Developers should note that residents and users of an area potentially impacted may have useful expertise or knowledge regarding the potential socio-economic and cultural impacts of a proposed development.

**Communities** include: ▶ self-identified cultural groups ▶ municipalities such as hamlets, villages and towns ▶ interest groups and NGOs that the proposed development may impact.

## 1.3 Guideline Objectives

The Review Board wrote the *SEIA Guidelines* to help developers – and other parties – identify and propose mitigation for potential socio-economic and cultural impacts of proposed developments *early in the EIA process*.

These guidelines are a tool to help developers plan and develop projects that are sustainable – environmentally, economically and socially. Well-conducted SEIA is essential to the overall success of the EIA process and any subsequent development.

The *SEIA Guidelines* will help developers and other involved parties achieve the following:

- Identify the key concepts and goals of SEIA
- Understand how SEIA relates to the unique requirements of the MVRMA
- Clarify the roles and responsibilities of every party involved in the three levels of the EIA process
- Understand the Review Board’s expectations for conducting SEIA during the three levels of EIA
- Access tools, methods and other SEIA resources

# I.4 Layout of the SEIA Guidelines

## Section 1: Using The SEIA Guidelines

General background information about the *SEIA Guidelines* and how the *Guidelines* are linked to other Review Board publications.

## Section 2: Introduction to SEIA

Read this section if you are unfamiliar with SEIA and what SEIA assesses.

## Section 3: Conducting SEIA

The first part of this section is important particularly for developers, reviewers and the preliminary screeners of initial development applications. This section has a variety of tools that can help scope the required level of SEIA effort. The remainder of Section 3 focuses on how the other five steps of SEIA are conducted.

## Section 4: SEIA in Preliminary Screenings

This section describes how to include SEIA during the initial developer analysis and the preliminary screening of initial development applications.

Parties involved when the developer is conceptualizing the proposed development should consult this section and other guidance documents provided by preliminary screeners.

## Section 5: SEIA in Environmental Assessments

This section provides guidance on Review Board expectations, tools, methods and resources for conducting SEIA during environmental assessment (EA).

## Section 6: SEIA in Environmental Impact Reviews

This section highlights differences between EA and environmental impact review (EIR).

## Section 7: Conclusions and Future Amendments

## Appendices





# 2.

## Introduction to Socio-Economic Impact Assessment

# 2. Introduction to Socio-Economic Impact Assessment

## 2.1 What is Socio-Economic Impact Assessment?

SEIA is the systematic analysis used during EIA to identify and evaluate the potential socio-economic and cultural impacts of a proposed development on the lives and circumstances of people, their families and their communities. If such potential impacts are significant and adverse, SEIA can assist the developer, and other parties to the EIA process, find ways to reduce, remove or prevent these impacts from happening.

*Impacts are potential changes caused – directly or indirectly, in whole or in part, for better or for worse – by industrial development activities.*

In the past, EIA focused on direct and indirect biophysical impacts of proposed developments (i.e. impacts of development activities on water, air, land, flora and fauna). In recent years, the impacts of industrial development on society, culture and different forms of economic activity have gained equal importance in EIA.

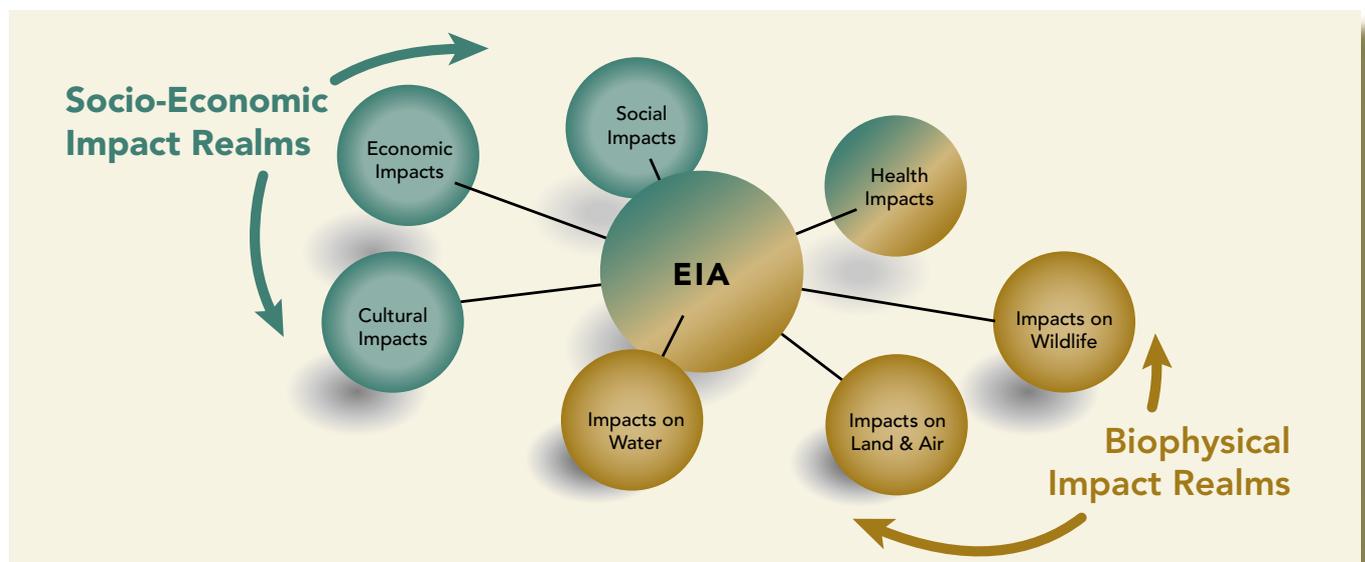
SEIA can identify and distinguish numerous measurable impacts of a proposed development but not every impact may be significant. The people who are impacted, directly or indirectly, have a say in whether impacts on valued socio-economic components are significant.

While SEIA tends to focus on the avoidance of adverse impacts, SEIA also provides a forum for planning how to maximize the beneficial impacts of a proposed development. Beneficial impacts can include: ▶ a better standard of living due to increased access to employment, business opportunities, training and education ▶ greater access to and from a community and ▶ increased funding to improve social infrastructure and cultural maintenance programs.

Specifying how adverse impacts may interact with beneficial impacts, and identifying how to manage these impacts are important steps in SEIA.

The Review Board definition of SEIA recognizes the importance of relationships between people, culture, economic activities and the biophysical environment.

**FIGURE 1** Realms of Environmental Impact



The Review Board pays particular attention to how these relationships affect aboriginal people who have based their economies on Mackenzie Valley lands for millennia. The *SEIA Guidelines* address impacts on traditional economic activities such as hunting, fishing and trapping. These economic activities are inherently social, cultural and interrelated with the biophysical environment.

There is a great deal of overlap between different “types” of impacts; many additional subcategories could be included in each type. For example, impacts on cultural maintenance may include: ▶ loss of language ▶ loss of time on the land ▶ loss of practicing of traditional laws ▶ an altered relationship with the

land and animals and ▶ altered relationships between youth and elders.

Table 1 provides examples of valued socio-economic components and associated issues. SEIA examines these valued socio-economic components before determining whether and how these valued socio-economic components may interact with the components of a proposed development. For example, in the case of health and well-being, potentially affected communities may identify the possibility of a development causing an increased level of sexually transmitted infections and an increased use of alcohol and drugs as socio-economic impacts.

**TABLE 1** Valued Socio-Economic Components

Valued Socio-Economic Component	Issues
<i>Health and well-being</i>	<ul style="list-style-type: none"> <li>• Individual and population health</li> <li>• Community and cultural group cohesion</li> <li>• Family cohesion</li> <li>• Cultural maintenance</li> </ul>
<i>Sustainable wildlife harvesting, land access and use</i>	<ul style="list-style-type: none"> <li>• Hunting, trapping and gathering – traditional economy</li> <li>• Recreational and traditional economy – access to land</li> <li>• Value of alternative land uses (e.g. tourism vs. hunting vs. industry)</li> </ul>
<i>Protecting heritage and cultural resources</i>	<ul style="list-style-type: none"> <li>• The aesthetic, cultural, archaeological and/or spiritual value of places</li> <li>• Maintenance of traditional language, education, laws and traditions</li> </ul>
<i>Equitable business and employment opportunities</i>	<ul style="list-style-type: none"> <li>• Local, regional and territorial business competitiveness</li> <li>• Employment opportunities for local, regional and territorial residents</li> <li>• Training and career development for local, regional, territorial residents</li> <li>• Avoidance of boom and bust cycles (e.g. via economic diversification)</li> </ul>
<i>Population sustainability</i>	<ul style="list-style-type: none"> <li>• In- and out-migration effects</li> <li>• Change in social and cultural makeup of affected communities</li> </ul>
<i>Adequate services and infrastructure</i>	<ul style="list-style-type: none"> <li>• Pressures on social services such as health care, education, and justice</li> <li>• Housing pressures – affordability, availability, and appropriateness</li> <li>• Traffic and road safety – pressures on physical infrastructure</li> </ul>
<i>Adequate sustainable income and lifestyle</i>	<ul style="list-style-type: none"> <li>• Overall amount of money in the community</li> <li>• Uses of money in the community – effects of increased disposable income</li> <li>• Local and regional cost of living</li> <li>• Distribution of costs/benefits among affected people-impact equity</li> <li>• Adverse lifestyle changes – increased gambling, crime, substance abuse</li> </ul>

Those impacts may result from, or be accelerated in part, by any of the following: ▶ having large work camps near small communities ▶ additional in-migration by new workers ▶ the presence of more disposable income in the community and ▶ altered cultural norms.

The main goal of SEIA is identifying such impacts and finding ways to mitigate these impacts.

## 2.2 Considerations for Conducting SEIA

Considering the following is important when conducting and reviewing SEIA:

1. Matching the scale and focus of a SEIA with the characteristics of the proposed development, and the concerns of responsible authorities and potentially affected communities and individuals.
2. Minimizing adverse impacts while enhancing beneficial impacts.
3. Using the “Precautionary Principle” and other internationally-recognized SEIA principles.
4. Focusing on impacts that are at least partially attributable to the proposed development.
5. Involving various potentially affected communities in the SEIA early and extensively.
6. Conducting long-range, forward-looking studies that rely on the insight of past experiences.
7. Impact equity.
8. Using experts from the government, communities and social sciences.
9. Using reliable, appropriate and relevant information from primary and secondary sources.
10. Using appropriate indicators for the Mackenzie Valley.
11. Balancing traditional knowledge and scientific knowledge.
12. Following up and monitoring socio-economic and cultural mitigation measures.

For a more detailed discussion on these important considerations see Appendix B “Considerations for Conducting SEIA.”

## 2.3 SEIA and the Mackenzie Valley Resource Management Act

Part 5 of the *Mackenzie Valley Resource Management Act* (MVRMA) governs the EIA system in the Mackenzie Valley. The Review Board is the main instrument for the environmental assessment and environmental impact review of proposed developments. It submits its EIA findings to the federal Minister of Indian and Northern Affairs Canada (INAC) and responsible ministers for a final decision. The Review Board also reports EIA findings about oil and gas development to the National Energy Board.

SEIA is an important part of the EIA process. SEIA is required during EIA pursuant to section 115 of the MVRMA. Section 115 states:

*“The process established by this Part shall be carried out in a timely and expeditious manner and shall have regard to*

*(a) the protection of the environment from the significant adverse impacts of proposed developments;*

*(b) the protection of the social, cultural and economic well-being of residents and communities in the Mackenzie Valley; and*

*(c) the importance of conservation to the well-being and way of life of the aboriginal peoples of Canada to whom section 35 of the Constitution Act, 1982 applies, and who use an area of the Mackenzie Valley.”*

Section 111 defines “impact on the environment” as:

*“any effect on land, water, air or any other component of the environment, as well as on wildlife harvesting, and includes any effect on the social and cultural environment or on heritage resources.”*

The *Guiding Principles* of Part 5 include regard for protecting the economic well-being of Mackenzie Valley residents. Economic well-being is linked to the social and cultural context of the Mackenzie Valley. This is particularly true for aboriginal populations and small communities that are transitioning from a traditional subsistence economy to a wage economy.

Increased economic activity can stimulate demographic changes and alter social and cultural practices in many ways. A solid analysis of the economic change that a proposed development is likely to cause is thus essential to SEIA.

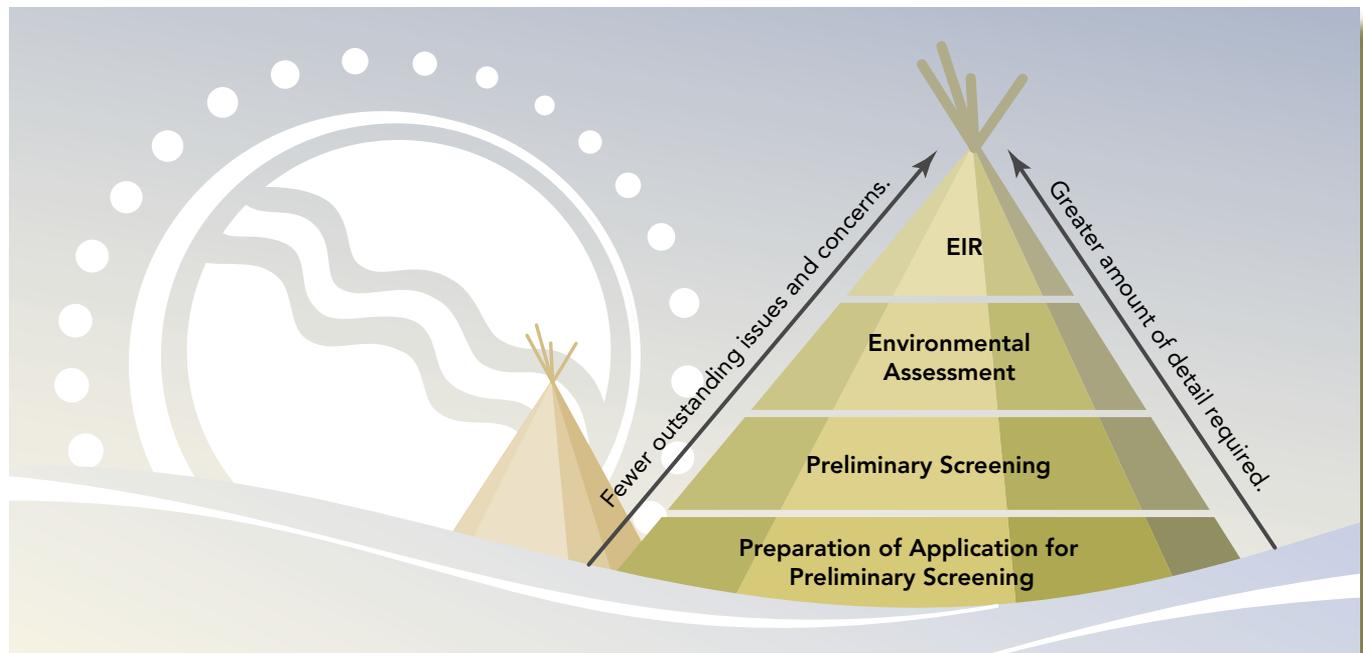
In addition, a primary Review Board responsibility during EIA is identifying whether a proposed development is likely to cause “significant public concern” (MVRMA section 128(c)). The Review Board considers how a proposed development could affect economic well-being when determining the potential for significant public concern.

## 2.4 SEIA and the Mackenzie Valley EIA Process

The following three main factors determine how closely the possible socio-economic impacts of a proposed development are assessed during EIA:

- The level of EIA being conducted
- The nature and scale of the proposed development
- The socio-economic context of the proposed development

**FIGURE 2** Stages of EIA



Sections 114 and 115 of the MVRMA emphasize that EIA is a singular process with three levels:

- Preliminary screening
- Environmental assessment
- Environmental impact review

Before entering the EIA process, a developer must do groundwork when preparing its application.

As illustrated in Figure 2, during each stage of EIA, different and more extensive SEIA information requirements may emerge but the scope of potential issues to examine should narrow.

Developments progress from one stage of EIA to another EIA stage when outstanding impact issues or public concerns remain at the end of the previous EIA level. More than 95 percent of proposed developments in the Mackenzie Valley undergo only a preliminary screening. Preliminary screening usually requires a limited amount of socio-economic data and analysis.

The nature of a proposed development and its socio-economic and cultural context helps define the SEIA expectations. Developers must be familiar with how to determine the scale and scope of issues, and the level of SEIA required for each phase of EIA.

## 2.5 The General SEIA Process

SEIA focuses on questions identified in Table 2.

SEIA answers these questions using a series of steps for

► identifying ► assessing ► mitigating and ► monitoring

the potential impacts of a proposed development. The SEIA steps are similar to those used during the impact assessment of the biophysical environment. However, SEIA requires different data collection methods, information sources, expertise and analytical tools.

**TABLE 2** SEIA Questions

<i>Impact definition</i>	<ul style="list-style-type: none"> <li>• What are the potential socio-economic and cultural impacts of the proposed development?</li> </ul>
<i>Direction of impacts</i>	<ul style="list-style-type: none"> <li>• Is the direction of the potential impacts adverse or beneficial?</li> <li>• Does impact direction shift between different groups and sub-populations? Do some benefit while others don't?</li> <li>• Are the trade offs between potential adverse impacts and potential beneficial impacts acceptable?</li> </ul>
<i>Impact causes</i>	<ul style="list-style-type: none"> <li>• How could the proposed development cause socio-economic impacts?</li> </ul>
<i>Impact attribution</i>	<ul style="list-style-type: none"> <li>• Will the proposed development create new impacts or accelerate/exacerbate existing impacts?</li> <li>• How responsible could the proposed development be for causing an impact? If this is immeasurable, how can the developer estimate the level of responsibility in a manner that is fair and precautionary?</li> </ul>
<i>Impact scope and scale</i>	<ul style="list-style-type: none"> <li>• Which populations and communities will the proposed development most likely impact?</li> <li>• How far and wide, geographically, could individuals and communities feel the impacts of the proposed development?</li> </ul>
<i>Impact manageability</i>	<ul style="list-style-type: none"> <li>• Will potential impacts support or undermine the affected communities' aspirations and goals?</li> <li>• How resilient are the potentially affected communities? How vulnerable are they to adverse impacts?</li> <li>• Will the impacts cause unmanageable change for a community?</li> </ul>
<i>Impact significance</i>	<ul style="list-style-type: none"> <li>• Are the potential impacts likely, adverse and/or significant?</li> <li>• Is mitigation available to manage, reduce or eliminate the potential impacts?</li> </ul>
<i>Impact mitigation and monitoring</i>	<ul style="list-style-type: none"> <li>• Are there existing mitigation measures that have worked for these types of impacts? If so, how can we use them?</li> <li>• How do we track the accuracy of our predictions and use adaptive management to alter mitigation if required?</li> </ul>

## 2.6 The “Six Steps of SEIA”

### 1 Scoping

A preliminary analysis that identifies and prioritizes SEIA considerations and required information. Early and effective scoping narrows the focus of SEIA onto issues of potential significance.

### 2 Profiling Baseline Conditions

Focuses on gathering information about the socio-economic environment and context of the proposed development. This can include defining measurable indicators of valued socio-economic components.

### 3 Predicting Impacts

Based on the analysis of information gathered from issues scoping, baseline profiling and past experiences to predict possible socio-economic impacts. Identifying trade offs between the adverse and beneficial impacts of a proposed development is part of this analysis.

### 4 Identifying mitigation

Predicted adverse impacts require mitigation. Mitigation includes strategies, plans and programs to reduce, avoid or manage impacts.

### 5 Evaluating Significance

Involves determining whether a proposed development is likely to cause significant adverse impacts on valued socio-economic components. If appropriate mitigation measures cannot be identified, a proposed development may not be approved.

### 6 Applying Mitigation & Monitoring

Good mitigation for socio-economic impacts requires good monitoring programs (also known as “follow up”) to ensure the mitigation is working effectively, and, when necessary, the mitigation is adapted as required.





# 3.

## Conducting SEIA

# 3. Conducting SEIA

## 3.1 Early SEIA Roles and Responsibilities

Good SEIA begins prior to development applications during initial developer analysis.

### 1. Preliminary screener

- Advises the developer on relevant guidance documents and possible information requirements for the initial development application<sup>1</sup>

### 2. Developer

- Determines which communities and other groups the proposed development might affect
- Makes reasonable efforts to consult potentially affected groups during initial developer analysis
- Scopes the SEIA to identify valued socio-economic components the proposed development may impact
- Uses the *SEIA Guidelines* to assist in determining an acceptable level of SEIA for the preliminary screening process
- Conducts a level of SEIA appropriate for the proposed development

### 3. Communities and other potentially affected groups

- Communicates with the developer
- Provides local expertise and contextual information when the developer is determining potential impacts
- Identifies key concerns and issues about the proposed development
- Identifies potentially affected parties, the level of public concern, and valued socio-economic components

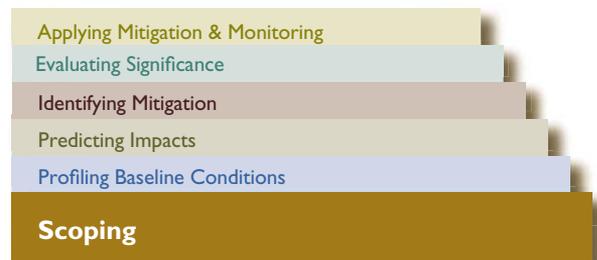
### 4. Government agencies

- Informs the developer of potential legislated or procedural requirements the developer must abide by
- Advises the developer on relevant resource materials and information

### 5. The Mackenzie Valley Environmental Impact Review Board

- Informs the developer about guidance documents, and what information may be required for the EIA process

## 3.2 Scoping the SEIA



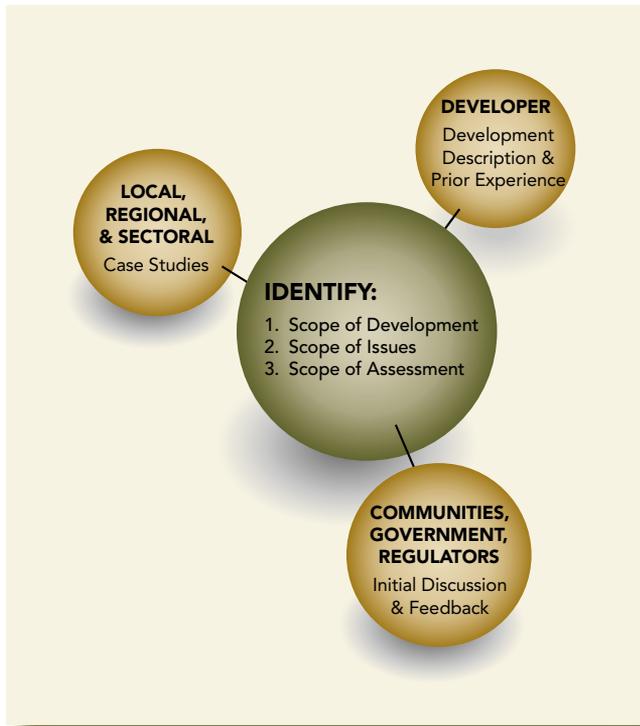
Scoping the SEIA helps the developer determine the following:

- How much SEIA is warranted for preliminary screening
- Potential impacts of the proposed development on the socio-economic environment

Scoping is a critical process that establishes the geographical, temporal, and issue boundaries of SEIA. The main function of scoping is to determine which SEIA issues should be considered during the initial developer analysis. The developer may use various sources to identify key scoping elements, some of which are illustrated in Figure 3.

1. Preliminary screeners conduct this phase of the EIA process. In the Mackenzie Valley, regional land and water boards screen 80–85 percent of development applications. Other preliminary screeners may include territorial and/or federal departments, and the National Energy Board.

**FIGURE 3** Typical Scoping Inputs



Although additional scoping will happen if the proposed development is referred to EA, the developer is expected to do the bulk of SEIA scoping before preliminary screening.

The developer must decide the following about SEIA during scoping:

**1. The scope of development**

This includes the physical works and supplementary developments for each stage of the proposed development. Scoping the development should address the following SEIA issues:

- The **human resources** required for each stage of the proposed development – this includes the developer’s employees, contractors and sub-contractors
- The **skills** required for the proposed development and whether workers with these skills are available, and/or whether workers can acquire these skills locally, territorially or nationally

- The **goods and services** for each stage of development, and likely providers
- Whether new or upgraded **physical infrastructure** is needed for accessing or operating the proposed development

The scope of development should relate directly to the physical nature and work requirements of the proposed development. Cumulative effects assessment also requires consideration of future developments, but only if they can reasonably be expected to happen. For example, a grassroots mineral exploration drilling program should not be assessed on the assumption that the drilling program will result in the development of a large mine. Most mineral exploration programs do not result in mines; therefore, a mine is not considered an expected outcome of grassroots exploration.<sup>2</sup>

**2. The scope of issues**

The developer must identify the perspectives of communities, government agencies and other parties on SEIA issues and concerns, and the potential impacts the proposed development may cause. The developer must consider what community members *believe* are the potential impacts (perceived impacts) of the proposed development because socio-economic impacts are generally linked to people’s perceptions of their environment.

Initial issues scoping is open-ended and inclusive. The developers should make providing and distributing information about the proposed development a priority during scoping. Making potentially affected people and communities aware of the proposed development can help the developer identify key concerns. Public awareness about the proposed project can curtail unrealistic and inflated expectations of the proposed development’s benefits, including undue public concern about potential adverse impacts.

The developer should narrow identified issues and concerns about potential impacts using an “issues-

2. The *EIA Guidelines* have more information about scoping the development and Appendix G6 “Cumulative Impacts and SEIA” discusses how to include consideration of cumulative impacts.

oriented approach.” *An issues-oriented approach identifies issues that are important and possibly related to the proposed development.* Working with SEIA experts and potentially affected communities can help a developer identify important issues. Researching previous similar developments and/or doing impact-prediction exercises can assist the developer predict how individual components of the proposed development may affect or cause impacts.

### 3. The scope of assessment

#### a. Spatial boundaries

Spatial boundaries are the potential geographical limits of possible impacts identified during issues scoping, including the socio-economic footprint of the proposed development. A socio-economic footprint is the geographical area beyond which it is unlikely a proposed development will impact valued socio-economic components. Examining previous similar developments, developing an understanding of local and regional socio-economic dynamics, and consulting informants and experts can help the developer estimate the socio-economic footprint.

The developer should consider which of the following five spatial boundaries are relevant to its SEIA: ▶ individuals ▶ families ▶ communities ▶ regions and ▶ the Mackenzie Valley.

In certain circumstances, such as the SEIA of a large development with broad socio-economic implications, the developer should also consider national and international spatial boundaries.

The developer should not assume information about potential impacts within one spatial boundary applies to another. The developer should determine the following about the spatial boundaries when scoping the assessment:

- Likely human resources, and goods and services providers for the proposed development
- Impacts of the proposed development on valued socio-economic components including traditional, heritage and cultural resources
- Potential access corridors for the proposed development

Boundaries should not be overly restrictive because impacts and potentially affected groups and communities may not be apparent at this early EIA stage. Conversely, boundaries should not be overly flexible because SEIA should assess the spatial boundaries of the various potentially affected groups and communities independently. The developer should establish the spatial boundaries regardless of whether the boundaries traverse jurisdictions.

Spatial boundaries may be discontinuous: communities that may provide labour, transportation and other services for the proposed development should be considered in SEIA regardless of their physical distance from the location of the proposed development (e.g. Fort Smith as a source of labourers for a development in the Sahtu).

#### b. Temporal boundaries

Different stages of a proposed development can cause impacts with different temporal boundaries. Temporal boundaries include the following:

- The **planning stage** when expectations of and speculation about a proposed development can impact the socio-economic environment
- The **construction stage** which is generally a short-term, capital- and workforce-intense phase of development when large infusions of capital and labour may have adverse and beneficial impacts on the socio-economic environment
- The **operational stage** is usually longer in length – impacts on the socio-economic environment during this stage may include the effects of new long-term employment, changing patterns of consumption, increased infrastructure, etc.
- The **closure/decommissioning stage** happens when communities adapt to the removal of the development from the socio-economic environment – this can cause a loss of employment and business, and economic uncertainty
- The **post-development stage** is important because long-range post-closure timelines must be considered when examining the inter-generational impact distribution of larger developments

Answering the following questions can help the developer define the temporal boundaries of the SEIA:

- When will the impacts happen?
- How long will the impacts last?
- How could the impacts change over time, and during the different development stages?
- Could the impacts contribute to the cumulative impacts of previous, present, or potential future developments?

### 3.2.1 Early Community Engagement

Early community engagement is required before the developer submits an application for preliminary screening.

A preliminary screener may conclude a development application is incomplete if it lacks evidence of early community engagement.

**TABLE 3** Checklist of Recommended Activities Before Early Community Engagement

✓	Task
<input type="checkbox"/>	Identify what information is required for preliminary screening.
<input type="checkbox"/>	Identify land-ownership issues that may require access agreements such as the location of the proposed development or an access route to the proposed development that traverses aboriginal lands in settled land claim areas.
<input type="checkbox"/>	Identify relevant community plans, regional land use plans, and other planning documents. Identify whether the proposed development conforms to these plans.
<input type="checkbox"/>	Use community engagement handbooks (see References and Suggested Further Readings) and talk to community-liaison specialist before developing an ethical consultation strategy. Consider whether a consultant is required.
<input type="checkbox"/>	Be aware that if primary social science research is required, the Aurora Research Institute ( <a href="http://nwtresearch.com">nwtresearch.com</a> ) needs to be contacted about research licensing.
<input type="checkbox"/>	Identify which communities should be consulted initially, and explain the rationale for including these communities.
<input type="checkbox"/>	Identify whether each identified community, or the region as a whole, has a specific policy or protocol that dictates how developers should conduct early community engagement.
<input type="checkbox"/>	Research the socio-economic environment and context of the proposed development.
<input type="checkbox"/>	Identify important community contacts.
<input type="checkbox"/>	Produce a preliminary “in-house” list of potential impacts and public concerns. (Use information about the proposed development, research on past developments in the potentially affected region, case studies of similar developments, and existing developments in the region as source material for this list.)
<input type="checkbox"/>	Distribute a plain-language description of the proposed development to involved communities and other parties before hosting any detailed discussions.
<input type="checkbox"/>	Be familiar with SEIA issues commonly brought up by community members; be ready to explain whether these concerns relate to the proposed development.
<input type="checkbox"/>	Establish a mechanism for follow-up communications with communities, but be flexible.

During early community engagement, the developer has the opportunity to familiarize the potentially affected communities with the scale, complexity, and location of proposed development. This can assist the communities identify potentially adverse and beneficial impacts. Early community engagement also provides a forum for the developer to learn of community concerns regarding the proposed development.

## Preparing for early community engagement

Each community will have unique experiences of past developments that influence the community's attitude towards future developments. Before consulting with a community, the developer should be aware of the following:

- The historic background of the community
- The relationship between community members and the environment
- Demographic characteristics of the community
- Internal and external political structures
- The community's relationship with the regional, territorial and federal governments
- Existing community goals and aspirations for economic development and social/cultural well-being
- Existing vulnerabilities and strengths of the community e.g. strong locally delivered social services and healthcare, level of economic dependence on social services, etc.
- The cultural values that shape the perspectives of community members
- Members of the community who are particularly vulnerable to adverse socio-economic impacts and/or under-represented e.g. youth, traditional harvesters, women, and elders

Tools to better understand residents and communities include: demographic profiles from government reports and statistics agencies; media coverage, directories, maps, and books on local/regional culture; analysis of comparable case studies; and initial discussions with government, key contacts in communities, and other developers experienced in the area. See Appendix C for example contact organizations.

## Identifying potentially affected communities and groups

The developer is ultimately responsible for identifying and consulting potentially affected communities and groups during the initial EIA stages. Sometimes identifying potentially affected communities, levels of government and other groups is straightforward, such as when a development is directly adjacent to the community. In other cases, a proposed development may affect the cultures and lifestyles of people from a number of communities in a larger region.

The developer may identify potentially affected communities and other parties through the following suggested activities:

- Talking to various parties in the region about the proposed development
- Engaging initially with any groups that have expressed an interest in the proposed development
- Determining employment requirements, goods and services providers, and transportation routes required for the proposed development; identify likely geographic locations/sources of these resources, recognizing that each community has different levels of skill and business capacities
- Estimating which socio-economic and cultural areas the surrounding communities and land users use, then comparing the spatial boundaries of these areas with the physical footprint of the proposed development
- Using socio-economic data from the GNWT Bureau of Statistics to determine the vulnerability of communities to externally imposed change (e.g. the impacts of increasing participation in a wage economy in a community that relies mainly on a traditional economy)

It may be important for the developer to identify particularly vulnerable groups or sub-populations – such as women, youth and the elderly – who may lack the capacity – financial, political and/or educational – to participate in early community engagement. Identification of directly affected vulnerable groups is not solely so the developer can make these groups the *subjects* of SEIA. The developer should make an extra effort to include vulnerable groups as *participants* in SEIA. Communities

and groups likely to be *more* impacted by a potential development, adversely or beneficially, merit a larger emphasis in impact analysis.

In general, the developer should consult widely during early community engagement. If the developer chooses not to consult with a community that has expressed a concern about the proposed development, the developer should explain why.

### Considerations for Developer-Government Consultation

- Developers should consult with potentially affected levels of government during initial developer analysis. Local, regional, aboriginal, territorial and federal governments have valuable expertise. Many levels of government have socio-economic mandates. In addition, the potential impacts of a proposed development may affect a government's ability to provide services.
- The GNWT is a main source of information for developers. While getting background baseline information about NWT regions and communities from the territorial Bureau of Statistics is encouraged, the GNWT has a "one window" approach to consulting with prospective developers. The territorial Department of Environment and Natural Resources (ENR) should be a developer's first point of contact with the GNWT. ENR represents the interests of the GNWT during EIA. ENR can help developers identify other GNWT departments that have useful information for conducting SEIA.
- Local service providers working for the GNWT such as renewable resource officers, economic development officers and social workers are sources of information about a specific community or region. These service providers can be helpful during SEIA. Please note, however, that local service providers may not be privy to or aware of their department's long-term policy direction, projected budgets and fiscal constraints, and socio-economic indicators and trends.

## Conducting early community engagement for SEIA

No set model exists for community engagement in the Mackenzie Valley. Developers should be aware of any community-specific policies or protocols that define and govern community engagement. Tools for early community engagement include plain-language discussions, individual and group interviews, focus groups, community meetings, open houses, and surveys and polling.

The developer should identify community-capacity issues and tailor consultation efforts accordingly. Sometimes communities are overburdened and lack capacity to participate fully and effectively in consultation. The developer may need to be flexible with meeting dates and tailor meeting content for the audience.

If the developer anticipates that communities will raise socio-economic issues and concerns, the developer should contact a wide range of organizations. See Appendix C "Organizations with SEIA Expertise" for a comprehensive list of potential contacts.

Despite a developer's best efforts, some communities may decide not to participate in the consultation. The developer should make *reasonable efforts* to provide communities with opportunities to become engaged early in the process. If the community decides not to participate, the developer should document and report its communication efforts, and focus on identifying potential impacts on the community using other means.

The developer should include a record of meetings and public comments in the initial development application. (The developer should inform early community engagement participants that such a record is being kept.) This record should document the following information:

- Dates and locations of every meeting
- Names of people and organizations involved
- Topics discussed and views stated
- Any suggestions about potential impacts from communities and/or community members
- Information requests and responses
- Suggested mitigation for potential impacts; identify who made the suggestion

- Every commitment and agreement made in response to public issues
- Any unresolved issues, and suggestions for resolving these issues at a later date

### 3.2.2 Determining the Appropriate Level of SEIA

**Basic SEIA** is generally for proposed small developments unlikely to cause significant adverse impacts or significant public concern.

**Moderate SEIA** is for proposed medium-sized developments with more than a couple of identified potential impacts or proposed small developments with several potential impacts.

**Comprehensive SEIA** is for proposed large, extensive developments or any other proposed development that is likely to have a variety of adverse impacts.<sup>3</sup>

The level of SEIA is governed by the size, complexity, and the socio-economic environment and context of the proposed development. Generally, developers with smaller proposed developments – those with a combination of a small geographic footprint, relatively short timelines, and minimal employment requirements – are expected to do the following:

- Fulfill community-engagement responsibilities and applicable land-access agreement obligations
- Conduct a “Basic SEIA” (see Section 3.2.3 for details)

Less than 10 percent of proposed developments in the Mackenzie Valley find socio-economic issues or concerns that require dedicated attention. Most small proposed developments are unlikely to cause significant adverse impacts.

Grassroots exploration in the oil and gas, and mining sectors are common examples of small developments that are usually expected to do Basic SEIA. The developer may decide to address specific individual issues – rather than conduct a “Moderate” or “Comprehensive” SEIA – if the

proposed development results in any or all of the following:

- Comes into contact with or is in proximity to any sites recognized as having spiritual or cultural significance and/or heritage resources (see Appendix G2)
- Comes into contact with or is in proximity to any sites that are important to the traditional economy and/or may interfere with this or any other alternate economic activities (see Appendix G3)
- Is located in an area already experiencing a high degree of cumulative impacts to the socio-economic environment (see Appendix G5)
- Public concern about how the proposed development may interact with the socio-economic or cultural environment

A Comprehensive SEIA should include a general socio-economic impact overview in its initial application. Preliminary screening has a broad and shallow focus and is the shortest EIA stage, usually with a 42 day maximum timeline. To avoid delay during the EA phase, the bulk of SEIA for large developments should be completed during initial developer analysis.

#### “Level of SEIA Test”

The developer should conduct the “Level of SEIA Test” before submitting an application for preliminary screening (see Table 5). The developer can use knowledge gained during scoping exercises and early community engagement to assist in determining the level of SEIA.

The “Level of SEIA Test” should help the developer identify the degree, development type and/or socio-economic factors of the proposed development which might create significant adverse socio-economic impacts and/or cause public concern.

The MVRMA does not specify the level of effort for collecting SEIA information; therefore, the developer should base its informed judgment about the required level of SEIA on consultation, prior experience, case studies, and reasonable expectations and predictions.

3. Notice that in the examples used here, identifying adverse impacts is the focus. The MVRMA focuses on identifying and mitigating these adverse impacts. In reality, SEIA includes the study of trade offs between adverse impacts (also called costs) and beneficial impacts (also called benefits). The use of the adverse terminology herein is not meant to construe that development has only adverse impacts, or that SEIA does not consider beneficial impacts. Enhancements and trade offs between adverse and beneficial impacts are always considered.

**TABLE 4** Comparing the Expectations of Basic, Moderate and Comprehensive SEIA During Initial Developer Analysis

Level of Effort	Information Expectations	Recommended Content	Focused On...
<b>Basic SEIA</b>	<i>Low</i> <ul style="list-style-type: none"> <li>• Simple</li> <li>• Mainly quantitative information from secondary sources</li> </ul>	<ul style="list-style-type: none"> <li>• Scoping</li> <li>• Minimal baseline data</li> <li>• Impact prediction</li> <li>• Mitigation</li> </ul>	<ul style="list-style-type: none"> <li>• Specific impacts only</li> </ul>
<b>Moderate SEIA</b>	<i>Moderate</i> <ul style="list-style-type: none"> <li>• Secondary research requiring either no primary research, or a moderate amount of primary research</li> </ul>	<ul style="list-style-type: none"> <li>• Scoping</li> <li>• Baseline conditions</li> <li>• Impact prediction</li> <li>• Mitigation</li> </ul>	<ul style="list-style-type: none"> <li>• Identified and defined impacts</li> <li>• Acquiring basic information about the socio-economic environmental context</li> </ul>
<b>Comprehensive SEIA</b>	<i>High</i> <ul style="list-style-type: none"> <li>• SEIA started well in advance of submitting the development application for preliminary screening</li> <li>• Primary and secondary research required</li> </ul>	<ul style="list-style-type: none"> <li>• Scoping</li> <li>• Baseline conditions</li> <li>• Impact prediction</li> <li>• Initial significance determination</li> <li>• Mitigation</li> </ul>	<ul style="list-style-type: none"> <li>• Every area of possible impact</li> <li>• A detailed understanding of socio-economic environment and context</li> </ul>

Before applying the “Level of SEIA Test,” the developer is expected to consider whether past developments of a similar size, type, location, or past developments with similar levels of complexity have been referred to EA. The developer can usually access information about past developments through the online electronic public registries of the land and water boards and the Review Board, and/or through consultations with informants in communities, government representatives, and consultants. In addition, the developer should note whether similar past developments impacted valued socio-economic components.

### Considerations for the scope of assessment and level of SEIA effort

Table 5 will assist the developer in determining the scope of assessment and level of SEIA. While some of the information used to complete this subjective “test” can be collected from existing reports, valuable information can also come from potentially affected communities and responsible government authorities. The developer is responsible for documenting its findings and rationale for selecting value ranges.

The higher the value of the variable – the more heavily the variable is weighted toward potential impacts occurring or potential public concern – the greater the need for additional SEIA of the specific variable and/or the issues of concern. The overall level of SEIA effort required rises according to the number of high-potential variables.

**TABLE 5** Considerations for the Scope of Assessment and Level of SEIA Effort

Assessment Variable	Questions and Example Indicators	Low Potential	High Potential
<b>Level and nature of concern</b>	<ul style="list-style-type: none"> <li>Do the developer's commitments address community concerns?</li> <li>What is the level of public concern about previous developments?</li> <li>Is the community ready/comfortable with this type of proposed development?</li> </ul>	Yes Low level of concern Yes	No High level of concern No
<b>Level of interest</b>	<ul style="list-style-type: none"> <li>Does the community want to work with developer on SEIA?</li> <li>What is the level of interest in the proposed development?</li> <li>What is the level of community expectations?</li> </ul>	Yes None Low	No Very high High
<b>Community development issue</b>	<ul style="list-style-type: none"> <li>How well does the development fit into existing community or regional plans?</li> <li>Are there obvious divisions within the community that SEIA should address?</li> </ul>	Excellent fit No	Poor fit Yes
<b>Physical size of the proposed development</b>	<ul style="list-style-type: none"> <li>Physical footprint</li> <li>Associated linear developments such as roads, power lines, etc.</li> <li>Required associated physical infrastructure</li> </ul>	Small None None	Large Extensive Extensive
<b>Relative economic value</b>	<ul style="list-style-type: none"> <li>Vibrant wage economy, mixed or more traditional economy?</li> <li>Current socio-economic status?</li> </ul>	Predominant wage economy Low unemployment	Predominant traditional economy High unemployment
<b>Development timeline</b>	<ul style="list-style-type: none"> <li>Development duration</li> <li>Duration of potential positive and negative effects</li> <li>Duration of major labour and service requirements</li> </ul>	Short, <1 year Short, <1 year Short, <1 year	Long, >20 years Long, >20 years Long, >20 years
<b>Complexity of proposed development</b>	<ul style="list-style-type: none"> <li>Intrusiveness of the activity</li> <li>Reliance on outside expertise</li> <li>Level of technology</li> <li>Potential for pollution</li> <li>Severity of worst-case scenario</li> </ul>	No/limited intrusiveness Low percentage Low Low Low	Very intrusive High percentage High High High
<b>Economic scale</b>	<ul style="list-style-type: none"> <li>Capital cost</li> <li>Expected employment multipliers</li> <li>Annual operating costs</li> </ul>	<\$1 million Low Low	>\$300 million High High

Continued...

**TABLE 5** Considerations for the Scope of Assessment and Level of SEIA Effort *Continued*

Assessment Variable	Questions and Example Indicators	Low Potential	High Potential
<b>Labour force, services and supplies required</b>	<ul style="list-style-type: none"> <li>• Number of person years of work</li> <li>• Types of workers/services required</li> <li>• Average duration of employment</li> </ul>	Low, <20 person years Low skill level Short-term	High, >2000 person years High skill level Long-term
<b>Capacity of communities</b>	<ul style="list-style-type: none"> <li>• Skill levels required vs. available skilled labour</li> <li>• Local education and training demographics</li> </ul>	Good fit  Poised to take advantage	Poor fit  Little capacity to take advantage
<b>Community experience</b>	<ul style="list-style-type: none"> <li>• Is there local experience of this type of development?</li> <li>• Nature of development experience</li> <li>• Do case studies of previous developments highlight socio-economic impacts and potential public concerns?</li> </ul>	Yes  Predominately positive Several examples to draw from	No  Predominantly negative Few examples to work from
<b>Previous, current or future developments in area</b>	<ul style="list-style-type: none"> <li>• What is the potential for significant cumulative effects to (examples only): families, wildlife harvesting, social services, education, cultural resources, health, infrastructure, etc.</li> </ul>	<i>(for each variable)</i> Unlikely	<i>(for each variable)</i> Likely
<b>Proximity to sites of historic or current socio-economic and cultural significance</b>	<ul style="list-style-type: none"> <li>• Particular aesthetic values of place</li> <li>• Locations of spiritual significance</li> <li>• Level of possible or documented archaeological resources (contact the Prince of Wales Northern Heritage Centre for assistance)</li> </ul>	No to low value No incidence Low density of possible archaeological resources	High value High incidence High density of possible archaeological resources
<b>Proximity to important wildlife harvesting locations</b>	<ul style="list-style-type: none"> <li>• Density of important game animals in area</li> <li>• Sensitivity of land and animals in the area to development</li> <li>• Importance of traditional economy to potentially affected communities</li> </ul>	Low density  Low sensitivity  None	High density  High sensitivity  High
<b>Alternative land uses and current level of use</b>	<ul style="list-style-type: none"> <li>• Will the proposed development affect the ability of traditional users to go on the land?</li> <li>• Are there alternative economic or non-economic uses of the land?</li> </ul>	No  No	Yes  Yes
<b>Proximity to communities and level of interaction</b>	<ul style="list-style-type: none"> <li>• How close is the proposed development to communities?</li> <li>• How easily will the labour force interact with the communities?</li> </ul>	Distant  No access	Close  Easy access

*Continued...*

**TABLE 5** Considerations for the Scope of Assessment and Level of SEIA Effort *Continued*

Assessment variable	Questions and example indicators	Low Potential	High Potential
<b>Size and demographic makeup of nearby communities</b>	<ul style="list-style-type: none"> <li>Communities with different demographics and size will respond differently to the proposed development</li> </ul>	Non-traditional life style Large population	Traditional lifestyle Small population
<b>In/out migration patterns and population growth in potentially-affected communities</b>	<ul style="list-style-type: none"> <li>Could the proposed development result in population changes in communities/region?</li> <li>Will there be additional pressures on public services/infrastructure?</li> </ul>	Small change No changes	Large change Increased demand
<b>Identification of vulnerable communities</b>	<ul style="list-style-type: none"> <li>e.g. Are women, youth and/or elders vulnerable?</li> </ul>	No vulnerable groups	Many vulnerable groups

### 3.2.3 The Different Levels of SEIA Effort

Each level of SEIA effort builds on the requirements of the previous level.

#### Basic SEIA

The developer should give the preliminary screener and reviewers information that assures them the proposed development ▶ is small and simple ▶ has negligible or manageable socio-economic impacts, and ▶ does not require mitigation beyond the developer’s proposed mitigation.

If Basic SEIA highlights any potential impacts that might be significant or cause public concern, the developer should examine these specific issues using the prediction, mitigation and significance tests of Moderate SEIA.

The developer should include the following in its development application for Basic SEIA:

1. A record and description of efforts to consult potentially affected communities and other parties
2. A development description, including the following socio-economic data:
  - Total estimated capital costs of the proposed development, including annual operating costs

- Approximate number of workers including the developer’s employees and contractors, and number of person days/years of work for the proposed development, including subcontracting
  - Identified archaeological resources within the footprint of the proposed development
  - A list of any extra regional infrastructure required for the proposed development to proceed
3. Any identified potential impacts on the socio-economic environment, and suggestions for mitigating these impacts

Table 6 can help the developer identify major SEIA categories during EIA. For each category with potential impacts, the developer should predict ▶ how the proposed development might interact with valued socio-economic components ▶ why it is expecting the proposed development may cause adverse impacts or public concern, and ▶ which communities and/or areas might be impacted.

#### Moderate SEIA

During Moderate SEIA, the developer should focus on identifying specific potential relationships between the proposed development’s potential impacts and valued socio-economic components. If the developer identifies a potential impact, it should evaluate the significance of the impact, and research and propose possible mitigation.

**TABLE 6** Sample SEIA Issues and Mitigation Worksheet

Impacts On ...	Description of predicted adverse impacts and proposed mitigation
▶ Housing	(access, appropriateness, affordability)
▶ Family/household stability	
▶ In-migration and out-migration	
▶ Maintenance of cultural values such as language	
▶ Access to land for traditional uses	
▶ Traditional economy-harvesting success	
▶ Income and levels of disposable income	
▶ Cost of living and inflation	
▶ Employment levels	
▶ Community expectations	
▶ Business opportunities	
▶ Gender equity	
▶ Inter-generational equity	
▶ Access to education/training and their perceived value	
▶ Human health concerns including access to services	
▶ Pressure on infrastructure (roads, buildings)	
▶ Public safety concerns	
▶ Level and accessibility of social services provided	
▶ Lifestyle choices	
▶ Boom and bust economic cycles	
▶ Archaeological/heritage resources	

Moderate SEIA requires the following:

1. Information required for Basic SEIA
2. Consideration of the suggested information requirements listed in Table 7

During Moderate SEIA, the developer will probably collect information from case studies, discussions with communities and other parties, and local, regional and territorial socio-economic statistics. Limited primary research, if any, is needed.

### Identifying valued components

It is essential that the developer identify valued components during Moderate SEIA. Valued components are parts of the biophysical, socio-economic and cultural fabric of a community or region that are important to the community who defines them.<sup>4</sup> Using traditional and local knowledge is especially important when identifying valued socio-economic components because the socio-economic environment is a lived experience. Valued socio-economic components vary widely because their value is based on a community's priorities and aspirations.

Valued socio-economic components are best identified – and more easily measured – in *goal-based* statements rather than passive statements. The following are commonly identified valued socio-economic components (this list is not exclusive):

- Preserving and protecting heritage and archaeological resources
- Maintaining and enhancing harvesting activities and the traditional economy
- Maximizing local and regional business opportunities (employment, training and/or a share of development revenues)
- Protection from undesirable social consequences of introducing temporary workers into the community
- Maintaining the aesthetic qualities of the built and natural environments
- Providing and maintaining adequate physical and social infrastructure

**TABLE 7** Suggested Information Requirements for Moderate SEIA

Component	Information Requirements
<i>Principal activities and development components associated with constructing, operating, maintaining and decommissioning the proposed development (scope of development)</i>	<ul style="list-style-type: none"> <li>• The physical works, associated energy, goods and services, and labour required for the proposed development</li> <li>• Approximate number of workers and anticipated work-rotation schedule</li> <li>• Whether a camp or other accommodation is necessary</li> <li>• A list of additional physical and social infrastructure requirements associated with the proposed development, ancillary activities or expected indirect increases i.e. in-migration to region</li> <li>• Number of person days/years of work associated directly with the proposed development, including subcontracting</li> <li>• Percentage of required labour requiring skilled trades people versus non- or semi-skilled, along with a list of jobs available</li> <li>• Estimated percentage of jobs that could be filled by people living near the proposed development or people from other potentially affected communities</li> <li>• Estimates of required in-migrant workers and likely transportation and accommodation scenario(s)</li> </ul>

*Continued...*

4. Appendix D has a list of valued socio-economic components often identified in the Mackenzie Valley.

**TABLE 7** Suggested Information Requirements for Moderate SEIA *Continued*

Component	Information Requirements
<i>Timing and duration of the proposed development</i>	<ul style="list-style-type: none"> <li>• Total time length of the proposed development (including breakdown into construction, operation, closure and reclamation stages)</li> </ul>
<i>Description of local study area</i>	<ul style="list-style-type: none"> <li>• Description, including maps, of proposed development's relative proximity to any of the following:               <ul style="list-style-type: none"> <li>o heritage resources, burial sites and other sites of special significance</li> <li>o valuable traditional harvesting sites and traditional trails</li> <li>o areas with high recreational/aesthetic values</li> <li>o communities</li> </ul> </li> </ul>
<i>Description of baseline physical character of the proposed site</i>	<ul style="list-style-type: none"> <li>• Are there biophysical environment sensitivities that merit special attention because of their interaction with the socio-economic environment?</li> <li>• Any feasible alternative locations for the development</li> </ul>
<i>Financial considerations</i>	<ul style="list-style-type: none"> <li>• Total estimated development capital costs, broken down by component and timeline</li> <li>• An estimate of any local or regional employment or business multipliers</li> <li>• New business opportunities which might be created</li> <li>• Estimated changes in the cost of living, including information from case studies of similar developments</li> <li>• Estimated costs of development not borne by developer, e.g. government cost associated with maintaining infrastructure</li> </ul>
<i>Land ownership/use status</i>	<ul style="list-style-type: none"> <li>• Land ownership status of the proposed development location, and any aboriginal-owned lands on transit corridors requiring access agreements or other considerations</li> <li>• Review of land use plans for conformity</li> <li>• Who uses the land? What are the prevalent and other alternative land-use types?</li> </ul>
<i>Identification and description of relevant valued components and their baseline conditions (see text)</i>	<ul style="list-style-type: none"> <li>• Valued socio-economic components should be defined, whenever possible in consultation with the potentially affected parties; only valued socio-economic components that the proposed development may impact should be included</li> <li>• The developer can use secondary qualitative and quantitative information, and the results of early community engagement to describe the baseline conditions of the identified valued socio-economic components</li> </ul>
<i>Impact prediction that emphasizes the interaction between the proposed development and valued socio-economic components (see text)</i>	<ul style="list-style-type: none"> <li>• Type and degree of potential interaction between the proposed development components and the communities' socio-economic and/or cultural environment and context</li> <li>• Impact prediction should include predicted beneficial impacts so reviewers can analyse trade offs</li> </ul>
<i>Estimate of required mitigation</i>	<ul style="list-style-type: none"> <li>• Provide details about proposed mitigation for identified adverse impacts</li> </ul>
<i>Estimate of significance</i>	<ul style="list-style-type: none"> <li>• An initial estimate of the significance of residual impacts remaining after mitigation is applied</li> </ul>

## **Interactions between components of the proposed development and valued socio-economic components**

Determining how the various components of the proposed development may interact with valued socio-economic components is important during Moderate SEIA. For example, new roads may increase in- migration *and* out-migration, or more jobs may cause a variety of lifestyle changes for community members and increase the amount of disposable income in the community.

In the absence of a Comprehensive SEIA, the developer can use the worksheet in Appendix F as a tool for predicting impact relationships between components of the proposed development and the valued socio-economic components.

## **Comprehensive SEIA**

Comprehensive SEIA recognizes that the size and complexity of a proposed large development will likely impact a variety of socio-economic valued components, and, consequently, society in general. A proposed development requiring a Comprehensive SEIA will likely be referred to EA. Even though a Comprehensive SEIA is not a preliminary screening requirement, beginning a Comprehensive SEIA before preliminary screening may resolve certain issues before the EA begins.

Proposed complex large-scale and long-term developments such as large mines, oil and gas operations, pipelines and major infrastructure such as large new highways and hydroelectric dams are generally referred to EA. If the developer is proposing a similar scale of development, the developer should follow the guidance provided in this section for using the “Six Steps of SEIA.”

SEIA for a proposed complex large-scale and long-term development should start well before the developer submits an application for preliminary screening. SEIA for large developments should follow a similar timeline as profiling the baseline conditions of the biophysical environment.

While the expectations identified in this section should guide the developer on the type of assessment for initial developer analysis during Comprehensive SEIA, reporting requirements will be lower during preliminary screening than in EA.

Preliminary screening has a broad focus and is typically the shortest of the three possible stages of EIA. The developer should consider including the following information when drafting the development description:

1. The information required in a Moderate SEIA.
2. An expanded survey and review of the local study area, including a list of identified potentially affected communities and levels of government, with a brief rationale for their inclusion.
3. An initial study of cumulative impacts on the valued socio-economic components the proposed development may contribute to (the developer should also include information about other developments that may add to the cumulative impacts).
4. A table of identified potential adverse and beneficial impacts the proposed development may cause independently or in combination with other developments; this table should include an initial estimation of significance. The developer should include identified valued socio-economic components that are categorized according to appropriate benchmarks and indicators. If the developer finds “no significant impacts,” it should explain why.

Data collection requirements during a subsequent EA will build on, not replace or duplicate, any work done during the initial developer analysis. Developers of proposed large developments that have several years of lead-time before applying for permits and licenses, are recommended to use this time wisely: inadequate early SEIA-information collection and analysis can impede the progress of an EA.

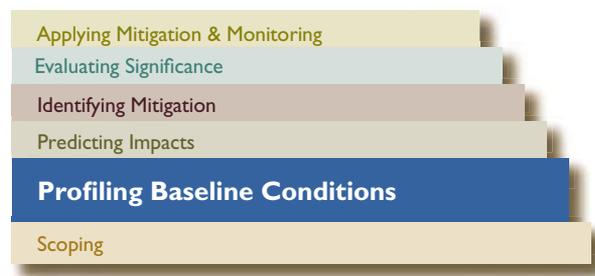
In order to understand the impacts of large developments, a detailed understanding of the socio-economic environment and its inherent dynamics is necessary. For example, a diamond mine located in the barren lands will not only impact the closest aboriginal communities. A large development impacts several regional centres, the territorial capital, entire regions, and, generally, the entire NWT. Large developments also draw significantly on resources from other jurisdictions.

In summary, the developer of a proposed large-scale development should not treat SEIA lightly during preliminary screening. The developer should use the period before and during preliminary screening to begin a Comprehensive SEIA in preparation for EA. This period is an opportunity for the developer to:

- Create a dialogue with potentially affected communities and other parties
- Address and resolve socio-economic issues
- Complete most of the initial SEIA work

These efforts should sharpen the focus of the EA scope, reduce timelines, and improve the analysis of critical issues and development decisions.

### 3.3 Profiling Baseline Conditions



The developer is expected to collect and thoroughly interpret information about the socio-economic environment and context of the proposed development. This interpretation should address past and current conditions and trends. An understanding of relevant trends and the socio-economic dynamics of an area is essential to predicting how much future change is likely, and how much the proposed development may affect this change. The developer needs this information to assess how the proposed development may impact valued socio-economic components.

The developer's socio-economic baseline condition profiling should identify the resilient and vulnerable members of potentially affected communities.

See Section 3.2.1 for further information on this topic. For large, complex developments, the developer should conduct baseline condition profiling well before the Review Board issues the TOR.

#### Baseline condition profiling follows these three steps:

1. Choosing methods and tools for collecting baseline data
2. Determining relevant benchmarks and indicators
3. Profiling the baseline conditions

#### 1) Choosing methods and tools for collecting baseline data

The developer may choose the methods and tools for collecting baseline data. However, the Review Board evaluates the relevance and quality of the developer's chosen methods and tools when determining the weight and adequacy of the developer's evidence. The developer should choose methods and tools that are:

- **Reasonable and cost effective** – the level of effort for gathering baseline data should be in line with the size, cost, socio-economic environment and context, and the degree of the proposed development's predicted impacts
- **Relevant** – the collected data should link logically with the issues and concerns identified during scoping
- **Accessible** – for potentially impacted communities to understand and contribute to the SEIA, they must be comfortable with the methods and tools the developer chooses
- **Responsive, representative and engaging** – the methods and tools should allow communities and vulnerable sub-populations to be involved, directly or indirectly, in collecting baseline data

#### a) Using existing information

The developer should use existing social research (secondary data collection) and original social research (primary data collection) as necessary. The developer should use existing studies first, and original social research only when there are gaps in the baseline data.

Sources of existing studies and data include reports, statistics and community and regional planning documents. Many resources are also available from a variety of organizations that are not parties to the EA of the proposed development. Such sources include the following:

- The SEIA of other developments in the territory/region, such as previous EIAs
- Sector-specific case studies and reports from industry associations
- Territorial and federal government documents about social and economic issues
- Basic and advanced statistical information about demographics, the labour force and a variety of other subjects, including census data collected by Statistics Canada and the GNWT Bureau of Statistics
- Territorial, community and regional development plans
- Impact benefit agreements (non-confidential portions) and socio-economic agreements from similar operations
- Community studies of traditional/local knowledge of ▶ the traditional economy ▶ heritage resources ▶ historic and current forces of socio-economic change

▶ community vulnerability and resilience ▶ valued components ▶ housing ▶ vulnerable sub-populations such as children and young people, and ▶ community wellness, etc.<sup>5</sup>

## b) Conducting primary research

Primary data is gathered directly in the field. The level of detail is higher in primary data than secondary data. The developer may need primary data when comparing alternatives to the components of the proposed development.

Collecting primary data is more expensive and labour-intensive than collecting secondary data. The developer should only use primary data when the existing secondary data is missing information that is critical to the SEIA. Non-experts should not collect primary data; the developer is responsible for employing experts for this type of work.

Table 8 lists some methods used to conduct primary research.

Due to the small population and low population density of the NWT, researchers conducting primary research may strain the resources of communities, NGOs and

**TABLE 8** Sample Primary Data Collection Methods

Tool	Description
Interviews with key informants	Formal documented interviews with ▶ political representatives ▶ government officials ▶ NGOs ▶ community health practitioners ▶ law enforcement agencies, and ▶ local social service providers, etc.
Surveys/questionnaires	Well-designed surveys of community members can allow people to express their concerns, and identify possible relationships between the impacts of the proposed development and valued socio-economic components. Knowledge of survey design is essential. Surveys can be done at the individual, worker, or household level.
Community meetings	Public meetings can be essential, particularly during scoping, in identifying issues and mitigation. Meetings are useful when assessing broad issues and maintaining communication between the assessor and affected parties.
Focus groups/workshops	These types of structured discussions between assessors and small groups of informed people allow assessors and potentially affected groups to identify areas of agreement and disagreement about social impacts and mitigation.

5. See References and Suggested Further Readings for examples of traditional/local knowledge studies

governments who are often expected to be involved directly in primary research. In the interests of building an inventory of comparable baseline data, the Review Board encourages developers to contact the GNWT Bureau of Statistics about the availability of existing data.

### c) Incorporating traditional knowledge and local knowledge

The Review Board recognizes that traditional knowledge is not only ecological knowledge. Traditional knowledge encompasses ▶ specific observations ▶ knowledge of social and cultural trends ▶ values or statements of cause and effect, and ▶ impact predictions. Refer to the *Guidelines for Incorporating Traditional Knowledge into Environmental Impact Assessment* for further information.

Unlike traditional knowledge, local knowledge is not exclusive to aboriginal people. Local knowledge is based on repeated first-hand observations and personal experiences over a long period; it can help define the socio-economic context. Non-aboriginal Northern residents, experienced local social service providers,

community leaders and other community members may have important local knowledge.

### 2) Determining relevant criteria, indicators and benchmarks

Understanding the current and trend status of valued components requires the developer find appropriate criteria and indicators.

*Valued components* are very broad considerations requiring separation into sub-categories for more in-depth analysis. These *criteria* can be further broken down into measurable data variables called *indicators*. For example, criteria used to assess the valued component of economic well-being may include cost of living, employment levels, and business activity. Indicators to assess cost of living may in turn include annual inflation rates and the Housing Cost Index, which compares housing costs across all NWT communities using Yellowknife as the benchmark (a set standard which can be used to measure differences in an indicator across time or space).

#### Data Collection Challenges

When working with small communities, the sensitivity of many social, economic and cultural issues, and competing community needs can make collecting primary data difficult for an impact assessor. The following guidance is offered:

1. Ensure that available research has been identified and considered; government departments often have this information.
2. Be familiar with the permitting requirements for conducting research on human subjects in the NWT.
3. Be aware of privacy rights and confidentiality concerns because the results of small community samples may identify individuals. Contact the GNWT's Bureau of Statistics or the Aurora Research Institute for information about survey ethics.
4. Be aware of any community-generated documents that address confidentiality, the transfer of traditional knowledge to outside parties, and/or the right to refuse participation.
5. Use quantitative and qualitative surveys when trying to understand socio-economic dynamics – numbers can mask differences within the community.
6. Be aware of the respective strengths – comprehensive, reliable and easy to replicate – and limitations – non-representative data, bias, and sampling errors – of existing secondary sources, and possible primary research methods, before collecting data.
7. Consult experts and government departments ahead of time to avoid duplication and errors.

The developer is responsible for determining which criteria and indicators to use in SEIA research. The following considerations can help the developer determine which indicators and benchmarks are applicable to the SEIA:

- **Relative importance** – relevance to the valued socio-economic components identified by communities and other parties to the EA.
- **Agreement** – the best indicators are those the parties agree on; in the absence of consensus, indicators can be identified through ranking exercises in focus groups, etc.
- **Appropriate level of detail** – wherever possible, data should be separated geographically and demographically. This allows the developer to identify differences between communities, aboriginal and non-aboriginal populations, and the concerns of vulnerable sub-populations. Indicators that can be applied at the community level or specific demographic groups should be used because regional data may not capture important distinctions between communities.
- **Data timelines** – the longer the collection period for an indicator, the better the understanding of trends. Consistent and frequent gathering of information (to maintain rigorous comparability over time) is also a consideration.
- **Rigor and replicability** – e.g. the GNWT Bureau of Statistics and Statistics Canada have reliable methods and practices that may be weighted more heavily than a small survey of 50 people.

Appendix D has a list of criteria and indicators for different SEIA themes.

### 3) Profiling baseline conditions

The developer should describe the current socio-economic and cultural environment and context of the proposed development. For example, during EA baseline condition profiles must address every valued socio-economic component in the “Description of the Existing Environment” portion of the TOR (see Appendix E for example considerations).

The developer should include the following:

- A description of profiled communities and regions; this may be brief if the proposed development is relatively small with minimal potential impacts.

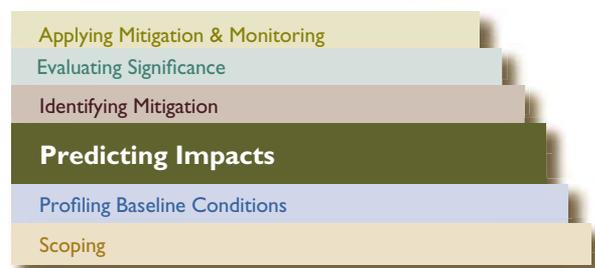
A much deeper understanding of the socio-economic environment and context may be required for the SEIA of large proposed developments.

- A rationale for the indicators used to describe current and historic conditions – i.e. how they relate to valued socio-economic components – and citation of any sources used.
- The history and status of the indicator, and any trends affecting the indicator that the developer must consider when predicting the vulnerability of the community to development-driven change.

If representatives from the community and/or government are concerned about the accuracy, depth, inclusiveness, or indicator focus of the developer’s community profiles, they should make these concerns known to the developer and the assessment authority. For example, during EA the Review Board may ask the developer follow-up questions in the form of Information Requests, or seek to enhance data by identifying additional sources for consideration.

The developer may be expected to profile baseline conditions in individual communities and/or regions. Communities and government departments may also include their own community profiles in any technical reports during the SEIA. Good SEIA emphasizes that communities should have an opportunity to comment on any findings before the SEIA proceeds from the “Profiling Baseline Conditions” step to the “Predicting Impacts” step.

## 3.4 Predicting Impacts



Initially, the developer is responsible for predicting impacts. Predicting impacts is a process of comparing the baseline status of potentially affected communities/ jurisdictions with the development component data, in order to characterize and predict the likelihood of adverse socio-economic impacts.

The predicted impacts should reflect the difference between a future with the proposed development and a future without the proposed development, as illustrated in Figure 4.

The developer should have a good baseline profile before predicting potential impacts because the baseline conditions profile will help the developer with the following:

- Establishing useful indicators and benchmarks for valued socio-economic components
- Identifying background change rates (trends) in socio-economic conditions.

To determine which potential trends may be attributable to the proposed development, the developer must study existing trends. However, the developer must consider data about expected potential trends the proposed development may impact during cumulative impact prediction, and determine whether these impacts are manageable.

In many cases, whether an impact is adverse or beneficial depends on an individual’s personal choice. For example, increased disposable income can create stronger families, brighter futures for children and greater health; or it can fuel anti-social behaviour. In addition, the socio-economic environment will continue to evolve whether development occurs or not; this makes attributing change to one factor, or a number of factors, a difficult exercise.

The occurrence of two simultaneous events such as the opening of a new mine and a critical housing shortage in one community does not mean one event caused the other. Development is not the only force of socio-economic change in the Mackenzie Valley. The developer is not responsible for mitigating every adverse impact on a community. SEIA practitioners use a variety of tools to address these complex issues.

There are many ways to make reasonable and useful predictions of how change may affect people. For example, the history of a cultural group may provide information about the group’s possible response to future impacts. A developer may compare similar developments in other jurisdictions to model potential impacts. Identifying how the components of a proposed development can change or alter existing socio-economic and cultural practices, activity levels and/or land use practices is essential in SEIA.

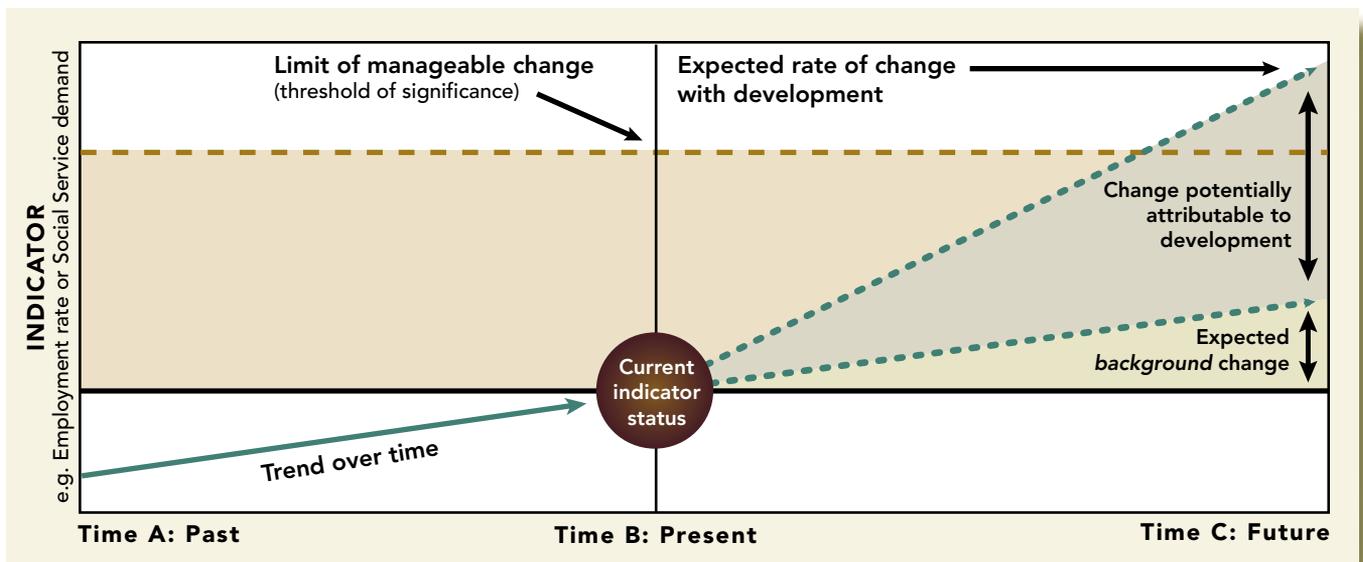
### 3.4.1 Characterizing Impacts and Pathways

Predicting impacts during SEIA requires the developer to determine the likely impacts and their possible causes.

#### 1) Determining the likely impacts

The developer’s impact predictions must identify and characterize the potential direct, indirect and cumulative impacts of its proposed development.

**FIGURE 4** Impact Prediction



*Direct impacts* are the direct consequences of a proposed development's location, construction or operation on the socio-economic environment. The direct socio-economic impacts of a large-scale development are often manifested as changes in socio-economic structures (e.g. increased employment opportunities, increased income levels, new or expanded social services, etc.).

*Indirect impacts* are the secondary consequences of direct impacts (e.g. altered consumption patterns, increased business opportunities and/or an increased need for particular services). The types of indirect impacts that the proposed development may cause depend largely on an individual and/or community's priorities, and their ability to manage change.

When predicting impacts, including indirect impacts, the developer should examine case studies of similar developments, or the impacts and effects of industrial activities on similar communities.

*Cumulative impacts* are repeated impacts on a valued component. The accumulation of insignificant impacts happening over time can cause one significant impact. Addressing cumulative impacts during EA is a requirement of the MVRMA. An example of a cumulative impact is the effect on housing availability and the cost of living in a community that is experiencing an extended period of in-migration of people employed by several consecutive developments in one region. Appendix G6 looks closer at cumulative impact assessment in SEIA.

Each potential impact related to the proposed development should be characterized according to the following:

- Nature or type of the impact
- Direction of the impact i.e. adverse vs. beneficial
- Magnitude of the impact
- Geographical and interest group range of the impact (who is going to be impacted?)
- Timing of the impact including duration, frequency and extent
- Degree to which the proposed development is a contributing factor to the impact
- Likelihood of the impact occurring
- Manageability of the impact (i.e. is it easy or difficult to shoulder and, or mitigate?)

## 2) Determining impact triggers and pathways

The developer, and other involved parties, are responsible for reporting which components of the proposed development may cause the impact (the trigger), and the socio-economic and cultural pathways of the impact. Understanding these two factors is useful when determining appropriate mitigation. Mitigation for socio-economic impacts may involve altering the components of the proposed development, or altering patterns of socio-economic interaction to reduce adverse impacts. The worksheet in Appendix F will assist in identifying these factors.

Socio-economic research tools can help the developer characterize and predict impact pathways. Although these guidelines compare different socio-economic impact characterization and prediction tools, the developer is responsible for choosing the appropriate tools.

### 3.4.2 Tools for Characterizing and Predicting Social and Cultural Change

The complex, subtle nature of social and cultural change makes this change more difficult to assess than economic change. Numerous potential social and cultural impacts may merit consideration in an EIA; some of which are discussed further in Appendix G5. Some useful tools for predicting social and cultural impacts are described in Table 9.

### 3.4.3 Tools for Characterizing and Predicting Impacts on the Traditional Economy

Given the existence and importance of traditional economies throughout the Mackenzie Valley, the developer can use informed community judgment and involvement to predict the impacts of the proposed development on the traditional economy using the following information:

- Baseline information about the prevalence, nature and valued components of traditional economies in potentially affected communities
- How the proposed development may impact traditional economies, including access to land and the availability of harvesting resources

**TABLE 9** Sample Tools for Characterizing and Predicting Social and Cultural Impacts

Tool	Description
<b>Cause/effect matrices</b>	These matrices allow the developer to examine the first-order cause/effect relationship between development activities and the effects of the individual development components (see Appendix F).
<b>Flow charts or diagrams</b>	Impact-pathway flow charts or network diagrams examine interactions between the environment and the proposed development in detail. These techniques chart the pathways of environmental effects, and allow the developer to examine the links between environmental components.
<b>Map overlays</b>	Map overlays illustrate the proximity of sensitive features to the proposed development, thereby assisting the developer identify key issues and potential impacts. The developer may also use map overlays to present information when defining spatial boundaries and/or identifying potential impacts.
<b>Delphi Technique</b>	A panel of experts providing anonymous feedback via questionnaires or focus groups in a forum run by a central co-ordinator. Several iterations of the exercise, in which responses are provided to the group after each round, gradually produce consensus. Modified forms of this technique should be used in a culturally appropriate manner when working with aboriginal people.
<b>Impact-hypothesis workshops</b>	Impact-hypothesis workshops can identify ► the proposed development activities ► the valued socio-economic components, and ► how the proposed development activities may impact valued socio-economic components. Facilitators guide the discussion and organize the identified impacts and issues into a conceptual model.
<b>Straight-line trend projections</b>	Analysing an existing trend and projecting the future rate of change. Trends may also be projected using different assumptions about the rate and nature of change.
<b>Scenarios</b>	Scenarios are hypothetical futures that can describe the possible causes or effects of the proposed development's direct and indirect impacts.
<b>Population multiplier methods</b>	Forecasting population trends in scenarios that include a future with the proposed development, and a future without the proposed development; and, identifying the possible impacts of increased (or decreased) local and regional populations on the availability of jobs, housing, social and physical infrastructure needs, etc.
<b>Comparative method</b>	The current situation is compared to a potential future with the proposed development. Research and experience of similar cases can help the developer predict potential impacts.
<b>Calculation of “futures foregone”</b>	Methods used to determine what future development options would be irrevocably lost if the proposed development goes ahead, e.g. river recreation and traditional land use after a hydroelectric facility is built.
<b>Modeling</b>	Various methods from qualitative network diagrams to computer modeling tools, that can be used to predict probable responses of people to external changes.

- Known or perceived trends in the traditional economy and valued components (this information is also useful for assessing cumulative impacts)
- Oral or written evidence from traditional or local knowledge holders about the importance of harvesting activities to the social and cultural vitality of individuals, families and communities
- Any mitigation measures committed to by the developer or government to reduce impacts on the traditional economy (discussed further in Section 3.5)

Standard wage economy valuation methods such as GDP accounts should not be relied on, as they under-estimate the value of wildlife harvesting as an economic force and ignore the “intangible”, vital role it plays in traditional culture. However, estimating the replacement value of country foods versus store bought food of similar nutritional value may be appropriate. Appendix G3 discusses assessment of the traditional economy in more detail.

### 3.4.4 Tools for Characterizing and Predicting Impacts on the Wage Economy

In the past, impact prediction focused on economic impacts because these impacts are the easiest to measure. Economic impact assessment tools include the following:

- Fiscal analysis (economic viability and distribution of revenue to government)
- Cost-benefit analysis estimated value of the proposed development to society)
- Input/output analysis (estimated direct and indirect contribution of the proposed development to GDP).

Table 10 highlights some of the tools a developer may use to characterize and predict economic impacts.

The developer of a proposed medium-sized development may be expected to provide evidence of employment, income and business multipliers associated with the development. The developer should also talk directly to government about potential increases in required physical and social infrastructure.

The developer of a proposed large development should undertake appropriate forms of economic impact assessment to estimate possible additional costs to government (and whether changes to the development plan could minimize these impacts), and how much value the proposed development will contribute to regional and territorial economies. For example, methods of input-output analysis can determine how much business, employment and income will stay in the North, and help establish whether impact equity is possible. A large development can contribute significantly to the economy of the Mackenzie Valley; the developer should support its estimates with a cost-benefit analysis.

Appendix G4 provides further information on SEIA on the wage economy.

The following are overall requirements for characterizing and predicting potentially significant impacts:

- Extensive public involvement; communities should be involved in predicting how change may impact their society.

**TABLE 10** Sample Methodologies for Characterizing and Predicting Economic Impacts

Economic Impact	Potential Methods to Characterize and Analyze
<b>Individual Impacts</b>	
<i>Employment</i>	<ul style="list-style-type: none"> <li>• Developer employment estimates including required skill levels</li> <li>• Multiplier analysis (with multipliers from GNWT Input/Output models<sup>6</sup>)</li> </ul>
<i>Wages/salaries</i>	<ul style="list-style-type: none"> <li>• Developers wages/salaries estimates according to skill level</li> <li>• Multiplier analysis (with multipliers from GNWT Input/Output models)</li> </ul>

*Continued...*

6. An overview of the GNWT's Input/Output model is available online at <http://www.stats.gov.tca>

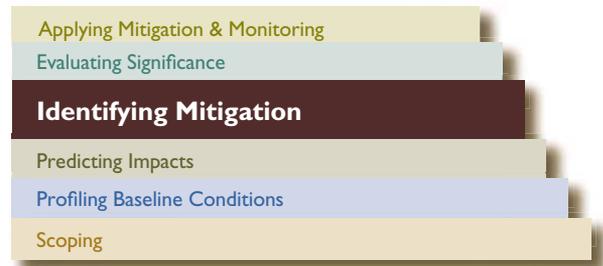
**TABLE 10** Sample Methodologies for Characterizing and Predicting Economic Impacts *Continued*

<b>Economic Impact</b>	<b>Potential Methods to Characterize and Analyze</b>
<i>Human capital (opportunities for education and training)</i>	<ul style="list-style-type: none"> <li>• Analysis of training plan(s) prepared by developer that compares required skill levels, etc. required with those that are available in the NWT</li> </ul>
<i>Crowding out (displacement of existing employment)</i>	<ul style="list-style-type: none"> <li>• Unemployment estimates</li> <li>• Training plan analysis</li> <li>• Follow-up studies</li> </ul>
<i>Labour leakage</i>	<ul style="list-style-type: none"> <li>• Analysis of human resources available in or near the location of the proposed development</li> </ul>
<b>Business Impacts</b>	
<i>Local purchases (additional business revenues)</i>	<ul style="list-style-type: none"> <li>• Estimated economic spin offs based on multiplier analysis</li> <li>• Estimated number and types of new businesses</li> </ul>
<i>Spin off businesses “crowding out” impacts</i>	<ul style="list-style-type: none"> <li>• Extent to which new businesses established to serve the development may displace existing businesses</li> </ul>
<i>Business leakage</i>	<ul style="list-style-type: none"> <li>• Existing business services</li> </ul>
<b>Government Impacts</b>	
<i>Demand for government services</i>	<ul style="list-style-type: none"> <li>• Assessments of historic and future demand for government services</li> </ul>
<i>Total economic output (GDP)</i>	<ul style="list-style-type: none"> <li>• Multiplier analysis (with multipliers from GNWT Input/Output models)</li> </ul>
<i>Positive and negative externalities</i>	<ul style="list-style-type: none"> <li>• Qualitative analysis</li> <li>• Follow-up studies</li> <li>• Public participation</li> </ul>
<b>Net Social Benefit</b>	
<i>Tangible costs/benefits</i>	<ul style="list-style-type: none"> <li>• Cost-benefit analysis</li> <li>• Multiple accounts analysis</li> <li>• Incidence analysis</li> <li>• Feasibility study</li> <li>• Cost-effectiveness analysis</li> </ul>
<i>Intangible costs/benefits</i>	<ul style="list-style-type: none"> <li>• Cost-benefit analysis</li> <li>• Multiple accounts analysis</li> <li>• Incidence analysis</li> <li>• Public participation</li> </ul>
<b>Sustainability</b>	
<i>Environmental valuations</i>	<ul style="list-style-type: none"> <li>• Cost-benefit analysis (contingent valuation; travel cost method; etc)</li> <li>• Multiple accounts analysis</li> <li>• Panel surveys</li> </ul>
<i>Cumulative economic effects assessment</i>	<ul style="list-style-type: none"> <li>• Public participation</li> <li>• Panel surveys</li> <li>• Analysis of selected economic impacts</li> </ul>

- Characterization of impacts arising from the lifecycle of the proposed development, i.e. throughout the stages of pre-development planning, construction, operation, decommissioning and post-development closure.
- Identification of the causal factors of adverse impacts; these factors represent the root causes that mitigation will attempt to manage.
- Identification of those parties most likely to be impacted adversely by socio-economic change.
- Transparent identification of assumptions and information gaps, as well as any uncertainties about the predictions.

Limited baseline data and insufficient documented information about traditional and cultural activities can create uncertainty about the developer's impact prediction. For example, if quantitative data from the GNWT are used to collate indicators of community wellness, but there is no differentiation in the data between aboriginal and non-aboriginal sub-populations, this lack of differentiation should be stated. When adequate development-specific information is unavailable, predictions can be based on case studies and professional judgment.

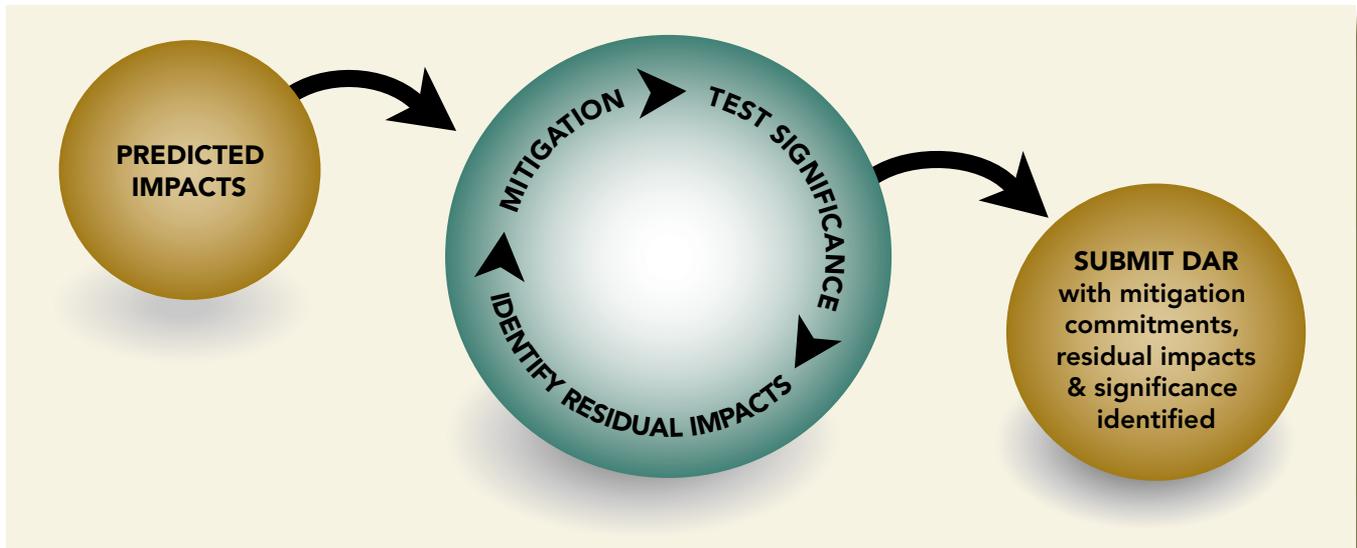
### 3.5 Identifying Mitigation



Identifying *mitigation* to manage, reduce or eliminate adverse impacts on valued socio-economic components or public concern is the next important step in SEIA. To identify and refine appropriate mitigation, the developer should discuss alternative mitigation with potentially impacted communities, governments and other stakeholders.

Mitigation measures that have worked in other circumstances should be considered during these discussions. Instructive information about mitigation includes completed Reports of Environmental Assessment (REA), and reports from agencies that monitor the effectiveness of mitigation.

**FIGURE 5** A Developer's Mitigation Steps During EA



The impact prediction, mitigation and significance steps are conducted in an iterative fashion. There is a feedback loop between these steps, which is repeated until the potential impacts are no longer significant, or it becomes financially unfeasible to implement additional mitigation. Figure 5 illustrates this iterative process.

Assigning responsibility for pre-existing impacts to the developer, or expecting the developer to assume government responsibilities, is not mitigation.

Consider a community with high rates of unemployment, and a disproportionate number of children in care. Impact predictions indicate a high possibility of increased social problems due, in part, to background trends, and the effects of the proposed development. In this case, mitigation strategies can reduce existing socio-economic impacts that the proposed development might worsen. The following are examples of mitigation strategies:

- The developer commits to hiring a certain percentage of workers from the affected community
- The government commits to adaptive mitigation such as increasing the number of social service providers
- The community develops a community-wellness plan in cooperation with the developer and the government

### Identifying appropriate mitigation

While there is no set method for identifying mitigation, and mitigation must be tailored to fit a specific situation,

the following principles can help the developer identify relevant mitigation strategies:

- The more severe the predicted adverse impact, the greater mitigation is a priority. The developer should focus on mitigating likely significant adverse impacts.
- Mitigation should increase the long-term beneficial socio-economic impacts rather than simply reducing adverse impacts.
- Mitigation should focus on eliminating causal factors and pathways related to an impact – eliminate the source of the impact rather than manage the outcome.
- The developer should draft mitigation options with the assistance of those communities that are likely to be more impacted than others.
- Parties – this may include the developer, communities, regulators, and government departments responsible for socio-economic well-being – must assume responsibility for implementing and enforcing mitigation.
- The best mitigation efforts often build in public reporting requirements and/or identified “thresholds of manageable change” beyond which adaptive management is required to impose additional mitigation (see Section 3.7).

### Types of available mitigation

Many types of mitigation for impacts on valued socio-economic environment components are possible.

**TABLE 11** Example Mitigation Measures for Specific Socio-economic Impacts

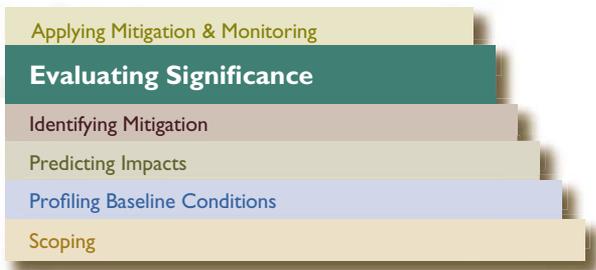
Impact Type	Possible Mitigation
<i>Lack of time on the land or limited access to land because of increased role in wage economy</i>	<ul style="list-style-type: none"> <li>• Flexible work scheduling during harvesting periods</li> </ul>
<i>Loss of traditional economy due to poor hunting and trapping, longer distances to drive, loss of equipment due to disturbances</i>	<ul style="list-style-type: none"> <li>• Timing of operations</li> <li>• Avoidance of sensitive harvesting areas</li> </ul>
<i>Disturbance of cultural resources, including archaeological, burial and spiritual sites</i>	<ul style="list-style-type: none"> <li>• Community environmental monitors with power to stop work if a possible cultural resource is identified</li> <li>• Community meetings to discuss proposed work locations</li> <li>• Relocating the location of linear development to minimize impacts on other land users</li> </ul>

*Continued...*

**TABLE 11** Example Mitigation Measures for Specific Socio-economic Impacts *Continued*

Impact Type	Possible Mitigation
<i>Employee retention On-the-job cross-cultural relations Family disturbances related to long-distance commuting</i>	<ul style="list-style-type: none"> <li>• Adjusting work schedules to minimize disturbance to families and provide access to cultural events</li> <li>• Onsite cross-cultural training</li> <li>• Additional social supports in communities for caregivers</li> </ul>
<i>Inability to compete with businesses from larger centres</i>	<ul style="list-style-type: none"> <li>• Preferential contracting policies and capacity building</li> </ul>
<i>Boom-and-bust cycles, where short-term beneficial employment and income benefits make the resumption of pre-development economy a difficult transition</i>	<ul style="list-style-type: none"> <li>• Lengthening the timelines of the proposed development through lower production rates</li> <li>• Increased investment in human and social capital to provide economic diversity and social stability prior to development closure</li> <li>• Provide community-development initiatives (e.g. small business development funds, improvements to infrastructure)</li> </ul>
<i>Maintaining benefits in the North</i>	<ul style="list-style-type: none"> <li>• Northern point of hire</li> <li>• Northern/aboriginal employment percentage commitments and reporting</li> </ul>
<i>Lack of training to attain, retain, and advance in available jobs</i>	<ul style="list-style-type: none"> <li>• Scholarships</li> <li>• On-site training initiatives</li> <li>• Off-site community trades school initiatives</li> <li>• Job mentoring</li> <li>• Internship programs</li> </ul>
<i>Effects of increased disposable income (e.g. increased alcohol consumption)</i>	<ul style="list-style-type: none"> <li>• Money management training</li> <li>• Dry camps</li> <li>• Provide substance-abuse programs for workers and families</li> </ul>
<i>Loss of cultural cohesion</i>	<ul style="list-style-type: none"> <li>• Investment in cultural programs, institutes, language preservation, healing circles, and cultural events</li> </ul>
<i>Public safety (road, physical and social infrastructure)</i>	<ul style="list-style-type: none"> <li>• Improve road conditions before traffic increases</li> <li>• Additional RCMP presence</li> </ul>
<i>Social concerns about impact of large numbers of workers in small communities</i>	<ul style="list-style-type: none"> <li>• Imposing controls that limit workers from accessing small communities at certain times</li> </ul>

### 3.6 Evaluating Significance



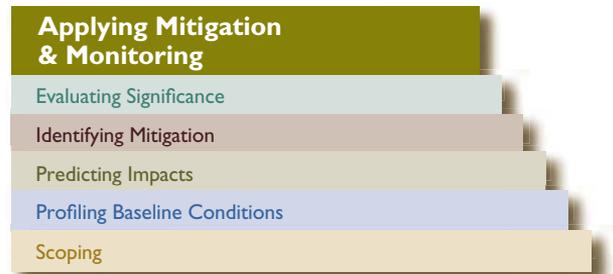
Evaluating significance has been defined as a “subjective, value dependent judgment of importance.”<sup>7</sup> When evaluating potential significant impacts, SEIA considers whether the proposed development will alter or decrease valued socio-economic components below an acceptable threshold.

The developer should involve affected communities and other parties in the assessment when evaluating the significance of socio-economic impacts.

When researching the affected communities’ and other parties’ perspectives on significant impacts, the developer may draw upon ▶ traditional and local knowledge ▶ community-based assessment efforts ▶ standards ▶ guidelines ▶ policy statements ▶ research studies ▶ comparable case studies, and ▶ quantitative risk assessment.

Developers should refer to section 5.6 to familiarize themselves with questions the Review Board may consider when evaluating the significance of impacts.

### 3.7 Applying Mitigation and Monitoring



Mitigation and monitoring are essential for SEIA.

Monitoring is a systematic method that employs scientific and/or traditional knowledge to measure and/or observe changes. This involves assessing indicators regularly in a consistent and systematic manner. Monitoring may occur at a number of levels.

Monitoring socio-economic impacts happens after the proposed development undergoes EA. However, impact evaluation, operational adjustments and mitigation must continue during the development’s lifecycle. For example, governments may develop policy instruments to mitigate the socio-economic impacts after the EA is done. Using socio-economic agreements, such as those signed for the BHP Ekati and Diavik diamond mines in the NWT, is another strategy for monitoring impacts. These agreements create a framework for industrial monitoring that use indicators from government sources, and qualitative indicators collected during annual surveys.

Monitoring can be development-specific, but a well-funded regional organization is better suited to identifying and proposing mitigation for the cumulative impacts of numerous developments in a specific region.

7. Lawrence, D.P. (2004). “The Significance of Social and Economic Impacts in Environmental Assessment”. [ceaa-acee.gc.ca/015/0002/0023/index\\_e.htm](http://ceaa-acee.gc.ca/015/0002/0023/index_e.htm)

Adaptive management is part of effective monitoring: it links monitoring with pre-determined limits of manageable change in order to manage the development more effectively. Adaptive management is a systematic process for continually improving management policies and practices by learning from development outcomes. Best practices for the adaptive management of socio-economic impacts include the following:

- Promoting and supporting public participation in monitoring and adaptive management systems
- Supplying adequate resources (people, money, equipment, etc.)
- Inspection and surveillance to determine whether policies, commitments, terms and conditions are being implemented (this requires adequate resources from monitoring agencies)
- Linking the monitoring to specific “thresholds of manageable change”, and the identification of compliance measures required if these thresholds are breached
- Establishing mechanisms to adjust mitigation measures to manage unanticipated changes, or an unsustainable rate of change
- Periodic independent auditing of the adaptive management system to improve public accountability
- Transparent public reporting at pre-determined intervals





# 4.

## SEIA in Preliminary Screening

# 4. SEIA in Preliminary Screening

## 4.1 Introduction

Preliminary screening is the first level of EIA in the Mackenzie Valley. Preliminary screening is an initial examination of a proposed development's potential to cause significant adverse impacts on the environment and/or public concern. This happens *after* the developer files a development application. Preliminary screening is a multi-party review of development applications that culminates in the preliminary screener (the regulator) applying the "Might Test."<sup>8</sup>

Figure 6 illustrates how SEIA is incorporated into preliminary screening. Note: This section assumes a general working knowledge of preliminary screening. If you have non-SEIA questions about preliminary screening, consult the *EIA Guidelines*.

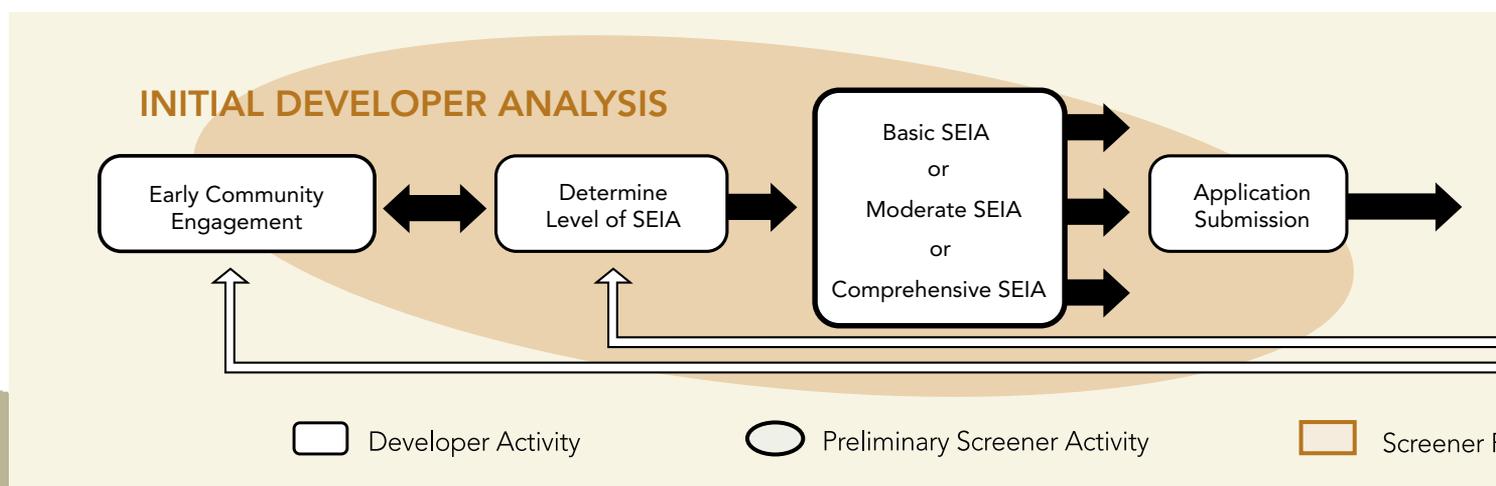
## 4.2 SEIA Roles during Preliminary Screening

The following is a list of participants and their responsibilities during preliminary screening:

### 1. Preliminary screener

- Accepting and distributing information such as initial development applications
- Distributing relevant documents to the appropriate reviewers along with instructions on the review requirements
- Collecting reviewer comments about the SEIA
- Make a decision whether:
  - The initial development application has adequate information about early community engagement and SEIA to be accepted for preliminary screening
  - The proposed development application requires further study

**FIGURE 6** SEIA Steps in the Preliminary Screening Process



8. For more information on the "Might Test", see the *EIA Guidelines*.

- The application should be subject to a hearing to discuss outstanding issues
- To proceed to permitting
- A referral to EA is necessary

## 2. Developer

- Filing an initial development application that includes a full report of early community engagement and SEIA considerations
- Providing additional SEIA information if it is determined that SEIA in the initial development application is insufficient for a preliminary screener to accept the application or make a decision

## 3. Communities and other potentially affected groups

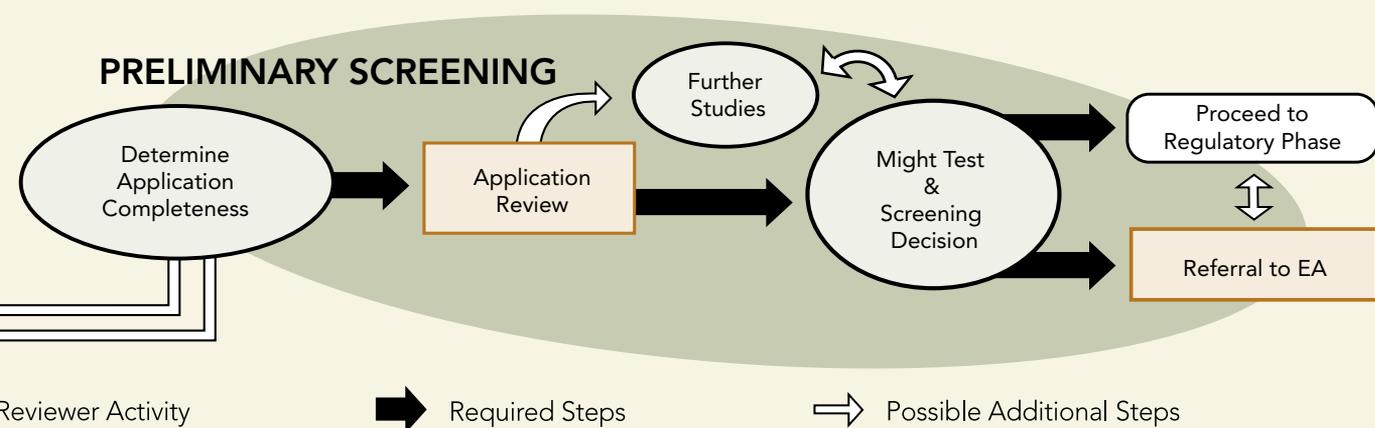
- Providing comments and concerns about the development application to the preliminary screener during the preliminary screening period (municipal and some other community authorities have the power to refer a proposed project to EA – see section 126 of the *Mackenzie Valley Resource Management Act* for more information)

## 4. Reviewers

- Reviewing and commenting on the developer's SEIA
- Providing comments to the preliminary screener about the adequacy of the developer's SEIA based on the following considerations:
  - Whether there is enough evidence in the development application to make a preliminary screening decision
  - Whether the developer must do further studies to eliminate uncertainties in the SEIA or mitigate identified potential impacts and/or public concerns
  - Whether the proposed development might cause significant adverse environmental impacts and/or public concern that requires a referral to the Review Board for an EA

## 5. Referral agencies

- Reviewing and commenting on the initial development application
- Determining whether to refer the development to the Review Board for an EA regardless of the preliminary screener's decision



## 6. The Mackenzie Valley Environmental Impact Review Board

- Monitoring preliminary screening decisions about the initial development application
- Determining whether to refer the development to an EA regardless of the preliminary screener's decision

Before determining the scope/scale of its initial SEIA analysis, the developer should be familiar with the expectations of referral agencies and the Review Board.

### 4.3 Application Completeness and Review

Assessing whether the application is complete is the preliminary screener's first task. The Mackenzie Valley Land and Water Board has guidelines for assessing whether an application is complete (consult other preliminary screeners directly about their specific requirements):

*"A complete application must have all the information necessary for the MVLWB staff to complete a preliminary screening... More specifically, the information submitted with an application must include:*

- *A development description;*
- *Impacts on the environment and associated mitigations/remediation;*
- *A description of consultations undertaken, issues raised, resolutions reached and land use permissions;*
- *Archaeological resources; and*
- *Any affiliated new facilities, structures and activities arising or needed as a result of the application."*

Reviewing the application is the second task. The preliminary screener shares this task with other reviewers. The preliminary screener has the discretion to choose

which organizations review the application (beyond those legally bound to review the application<sup>9</sup>), and which socio-economic issues need to be considered when applying the "Might Test."

GNWT "Social Envelope" departments should be on the distribution list of the preliminary screener when a proposed development with identified SEIA issues is undergoing preliminary screening. Preliminary screeners should also include any other organizations which could provide valuable SEIA expertise.

Thorough and timely application review requires specific instructions for reviewers. In addition to encouraging reviewers to fill out the same SEIA Checklist as applicants for comparative purposes (see Table 6 for an example), preliminary screeners may ask reviewers to identify whether:

1. The list of potentially affected communities is comprehensive
2. The application addresses the concerns and issues of potentially affected communities adequately
3. The level of SEIA effort is adequate for the size, location and complexity of the proposed development
4. There are gaps in the data or methodology
5. There is general uncertainty about socio-economic issues
6. The valued socio-economic components, benchmarks and indicators are relevant, adequate and accurate
7. There are potential socio-economic or cultural impacts missing from the developer's assessment
8. There are gaps in the initial impact prediction or determination of significance
9. There are mitigation measures that should be required for the identified potential socio-economic impacts

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9. Section 63(2) of the MVRMA requires that affected communities and First Nations receive applications for review. Section 124(1) requires the Review Board receive notice of the application.

## 4.4 The Screening Decision: Performing the “Might Test”

Section 125 of the MVRMA governs how a preliminary screener makes decisions. In most cases<sup>10</sup>, the preliminary screener must “*determine and report to the Review Board whether, in its opinion, the development might have a significant adverse impact on the environment or might be a cause of public concern*” (s.125 (1) (a)). If this is determined in the affirmative, the proposed development must be referred to EA.

Compared to the “Likely Test” for EA (see Section 5.6), the “Might Test” is a rudimentary test that does not require the same weight of evidence for support. However, the dictionary definition of might as “possible” is not adequate to perform the “Might Test.”

An absence of socio-economic information in a development application does not mean socio-economic impacts and concerns do not exceed the limits of the “Might Test.” A lack of clarity and analysis of potential impacts during preliminary screening can cause public concern about the potential for unidentified or overlooked impacts happening. Public concern can lead to the proposed development being referred to EA, or make the developer conduct an unnecessarily wide scoping of socio-economic impacts during EA. The checklists and questions for further consideration in Section 3 will help the developer eliminate potential socio-economic impacts and public concerns from further consideration, and identify specific issues requiring further examination.

Every proposed development has possible socio-economic impacts. The Review Board defines “might” as a *realistic possibility*.<sup>11</sup> Preliminary screeners must judge whether the proposed development might have significant impacts or cause significant public concern using ► previous experience with similar developments ► information in the development application, and ► the comments of expert reviewers. Detailed information about applying the “Might Test” is in the *EIA Guidelines*.

Many preliminary screeners are regulators that lack a mandate to include terms and conditions for minimizing socio-economic or cultural impacts in their respective licenses and permits. Whether the preliminary screener has jurisdiction to mitigate these impacts is irrelevant to the preliminary screening, as it is not part of the regulatory process. Preliminary screening is an impact assessment process that precedes any regulatory action. The preliminary screener must consider every issue an EA can address including socio-economic and cultural issues, and various public concerns regardless of their regulatory mandate.

Preliminary screeners ask the following two key questions when making a preliminary screening decision:

- Was the investigation done properly or are there remaining questions that the developer must answer before proceeding?
- Are there any potential adverse impacts on the environment or public concerns that exceed the threshold of the “Might Test”?

Regarding the first question, when the preliminary screener lacks the evidence to make a determination about socio-economic issues, the preliminary screener has the right to defer a decision until further studies are done, and/or hold a public hearing to gather further information (see section 24 (1) of the MVRMA). Proposed developments that might cause a significant adverse impact on the environment – or might cause significant public concern – which cannot be mitigated through further studies or public hearings should be referred to the Review Board for an EA.

The preliminary screener receives information from other referral agencies to answer the second question. Regardless of the preliminary screener’s decisions, any referral agency can refer the proposed development to EA according to section 126 of the MVRMA. Preliminary screeners must forward preliminary screening decisions to the Review Board for final consideration before issuing any permits and/or licenses.

<sup>10</sup>. Requirements are slightly different for developments wholly inside local government bounds (MVRMA S. 125(2)).

<sup>11</sup>. See the Review Board’s Reference Bulletin on “Operational Interpretation of Key Terminology in Part Five of the *Mackenzie Valley Resource Management Act*” for the Review Board’s interpretations of the terms *might*, *likely*, *adverse*, *significant* and *public concern*. Available at [mveirb.nt.ca](http://mveirb.nt.ca).





# 5.

## SEIA in Environmental Assessment

# 5. SEIA in Environmental Assessment

## 5.1 Introduction

Environmental assessment (EA) is the second level of the EIA process in the Mackenzie Valley. A developer involved in an EA must ensure they have reviewed guidance materials about conducting SEIA.

## 5.2 SEIA Roles and Responsibilities During Environmental Assessment

### Role of the developer

The developer is responsible during EA to demonstrate to the Review Board that it is unlikely the proposed development will cause significant adverse impacts and/or significant public concern. Throughout the EA, the development description may be modified to mitigate potential impacts on valued socio-economic components.

Before submitting an application for preliminary screening, the developer decides which issues to examine, and the depth and level of SEIA effort. During EA, the Review Board determines what evidence and information is required.

The developer is responsible for ▶ collecting most of this evidence and information ▶ doing a *preliminary* prediction of impacts, and ▶ estimating the significance of these predicted impacts. In order for the Review board to make a final decision about the significance of predicted impacts and/or public concern, the developer must provide sufficient evidence and information, and explain the methods and sources used.

The Review Board issues a Terms of Reference (TOR) to the developer. The TOR are specific instructions that describe the level and focus of the EA; the TOR outlines the content of the Developer's Assessment Report (DAR).

The DAR is the main EA document produced by the developer. The Review Board may also ask the developer to provide additional information after the Review Board and other parties to the EA have reviewed and analyzed the DAR.

### Role of the Review Board

The developer's SEIA is one dimension of the larger EA. During EA, the Review Board is authorized to do the following:

- Determine the final “scope of assessment” and the final “scope of development” for the EA
- Assess the validity and weight of the parties' submissions and evidence
- Make a final determination of significance

The Review Board, on its own or on the behalf of other parties, may obtain further SEIA information by doing any or all of the following:

1. Assessing whether the SEIA in the DAR is adequate; the Review Board may issue a deficiency statement and recommend the developer conduct further SEIA if the DAR does not conform to the socio-economic sections of the TOR.
2. Issuing Information Requests (IRs) for further SEIA information to the developer and any other party to the EA. The Review Board issues IRs when there are information gaps or confusing information in the DAR, development description, and/or public submissions.
3. Accepting technical submissions from any party to the EA, including traditional knowledge reports and socio-economic studies.
4. Hiring experts to assist in the examination of evidence, conducting specific research, and/or determining the significance of impacts.
5. Holding public hearings where parties to the EA and other members of the public may speak with, and ask questions of, any other party.

## Roles of other parties to the EA

Communities and other potentially affected groups can comment on the developer's SEIA, submit complementary or contrasting evidence to the Review Board, and propose mitigation to manage, reduce and/or avoid impacts.

In fulfilling their socio-economic mandates, **government departments and agencies** can contribute directly to the SEIA by doing the following:

- Collecting, collating and reporting relevant socio-economic baseline data
- Providing expert information throughout the EA, including participating in scoping the assessment, reviewing and critiquing the DAR, and issuing technical reports about potential impacts on communities and regions, feasible mitigation, and the significance of residual impacts
- Submitting and answering Information Requests
- Implementing and monitoring approved mitigation measures

## 5.3 Scoping the Assessment

Scoping the EA is an activity that helps the developer and the Review Board identify the potential impacts of the proposed development on valued components. The developer is responsible for much of the scoping before preliminary screening begins (see Section 3.2).

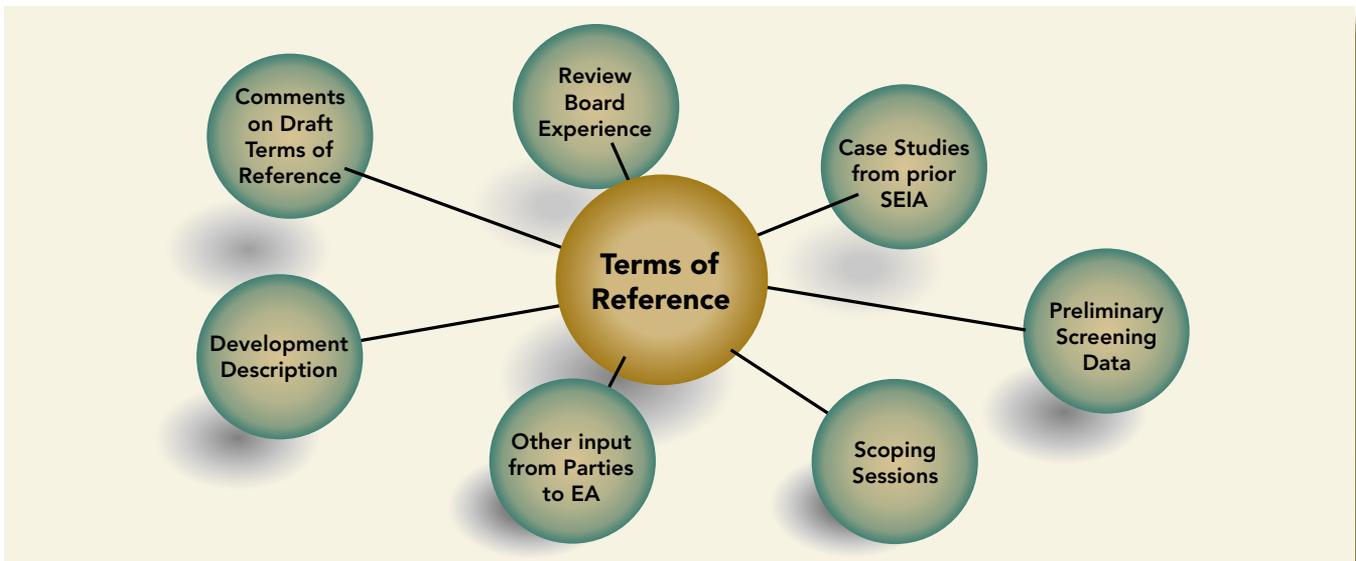
During EA, the Review Board is responsible for determining the following:

- The scope of assessment including the geographic and temporal boundaries
- The potentially affected groups that need to be included in the SEIA
- The issues for consideration

The Review Board determines the scope of assessment using the scoping tools and questions discussed in Section 3.2.

The Review Board produces the TOR based on the scoping sources illustrated in Figure 7. The focus of scoping the EA is broad and open-ended.

**FIGURE 7** Scoping the Assessment



Scoping narrows the EA focus to issues that:

- Were inadequately addressed during preliminary screening, or only identified during EA scoping
- Are relevant to at least some of the potentially-affected parties (and where only one community is likely to be impacted, the impact may only merit consideration in that locale)
- Are linked to components of the proposed development
- Primarily affect the geographical area(s) most likely to be measurably impacted
- Might cause significant adverse impacts or significant public concern

The Review Board may host scoping sessions to identify socio-economic issues or concerns that the EA should address. During these scoping sessions, participants have an opportunity to explain why they believe the proposed development may impact specific valued components. The Review Board may ask participants to prioritize identified issues.

Information gathered during the scoping session helps the Review Board decide which issues to address in the TOR. Before finalizing the TOR, the Review Board allows the public to comment on the draft TOR.

## 5.4 Terms of Reference

The developer's baseline condition profiles must address every valued socio-economic component identified in the "Description of the Existing Environment" section of the TOR.

The TOR instruct the developer on which socio-economic and cultural components and issues the DAR must address. The developer has flexibility when choosing the impact assessment tools.

The TOR are addressed to the developer but other parties to the EA should refer to the TOR for information about the EA. The TOR can help other parties define the scope of the issues to be assessed, and focus their attention on relevant Information Requests. The TOR provide useful information for technical reports, submissions and presentations to the Review Board during public hearings. (Parties that want to know how the TOR address SEIA

should consult the TOR of past EAs. These documents are on the Review Board's public registry at [mveirb.nt.ca](http://mveirb.nt.ca)).

Refer to Appendix E for further information about potential socio-economic information requirements in the TOR.

## 5.5 Review of the Developer's Assessment Report

Upon receipt of the DAR, the Review Board will complete a conformity check to ensure that the developer adhered to the TOR.

Once conformity is complete the Review Board and parties to the EA review the developer's baseline information, impact predictions and proposed mitigation. During the rest of the EA, parties may submit comments on the accuracy of impact predictions and preferred mitigation options in the form of technical reports, and/or at technical or public hearings. Parties to the EA are responsible for submitting their concerns or comments about the developer's chosen methods and findings to the Review Board.

If representatives from the community and/or government are concerned about the accuracy, depth, relevance, or indicator focus of the developer's baseline conditions profiles, impact predictions and/or proposed mitigation, they should make these concerns known to the Review Board.

The developer and other parties to the EA must consider the assumptions inherent to the methods, tools and models the developer used to determine mitigation. The developer must identify these assumptions in the DAR. The other parties should identify strategies for mitigating impacts, and implementing measures and mitigation in adaptive management programs. This applies even if the impact is related indirectly to the proposed development (e.g. if increased disposable income contributes to increased substance abuse and subsequent family violence, the substance abuse and family violence should not be justified as a matter of "choice").

The Review Board may ask the developer follow-up questions in the form of Information Requests, or request the developer use additional sources to clarify information. In addition, the feasibility and utility of the developer's mitigation may be subject to Information Requests. Throughout the EA, the developer may commit to additional mitigation suggested by parties. Any commitments made during the EA become part of the development description. The Review Board also analyzes the public record to make decisions about the adequacy of proposed mitigation.

## Methods for addressing impacts

### 1) Commitments from the developer and other parties to the EA

During EA, the need for further mitigation may be identified, and, subsequently, the developer, or in some instances governments, may commit to implementing the mitigation. The Review Board considers such commitments when making its final determination of significance. The developer's commitments made during

the EA become part of the refined project description. In many instances, these commitments often reduce the level of significance of identified impacts below the point where the Review Board is required to recommend additional mitigation measures.

### 2) Review Board measures

The Review Board identifies mitigation measures for any residual adverse impacts it considers likely and significant after the developer submits its proposed mitigation. The Review Board focuses on mitigation that addresses the underlying causes of significant impacts. Measures are designed to reduce the impact to an insignificant level.

### 3) Contractual agreements

There are different types of agreements that may be used for mitigating and monitoring socio-economic impacts. The agreement used depends on the size, location and industrial sector of the proposed development. They are not negotiated inside of the EA process; rather, they can be negotiated concurrent with the EA process or as a result of the EA.

**TABLE 12** Agreements to Mitigate and Monitor Socio-economic Impacts

Type of Agreement	Nature of Agreement	For More Information
<b>Socio-economic agreement</b>	Voluntary contract between the GNWT and the developer that addresses community well-being and economic opportunities; this can include monitoring	Industrial Initiatives Division, Department of Industry, Tourism and Investment, GNWT
<b>Impact benefit agreement (partly confidential)</b>	Voluntary contract between aboriginal communities and/or organizations, and the developer regarding compensation, employment, education, training, and business	Mineral Development Division, Indian and Northern Affairs Canada
<b>Access agreement (partly confidential)</b>	Required contract between the developer and aboriginal communities and/or organizations regarding access to or across lands owned by land claimant organizations within a settled land claim area.	Regional land claims organizations and/or other aboriginal organizations

The Review Board may find potential significant adverse impacts on valued social-economic (or cultural) components, and impose mitigation measures. As there are no regulatory instruments to enforce socio-economic measures, the implementation vehicle may be a socio-economic agreement (SEA). An SEA is usually negotiated between the GNWT and the developer. An SEA is a voluntary contract that addresses community well-being and economic opportunities; monitoring is included. The outcome of an EA can assist the parties choose the focus and content of an SEA.

Unlike SEAs, an impact benefit agreement (IBA) is usually negotiated in a process parallel to the EA. The Review Board cannot make the developer enter a voluntary contract such as an IBA. The developer is encouraged to include all non-confidential portions of accepted or pending IBAs in its DAR or subsequent EA submissions. This information can assist the Review Board in identifying issues that are no longer outstanding.

The Review Board can only consider proposed mitigation for impacts based on evidence in the public record. The developer and other parties are encouraged to provide the Review Board with as much non-confidential information as possible about IBAs in its submissions during EA; this information can assist the Review Board in determining whether the proposed mitigation is adequate.

#### 4) Suggestions (non-binding)

Review Board suggestions are often used to provide guidance on dealing with outstanding issues at the end of an EA when no significant impacts are identified but it is desirable for the parties to mitigate an impact. For example, the Review Board can suggest opportunities for the developer, and responsible government authorities, to work cooperatively with potentially affected parties on choosing socio-economic mitigation. Suggestions do not have the legal weight of a Review Board measure.

## 5.6 Determining Significance

The Review Board, when making its final determination of significance about biophysical impacts, answers the following question: *“Is the impact, in the Review Board’s opinion, likely to occur, adverse in nature, and significant enough to require mitigation?”*

The Review Board bases its determination on evidence in the public record, and goals, standards, guidelines and/or defined limits of manageable change. When making its determination of significance, the Review Board may consider the questions in Table 13.

**TABLE 13** Determining Significance in SEIA

Significance Factor	Questions the Review Board May Consider
<b>Nature of impact</b>	<ul style="list-style-type: none"> <li>• Does the impact threaten a valued socio-economic component?</li> <li>• Is the valued socio-economic component sensitive to change (e.g. impacts on family structure in a close-knit community may be more significant than pressures on physical infrastructure)?</li> </ul> <p><i>Understanding the nature and the pathway of the impact makes it easier to prescribe focused and effective mitigation.</i></p>
<b>Magnitude</b>	<ul style="list-style-type: none"> <li>• What is the magnitude or degree of change the impact will likely cause?</li> <li>• Is the expected change large and rapid, or slow and/or minor?</li> <li>• How much additional magnitude will the impact have compared to expected regular trends? For example, do existing social pressures make the community vulnerable?</li> <li>• Will any identified thresholds of manageable change (as expressed in plans, strategies, and goal statements) be breached?</li> <li>• Does the predicted change exceed the existing capacity of the community to absorb the change?</li> </ul>

*Continued...*

**TABLE 13** Determining Significance in SEIA *Continued*

Significance Factor	Questions the Review Board May Consider
<b>Trade offs between adverse and beneficial impacts</b>	<ul style="list-style-type: none"> <li>• Will beneficial impacts offset the predicted adverse impact?</li> </ul> <p><i>Significance determinations need to consider the degree to which some adverse impacts can be tolerated if there are beneficial impacts, too.</i></p>
<b>Capacity to manage</b>	<ul style="list-style-type: none"> <li>• Is the socio-economic impact manageable for those responsible for protecting the valued socio-economic component?</li> <li>• Has effective mitigation been committed to or merely identified during EA?</li> <li>• How much will it cost to mitigate the impact? Who pays? Is the net benefit of mitigation more than the benefit of avoiding the impact altogether?</li> <li>• What is the capacity for government, communities, and the developer to manage the impact?</li> </ul>
<b>Duration and frequency of occurrence</b>	<ul style="list-style-type: none"> <li>• Is the socio-economic impact associated with short-term or long-term impacts?</li> <li>• Will there be wide fluctuations in impact directionality that disrupt the community over time (i.e. boom-and-bust periods)?</li> </ul>
<b>Geographic area and population distribution</b>	<ul style="list-style-type: none"> <li>• How many communities will be impacted?</li> <li>• How extensive is the geographical range of the impact?</li> <li>• Are there particularly sensitive areas that might be impacted?</li> <li>• Are there regional “winners” and “losers”?</li> </ul> <p><i>The number of people impacted is not the only measure of significance; extremely adverse impacts on individuals merit attention and mitigation as well.</i></p>
<b>Likelihood of occurrence</b>	<ul style="list-style-type: none"> <li>• Is the impact likely?</li> <li>• How was the impact predicted? How certain is this prediction?</li> <li>• How certain are the predictions of severity and the ability to manage impacts, given mitigation proposals in place?</li> </ul> <p><i>If the predictions are uncertain, the Review Board will use the “Precautionary Principle.”</i></p>
<b>Impact equity</b>	<ul style="list-style-type: none"> <li>• Are certain groups more impacted than others?</li> <li>• Are the more impacted groups more vulnerable to change (e.g. are they already in a weaker socio-economic condition)?</li> </ul>
<b>Public concern</b>	<ul style="list-style-type: none"> <li>• Is there a high level of public concern associated with the impact?</li> </ul> <p><i>Perceived risk, as expressed by community members, can be as important as quantitative predictions. Assessing public concern can be perceived as subjective. Therefore, it is critical that the conclusions about public concern are justifiable. Where possible, it is useful to link public concerns directly to anticipated socio-economic impacts.</i></p>
<b>Level of existing impacts prior to development-cumulative SEIA</b>	<ul style="list-style-type: none"> <li>• Is this impact a “stand alone” one, or will it lead to additional impacts or combine with other existing and potential future impacts to become a cumulative impact?</li> <li>• Does the proposed development add unmanageable impacts to a community already in turmoil?</li> <li>• What defines an unacceptably significant additional input to a socio-economic impact, when the threshold of manageable change has already been passed?</li> </ul> <p><i>The Review Board will seek a broad understanding of the local and regional socio-economic environment and context when answering this question.</i></p>

The Review Board considers the following before making its final determination of significance:

1. Is the impact adverse in nature? The Review Board analyzes the public record to determine whether impacts are beneficial or adverse, and whether beneficial impacts may contribute to adverse socio-economic consequences. For example, a rapid influx of cash into a small community is a beneficial economic impact that in some cases can lead to adverse impacts such as inflation, in-migration pressures, and increasing access to drugs and alcohol. The Review Board may also examine whether an impact beneficial to some groups may actually be adverse for others.
2. Is the identified potential adverse impact **likely**?
3. Is the likely adverse impact **significant**? The Review Board determines if the impact is significant enough to require mitigation measures be implemented in addition to those committed to during the EA.

*(If the Review Board answers yes to each of the three questions above, the impact requires mitigation.)*

4. **Can mitigation measures** reduce the likely adverse significant impact below the level of significance being identified?

If the Review Board answers no to this question, the Review Board will recommend the proposed development be rejected or referred to an EIR.

If mitigation is identified that would reduce the significance of the impact, the Review Board will likely recommend that the proposed development proceed to the regulatory phase if the mitigation is implemented and monitored (Section 128(1) (b) (ii) of the MVRMA).

The challenge is that while regulatory agencies and other responsible organizations must adhere to any mitigation measures, there are few socio-economic terms or conditions that can be placed in a regulatory authorization. Responsible government authorities may be required to exercise their socio-economic protection mandates to implement such measures regardless of the lack of existing regulatory authorization.

## Choosing appropriate mitigation

The Review Board may consider the following when determining if mitigation is appropriate/adequate:

- Will the proposed mitigation protect the social, economic and cultural well-being of the residents and communities of the Mackenzie Valley?
- Will the mitigation eliminate or prevent an impact, reduce the risk of and/or severity of the outcome, or merely compensate for the loss? Mitigation should prioritize finding appropriate ways to reduce or avoid the adverse impact.
- What alternative mitigation is available and what is the rationale for the proposed mitigation? Do the parties agree on the proposed mitigation?
- Is the mitigation reliable enough to effectively reduce or avoid the impact for which it was intended? What is the level of certainty the mitigation will be effective? Will the mitigation reduce impacts below a recognized threshold of manageable change?
- Is implementing the mitigation technically realistic and economically feasible to implement?
- Does the mitigation meet the standard of impact equity? Does it specifically address the needs of the most affected groups, rather than the general needs of local, regional and/or territorial populations? If not, who is excluded and why?
- Does the mitigation have an adaptive management mechanism to deal with unforeseen impacts or varying degrees of impact?
- Are there feasible alternatives to the components of the proposed development that might avoid adverse impacts? Have the developer and other parties to the EA considered these alternatives fully? Changes to work scheduling or the timing of development stages are examples of alternatives that could be considered.

The Review Board's options are limited when it finds a significant impact it cannot mitigate. In such cases, the proposed development is rejected or forwarded to an EIR. Parties that want the proposed development to move forward should commit to mitigating identifiable significant adverse impacts before the EA public record closes.

## 5.7 Report of Environmental Assessment and Reasons for Decision

Once the Review Board completes its deliberations, the Review Board issues the Report of Environmental Assessment and Reasons for Decision (REA). The overall recommendation of the Review Board is defined by section 128 of the MVRMA. (For further information, see the *EIA Guidelines*). The number and type of measures the Review Board may recommend are unlimited.

SEIA is just one component of the larger EA process; the Review Board bases its final recommendation on an assessment of all impacts related to the proposed development, not only socio-economic impacts.

The Review Board submits the REA to the Minister of Indian and Northern Affairs (the federal minister) who distributes the report to other responsible ministers. The Review Board also submits REAs about proposed oil and gas development to the National Energy Board (NEB). The federal and responsible ministers decide whether to accept the REA. If the federal and responsible ministers accept the REA, the Review Board's measures will be included as terms and conditions in the permits and licenses for the approved development.

If the ministers decide to initiate a “consult-to-modify” process, the Review Board participates to ensure any proposed changes to its social or cultural impact measures comply with the original intent of the Review Board's measure. The lack of a legislated instrument to implement some types of mitigation does not preclude the Review Board's determination of significance – and subsequent identification of mitigation measures.

## 5.8 Applying Mitigation and Monitoring

Various levels of government, affected communities, and the developer can all have a role in monitoring whether the mitigation measures are implemented and effective.

The Review Board must be informed about which measures are effective and which are ineffective; this feedback helps the Review Board improve future EAs. Other parties, especially communities, the developer and government, should identify shortcomings in mitigation measures and adapt accordingly. A measure is only as good as its outcome.

Monitoring the implementation of mitigation allows the Review Board to determine the effectiveness of mitigation to achieve the intended outcome. Monitoring must link to the specific predicted impacts through appropriate indicator identification. For example, it makes little sense to monitor employment rates if access to employment was not identified as a potential impact during the EA.

The monitoring of socio-economic impacts should be structured to identify discrepancies between predicted and actual impacts on the human environment. It should also identify when “thresholds of manageable change” have been breached. When change exceeds a threshold the monitoring organization may require adaptive management. Good monitoring requires adaptive mitigation mechanisms even where the individual development is not the sole contributor to an adverse change.

EA decisions can facilitate effective monitoring in several ways. The Review Board may include measures requiring regular communication between regulators, the developer and communities e.g. an annual meeting to assess the progress of commitments and measures toward identified goals. The Review Board may also require a monitoring program as mitigation, and can attach specific thresholds as warranted.





# 6.

## SEIA in Environmental Impact Review

# 6. SEIA in Environmental Impact Review

An environmental impact review (EIR) is the third and final level of EIA in the Mackenzie Valley. A proposed development is rarely referred to an EIR. An EIR can occur when the Review Board determines during an EA that a proposed development is likely to cause significant adverse impacts on the environment or likely to cause significant public concerns. Under certain conditions the federal and responsible ministers can also order an EIR.

The requirements during EIR are similar to those in EA but an EIR requires more comprehensive data and analysis than an EA. Like the transition from preliminary screening to EA, the information generated during earlier SEIA may need to be augmented – but it will remain relevant.

An EIR involves a detailed review by a panel consisting of a minimum of three members. The Review Board determines the membership of the review panel (for transboundary considerations, see the *EIA Guidelines*). The Review Board issues Terms of Reference (TOR) for how the review panel will operate. The Review Board is authorized to include a member with socio-economic expertise on the EIR panel if socio-economic issues are identified as being paramount in the scope of the EIR.

The review panel drafts and approves the TOR for the content of the developer's Environmental Impact Statement.

The MVRMA requires that EIR reviews the same information as an EA (MVRMA section 117), and the following:

- The purpose of the proposed development – the EIR panel may consider whether the purpose of the proposed development is consistent with the goals of sustainable development

- Alternative means for operating and maintaining the proposed development that are technically and economically feasible, and a comparison of the impacts of these alternatives with the impacts of the proposed development; this can include alternatives relevant to SEIA such as those listed in Appendix E
- The need for and requirements of follow-up (monitoring) programs (discussed in Sections 3.7 and 5.8)
- The capacity of renewable resources likely to be significantly impacted by the development to meet existing and future needs (again emphasizing the role of traditional harvesting as an economic provider for the people, and the added emphasis during EIR on addressing issues of sustainability/ intergenerational equity)

The decision-making process and potential outcomes of an EIR are different from those of an EA. An EIR panel does not have to identify significant adverse impacts or public concern in order to make recommendations. In addition, Section 134(2) of the MVRMA gives the EIR panel the explicit power to require the implementation of “a follow-up program” (monitoring), along with any mitigation or remedial measures the panel deems necessary.



# 7.

## Conclusions and Future Amendments

# 7. Conclusions and Future Amendments

Many people and organizations helped the Review Board research and write the *Socio-Economic Impact Assessment Guidelines*. The Review Board solicited and collected information from more than 600 individuals. The Review Board also submitted the draft guidelines to a public review.

The Review Board thanks reviewers from the territorial and federal governments, regulatory agencies, aboriginal organizations, NGOs and other members of the public who gave the Review Board feedback and suggested revisions. The Review Board is also grateful to those individuals and organizations who participated in focus groups, peer reviews, and extensive community and government discussions about the purpose and content of the guidelines.

The Review Board recognizes that guidelines alone do not create an efficient, effective and fair EIA process. The Review Board invites interested people and organizations to suggest specific ideas and means to incorporate SEIA more fully into EIA.

Readers who are interested in the specific impact concerns of communities and other parties, and in identified problems and potential solutions should refer to the Review Board summary document “Socio-Economic Impact Assessment in the Mackenzie Valley: Impact and Process Concerns.” This document and a variety of other resource materials are available online at [mveirb.nt.ca](http://mveirb.nt.ca).

If you want to provide comments on these guidelines, or obtain additional copies or information, contact:

**Manager of Environmental Impact Assessment  
Mackenzie Valley Environmental  
Impact Review Board  
Suite 200, 5102 - 50 Ave  
PO Box 938  
Yellowknife, NT XIA 2N7**

These guidelines may be amended over time because of the following:

- Changes to the MVRMA that effect EIA in the Mackenzie Valley
- Regulatory requirement changes to the MVRMA (section 143)
- Changes to the operational processes established to implement the MVRMA

The Review Board will review and amend these guidelines from time to time as required, based on what is learned through their application, and to ensure that the guidelines reflect up-to-date best practices.



## Glossary & Appendices

# GLOSSARY

## Access agreement

Contractual agreement that outlines terms and conditions, including financial arrangements, for access on or through land with aboriginal interest; required for accessing aboriginal-owned lands in settled land-claim and self-government regions in the Mackenzie Valley.

## Adaptive management

A management system that defines environments as unpredictable; management is continually monitored, and if initial mitigation measures are ineffective, additional or alternative mitigation is applied to keep the impact within acceptable levels.

## Baseline conditions

Baseline conditions describe past and current conditions associated with the socio-economic environment of a proposed development. Baseline conditions provide a benchmark against which to measure change, and they can isolate trends occurring in the pre-development scenario. Good baseline analysis also identifies strengths and weaknesses in the socio-economic environment.

## Benchmarks

Benchmarks are specific reference points, indicator “standards” that allow comparisons across time or space. The NWT Housing Cost Index compares housing prices across the NWT against the benchmark in Yellowknife; the Consumer Price Index can measure change over time and space in the cost of a specific “bundle” of basic goods.

## Commitment

In an EA, a commitment is a statement of intent by any party (or parties) to alter its planned activities to meet an expressed need. The Review Board documents these commitments and includes them in its Report of Environmental Assessment. Commitments identified during EIA become part of the development description and therefore are required mitigation.

## Community

A group of people who share an attachment with one another and ascribe to a common membership and shared rights and responsibilities; a community can be linked geographically, culturally, ethnically, racially, or through some other identifier or a combination thereof.

## Community wellness

Community wellness is the status of the physical, emotional, social, cultural and economic well-being of community. The state of community wellness depends on the health and well-being of every aspect of a community, the individual, families, etc.

## Consultation

The *Mackenzie Valley Resource Management Act* Section 3 states that,

*“in relation to any matter, to a power or duty to consult, that power or duty shall be exercised*

- (a) by providing, to the party to be consulted,*
  - (i) Notice of the matter in sufficient form and detail to allow the party to prepare its views on the matter,*
  - (ii) A reasonable period for the party to prepare those views, and*
  - (iii) An opportunity to present those views to the party having the power or duty to consult; and*
- (b) by considering, fully and impartially, any views so presented.”*

## Cultural impact

Any impact on the set of values, norms and beliefs that guide the behavior of individuals who are associated communally. In the Mackenzie Valley, concerns among aboriginal groups about cultural impacts tend to revolve around ► their relationship with the land ► time spent on the land ► the ability to harvest wildlife and other resources; and the maintenance of ► traditional language ► inter-generational relationships ► laws and ► general way of life. Cultural impacts are included under the umbrella of SEIA.

**Cumulative impacts**

Accumulated impacts (biophysical, socio-economic or cultural) caused by repeated impacts on a valued component.

**Directly affected community**

A community that is predicted to be substantially impacted by a proposed development, adversely and/or beneficially.

**Economic impacts**

Economic impacts affect people's ability to make a living, their material well-being, the capacity to participate in economic activities, and the production, distribution and allocation of economic resources. Economic impacts also include the distribution of wealth and financial burdens created by the development (see Appendix G for more information).

**Economic impact assessment**

Examines how a proposed development might impact how people make a living, their material well-being and the economic structures of a society. This can include an examination of conflicts and transitions between non-market and market economic values and systems.

**Environmental assessment (EA)**

The second level of EIA in the Mackenzie Valley: an in-depth examination of a proposed development by the Review Board.

**Environmental impact assessment (EIA)**

The process of systematically considering the potential impacts of a proposed development during decision-making. In the Mackenzie Valley, preliminary screening, EA and EIR are the three levels of EIA.

**Environmental impact review (EIR)**

The third and final level of EIA in the Mackenzie Valley: a comprehensive examination of a proposed development by a review panel.

**Externalities**

Benefits or costs that are not included in the market price of goods or services.

**Harvesting**

Harvesting as defined in the MVRMA (Section 2), in addition to the gathering of berries, plants and other subsistence materials from the land.

**Heritage Resources**

Archaeological or historic sites, burial sites, artifacts and other objects of historical, cultural or religious significance, and historical or cultural records.

**Impact equity**

A principle that states adverse socio-economic impacts should not fall disproportionately on certain groups of the population, if they do not also have access to beneficial impacts from the development.

**Impact benefit agreement (IBA)**

IBAs are private contractual arrangements between a developer and a specific group of aboriginal people; intended as a means of providing benefits to communities in the course of development.

**Indicator**

A measurable activity, experience or dynamic that helps illustrate quantitative socio-economic baseline conditions (prior to the development) or impacts (after the development begins). The unemployment rate of a community is one indicator of economic well-being.

**Monitoring**

A consistent method of measuring or watching something to detect changes, using scientific or traditional knowledge; a continuing assessment of indicators in a repetitive and systematic way. Monitoring may occur at numerous levels (e.g. development-specific, local/community, regional, territorial, national and international).

### **Potentially-affected parties, groups, and, or communities**

A party, group or community is considered potentially affected if it is an identifiable group or populated location, identified in the course of an EIA as meriting further study due to the potential for being impacted adversely by the proposed development.

### **Preliminary screening**

An initial environmental examination of a proposed development for potential significant adverse environmental, social and cultural impacts, and public concern, conducted pursuant to section 124 of the MVRMA.

### **Primary Research**

The process through which new studies generate required information for analysis and consideration.

### **Review Board measure**

In its Report of Environmental Assessment, the Review Board proposes measures to mitigate a specific impact on the environment below the level of significance. A First Nation, local government, regulatory authority, department or agency of the federal or territorial government affected by the measure shall act in conformity with it to the extent of their respective authorities (MVRMA section 130(5)).

### **Scoping**

The identification and prioritization of relevant issues to focus on during an EIA; the decision of what physical works to included as a part of the proposed development (scope of development), and the timeline and geographical limits of issues being assessed (scope of assessment).

### **Secondary Research**

The review of existing information sources to use for analysis and in reference to a specific topic area.

### **Significance**

An informed judgement of what is important based on the available evidence. Significance is further defined in the Review Board's "Reference Bulletin: Operational Interpretation of Key Terminology in Part Five of the *Mackenzie Valley Resource Management Act*", available at [mveirb.nt.ca](http://mveirb.nt.ca).

### **Social infrastructure**

Those community agencies, services, and facilities and other social support measures necessary for adequate functioning of a community, and that contribute to the well-being of its residents.

### **Socio-economic environment**

A.K.A the "human environment" – the components of an individual's, family's or community's day-to-day lived experience-includes economic activity, social relations, well-being and culture.

### **Socio-economic Impact Assessment (SEIA)**

SEIA is the systematic analysis used to identify and evaluate the potential socio-economic and cultural impacts of a proposed development on the day-to-day lives of individuals, families, and communities. Where those impacts are significant and adverse, SEIA also attempts to reduce, remove or prevent them from occurring.

### **Suggestion**

A non-binding idea for mitigation of an identified impact on the environment or public concern, as written in the Review Board's Report of Environmental Assessment.

### **Sustainable development**

Also known as sustainability or intergenerational equity, this term refers to the goal of satisfying current needs without compromising the ability of future generations to meet their needs.

## **Thresholds**

Thresholds provide limits of manageable (or acceptable) change against which impacts of developments can be measured and monitored. An example would be the requirement for additional social service providers if population growth exceeds five percent in a community in the course of a year.

## **Traditional knowledge**

In considering the broad definition of “impact on the environment” in the MVRMA, the following three elements of traditional knowledge that contribute to the EIA process as set out in the MVRMA are particularly important:

1. Knowledge about the environment
2. Knowledge about using and managing the environment
3. Environmental values

With respect to SEIA, traditional knowledge may include knowledge about the historical and current social, cultural and economic environs that people have worked and lived in, and provide understanding of the critical requirements of-and potential threats to-valued components.

## **Triggers (also called causal factors)**

A trigger is any activity that initiates another activity. In SEIA, the concept of trigger is used to express the relationship between a cause and an effect, an important consideration when looking at whether a development contributes solely or in part to an identifiable impact.

## **Valued components**

Valued components are aspects of the economic, social, biophysical or cultural fabric of a community or region that are important to the party who defines them. They are important because they provide economic value, reflect connections that are vital to a way of life, or are vital to maintaining quality of life in the community. Valued components provide a focus for the collection and reporting of appropriate information, thus narrowing of the scope of EIA.

# APPENDIX A

## SEIA Guidelines Quick Reference Sheet

Looking for something specific? Here is a list of frequently asked questions about SEIA in the Mackenzie Valley, and where in the *SEIA Guidelines* answers can be found.

Frequently Asked Questions	information located in...
What is SEIA?	Section 2.1
Is SEIA required in the Mackenzie Valley?	Section 2.3
What are the steps of SEIA?	Section 2.6
What are acceptable data sources for SEIA?	Section 3.3, Appendix C and D
What are the considerations in determining the scope of assessment and the scope of development for an SEIA?	Section 3.2
How is the level of SEIA effort determined?	Section 3.2.2
How can the socio-economic impacts of a development be predicted?	Section 3.4, Appendix F
What are common mitigation strategies for socio-economic impacts?	Section 3.5
How is SEIA conducted during the three levels of Mackenzie Valley EIA?	
1. Preliminary screening	Section 4
2. Environmental assessment	Section 5
3. Environmental impact review	Section 6
What are valued components, who determines them, and how are they used?	Sections 2.1 and 3.2.3
Who makes a determination of significance in SEIA, when, and how?	Section 3.6, 4.4, 5.6
How can I learn more about SEIA?	Appendix C, References and Suggested Further Readings
How are specific elements of SEIA conducted?	
• Health Impact Assessment	Appendix G1
• Heritage Resources	Appendix G2
• Traditional Economy	Appendix G3, Sec. 3.4.3
• Impacts on the Wage Economy	Appendix G4, Sec. 3.4.4
• Social Impact Assessment	Appendix G5, Sec. 3.4.2
• Cumulative Socio-Economic Impact Assessment	Appendix G6

## APPENDIX B Considerations for Conducting SEIA

The following are important considerations for good SEIA. They are derived from an understanding of SEIA methods, interpretation of guiding legislation, previous EIA experience in – and the socio-economic context of – the Mackenzie Valley, and emerging concepts of good practice in the SEIA field. They provide broad guidance to serve as the goalposts for the conduct of SEIA. While specific methods used by assessors can vary, good SEIA should attempt to adhere to these considerations.

1. *Match the scale and focus of a SEIA with the characteristics of the proposed development, and the concerns of responsible authorities, and potentially affected people and communities*
  - The developer should attempt to determine the required level of SEIA before filing a preliminary screening application
  - Consideration of a proposed development's size, complexity, socio-economic context, and level of public concern can help the developer determine the required level of SEIA
  - Potentially affected communities and responsible authorities should be included, whenever possible, in determining the level of SEIA required for a proposed development
  - When confused about the required level and direction of SEIA, the developer should consult the preliminary screener or the Review Board for clarification before proceeding
  - Address issues and public concerns that matter to potentially affected residents and communities instead of general issues and public concerns that are easy to quantify
  - Focus the SEIA on valued components identified during initial scoping discussions
  - Search for relationships/triggers/pathways between an impact's cause and its effect; focus on mitigating these causal factors
2. *Minimize adverse impacts while enhancing beneficial impacts*
  - Make avoiding or reducing adverse impacts a priority
  - Tailor potential beneficial impacts to communities' plans, priorities and desires; determine whether potential adverse impacts impede a communities' plans, priorities and desires
  - EIA is a planning tool: sustainable development is the end goal
3. *Use the "Precautionary Principle" and other international SEIA principles*
  - Parties to an EIA should become familiar with internationally-recognized SEIA principles<sup>12</sup>
  - In absence of acceptable certainty, use a precautionary approach when collecting data (err on the side of additional primary data collection), and when determining impact significance ("likelihood" rather than "full certainty" that impacts will occur is the test for whether mitigation measures are required)
4. *Focus on impacts that are at least partially attributable to the proposed development*
  - SEIA *should* attempt to separate natural changes from the changes the proposed development may cause
  - SEIA *should* consider natural change and the existing baseline conditions that make communities vulnerable; this information indicates a community's ability to absorb and manage additional changes

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<sup>12</sup> For more information on these principles, consult the International Association of Impact Assessment's International Principles for Social Impact Assessment <http://www.iaia.org>

- The fact that personal choices contribute to socio-economic impacts does not exempt these impacts from consideration; altered social or economic structures affect a person's options
  - Consider the cumulative impacts of past, current and reasonably foreseeable future developments
  - A proposed development may not be fully responsible for predicted adverse impacts – governments and communities have a role negotiating mitigation for accelerated adverse impacts: the key question is: “Will the development make the problem worse?”
5. *Involve various potentially affected groups early and extensively*
- Articulating the values and vision of those who may be most affected by a proposed development is an essential part of SEIA
  - The developer should attempt to engage communities and groups that may be affected by the proposed development, earlier rather than later
  - When possible, involve potentially affected communities in identifying and defining valued components and appropriate indicators; also involve potentially affected communities in reviewing the early findings of SEIA
  - Use information gathering and dissemination methods and media that are culturally appropriate and manageable
  - Ensure people and communities are studied ethically and according to recognized social-science methods; prior informed consent is a social research principle
6. *Conduct long-range, forward-looking studies that rely on the insight of past experiences*
- Study the full lifecycle of the proposed development including the pre-construction and post-closure stages
  - When possible, incorporate assessments of outcomes and “lessons learned” from case studies of previous similar developments, or from community experiences
7. *Impact equity*
- No group of people, particularly those that might be considered more sensitive or vulnerable as a result of age, gender, ethnicity, race, occupation or other factors, should have to bear the brunt of adverse social impacts
  - SEIA recognizes that some people will benefit more from development than others, but attempts to avoid passing adverse impacts on to groups without allowing these groups access to beneficial impacts
  - Socio-economic benefits should flow most readily to those facing significant adverse impacts
  - Focus on studying and mitigating the potential adverse impacts of a proposed development on the communities the proposed development is most likely to impact
  - Consider fully any identifiable vulnerable groups within communities
8. *Use experts from the government, communities and social sciences*
- When practical and reasonable, employ expert SEIA practitioners who use sound and replicable social-science research concepts and methods; this is especially important when conducting primary research
  - Use established economic methods for measuring costs and benefits including the cost to different levels of government; include and justify the assumptions of the economic models
  - Identify experts in communities who can provide local and traditional knowledge
  - Recognize that communities have valuable expertise, and, wherever possible, engage communities in determining how past and current developments impact their socio-economic and cultural environment, and how future developments may impact this environment

- Attempt to incorporate community goals (e.g., community development plans, wellness strategies, needs assessments, visioning statements, community-based indicators) into issues scoping and the determination of valued components
  - Governmental “social-envelope” departments have invaluable expertise that is necessary for providing baseline information and analysing potential impacts<sup>13</sup>
9. *Use reliable, appropriate and relevant information from primary and secondary sources*
- Use secondary data sources first to determine whether additional primary research is necessary
  - Lack of currently available information does not imply potential impacts do not exist
  - Data must be accompanied by a rationale for its use and a description of how the data was collected and analyzed
  - Primary research methods and analysis should be as objective and reasoned as possible while remaining flexible enough to recognize the value of reported personal and community experience
10. *Use appropriate indicators for the Mackenzie Valley*
- Collect information in the form of indicators that are relevant to the involved communities and jurisdictions. The developer must understand and incorporate the socio-economic context and values of communities and jurisdictions when determining indicators for baseline conditions
  - Statistics and analysis should be broken down enough to determine whether different communities and demographic groups are vulnerable to change<sup>14</sup>
  - Study each involved community independently, as well as doing regional and territorial impact assessments as necessary; each level of community has different needs and priorities
11. *Balance traditional knowledge and scientific knowledge*
- Incorporate traditional knowledge into SEIA as described by the Review Board’s *Guidelines for Incorporating Traditional Knowledge*, while respecting specific local rules and customs
  - Focus on collecting and analyzing qualitative and quantitative data
12. *Follow-up and monitor socio-economic and cultural mitigation measures*
- Ongoing monitoring and public reporting are fundamental to any effective mitigation plan
  - When possible, identify the limits of manageable change for the assessed indicators, and through adaptive management identify mitigation requirements necessary if these limits are exceeded
  - The participation of potentially affected communities, regulators, developers and government in monitoring is essential

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13. Appendix C has a list of government departments with socio-economic mandates and/or expertise. Many of these organizations, especially the “social envelope” departments of the GNWT, are responsible for the ongoing well-being of the people of the Northwest Territories.

14. For example, statistics on local and regional income may artificially mask extreme differences between aboriginal and non-aboriginal populations, or between men and women.

## APPENDIX C

### Organizations with SEIA Expertise

#### GNWT Departments

The role of the GNWT in SEIA is based on the government's legal responsibility for delivering programs and services related to health, social services, education, training, cultural well-being and economic development in the NWT.

GNWT departments are accessible online at [gov.nt.ca](http://gov.nt.ca), including the following:

Department	Socio-economic mandate	Contact information
Municipal and Community Affairs	<ul style="list-style-type: none"><li>• Manages the impact of development on municipal infrastructure and governance, and the local capacity to manage impacts</li></ul>	(867) 395-7205 <a href="http://maca.gov.nt.ca">maca.gov.nt.ca</a>
Health and Social Services	<ul style="list-style-type: none"><li>• Develops strategies to improve community and individual wellness</li><li>• Delivers health and social services and programs</li><li>• Department responsible for the health of NWT residents</li></ul>	(867) 920-3070 <a href="http://hss.gov.nt.ca">hss.gov.nt.ca</a>
Industry, Tourism and Investment	<ul style="list-style-type: none"><li>• Implements economic-development plans, encourages economic diversification, supports traditional economic activities</li><li>• Encourages benefits to the NWT from industrial activity</li><li>• Facilitates energy planning</li></ul>	<a href="http://iti.gov.nt.ca">iti.gov.nt.ca</a>
Education, Culture and Employment	<ul style="list-style-type: none"><li>• Supports education, training and learning programs</li><li>• Preservation and protection of heritage resources in the NWT</li></ul>	<a href="http://ece.gov.nt.ca">ece.gov.nt.ca</a>
Justice	<ul style="list-style-type: none"><li>• Delivers justice services, and ensures the fair treatment and protection of NWT residents</li></ul>	<a href="http://justice.gov.nt.ca">justice.gov.nt.ca</a> Resource Development Impacts Advisor (867) 873-7080
NWT Housing Corporation	<ul style="list-style-type: none"><li>• Provides information on the affordability and adequacy of NWT housing</li></ul>	<a href="http://nwthc.gov.nt.ca">nwthc.gov.nt.ca</a> Policy, Programs & Informatics (867) 873-7858

*Continued...*

Department	Socio-economic mandate	Contact information
Bureau of Statistics	<ul style="list-style-type: none"> <li>Develops, interprets and distributes accurate statistical information on the economy, society and demography of the NWT</li> </ul>	stats.gov.nt.ca (867) 873-7147
Department of Public Works and Services	<ul style="list-style-type: none"> <li>Maintains community infrastructure and systems, including water and sewage systems</li> </ul>	pws.gov.nt.ca Senior Planning Advisor (867) 873-3178
Department of Transportation	<ul style="list-style-type: none"> <li>Maintains and develops NWT transportation systems</li> </ul>	dot.gov.nt.ca
Environment and Natural Resources	<ul style="list-style-type: none"> <li>One window portal for GNWT input to EA processes</li> <li>Provides information and policy on traditional harvesting, Protected Areas Strategy, energy conservation and forest management</li> </ul>	enr.gov.nt.ca Environmental Assessment Manager (867) 873-7244

## Federal Departments

Department	Socio-economic mandate	Contact information
Indian and Northern Affairs	<ul style="list-style-type: none"> <li>Responsibilities are delivered primarily by the Northern Affairs Program in two areas: supporting Northern political and economic development through the management of federal interest; and promoting sustainable development of the North's natural resources and northern communities</li> <li>Also plays a lead role in identifying and mitigating cumulative impacts</li> </ul>	nwt-tno.inac-ainc.gc.ca (867) 669-2500
Health Canada	<ul style="list-style-type: none"> <li>Ensures that human health is a component in impact assessment</li> <li>Conducting and promoting health impact assessments</li> <li>Providing information on human health impacts</li> </ul>	hc-sc.gc.ca/ehas
Social Development Canada	<ul style="list-style-type: none"> <li>Supports and encourages families with children, the elderly, and the disabled through citizen focused programs and services: responsible for delivering income security programs</li> </ul>	sdsc.gc.ca
Human Resources and Skills Development Canada	<ul style="list-style-type: none"> <li>Encourages participation in the workforce through human capital development and labour market development.</li> </ul>	hrdsc.gc.ca
Royal Canadian Mounted Police	<ul style="list-style-type: none"> <li>Produces a yearly environmental scan on existing and potential crime rates</li> </ul>	rcmp-grc.gc.ca

*Continued...*

Department	Socio-economic mandate	Contact information
Industry Canada	<ul style="list-style-type: none"> <li>• Develops economic opportunities for Canadians while ensuring a sustainable economic, social and environmental future</li> <li>• Encourages sustainability and provides corporate social responsibility tools and information</li> </ul>	ic.gc.ca
Statistics Canada	<ul style="list-style-type: none"> <li>• Delivers and interprets statistical information</li> <li>• Collects, interprets and publishes social and economic statistics on Northern communities, inter-jurisdictional comparative demographic and other data</li> </ul>	statcan.ca

Other federal departments, such as Environment Canada, and Fisheries and Oceans have indirect linkages with SEIA, depending on the economic importance of different renewable resources to potentially affected communities.

## Other Organizations

Organization	Socio-economic Mandate	Contact Information
National Energy Board	<ul style="list-style-type: none"> <li>• As an independent regulatory agency of the federal government, the Board is mostly concerned with oil and gas developments in frontier lands and with pipeline developments</li> <li>• They provide advice on energy and energy sustainability to the government</li> </ul>	neb-one.gc.ca
MVRMA boards (land and water boards, the Review Board, renewable resource boards, land use planning boards)	<ul style="list-style-type: none"> <li>• Each region with a settled land claim has its own system of boards, including renewable resource boards (which have information on local harvesting activity and success rates) and land use planning boards (which issues draft and final land use plans)</li> <li>• There may be local renewable resource councils or hunters and trappers associations which may merit consultation regarding harvesting</li> </ul>	For more information, contact the boards directly or through INAC's Board Relations Secretariat 6th floor -Bellanca Building 4914 - 50th Street, Box 1500, Yellowknife, NT X1A 2R3

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Organization	Socio-economic Mandate	Contact Information
Independent Environmental Monitoring Agency (Mandated to monitor BHP Billiton Ekati Diamond Mine)	<ul style="list-style-type: none"> <li>Reviewing and commenting on the design of monitoring and management plans and the results of these activities</li> <li>Monitoring and encouraging the integration of traditional knowledge of the nearby Aboriginal Peoples into the mine's environmental plans</li> <li>Acting as an intervener in regulatory processes directly related to environmental matters involving the Ekati Diamond mine and its cumulative effects</li> <li>Bringing concerns of the aboriginal peoples and the general public to BHP Billiton and government</li> </ul>	PO Box 1192 Yellowknife, NT X1A 2N8 Tel: (867) 669-9141 Fax: (867) 669-9145 monitor@yk.com
Diavik Community Advisory Board (DCAB)	<ul style="list-style-type: none"> <li>Established pursuant to the Diavik Diamond Mines Inc. Socio-economic Monitoring Agreement, DCAB provides advice on the socio-economic impacts of the Diavik diamond mine and the implementation and effectiveness of mitigation measures</li> </ul>	(867) 669-3651
Cumulative Impacts Monitoring Program	<ul style="list-style-type: none"> <li>Examines how land and water use, and waste deposits affect the environment of the NWT now and in the future</li> <li>The program is based in land claims legislation, and follows a community-based approach to monitoring the human and biophysical aspects of the environment</li> </ul>	nwtcimp.ca cimp@inac-ainc.gc.ca
Dene Cultural Institute	<ul style="list-style-type: none"> <li>Preserving, protecting and promoting Dene culture</li> </ul>	deneculture.org
Dene Nation	<ul style="list-style-type: none"> <li>Advises on Dene cultural, social and historical knowledge</li> </ul>	denenation.com
Gwich'in Social and Cultural Institute	<ul style="list-style-type: none"> <li>Promotes Gwich'in culture and society</li> <li>Has an approved policy regarding the use of traditional knowledge</li> </ul>	gwichin.ca
Aurora Research Institute	<ul style="list-style-type: none"> <li>Administers licensing of research on human and biophysical subjects in the NWT and Nunavut</li> <li>Also mandated with "supporting or conducting research which contributes to the social, cultural and economic prosperity of the people of the NWT"</li> </ul>	nwtresearch.com (867) 777-3298

## **Land-claim organizations and regional aboriginal groups**

Each region has a land-claim organization that usually includes land-administration groups, health and social services boards, and development/land corporations. For more information, consult the GNWT's Aboriginal Directory at [gov.nt.ca/MAA/index.html](http://gov.nt.ca/MAA/index.html).

## **Cultural and or social aboriginal organizations**

Elder or youth councils may have traditional knowledge, oral histories, and a variety of materials on socio-economic and cultural change in their regions.

## **Local aboriginal groups and local governments**

- Band councils
- Métis local corporations
- Town, hamlet or city councils
- Resource-development planning committees
- Interagency committees
- NWT Association of Municipalities

## **Economic development**

- Chambers of commerce
- Canadian Association of Petroleum Producers (CAPP)
- NWT and Nunavut Chamber of Mines
- Community economic development officers
- Local entrepreneurs

## **Social services and advocacy**

- NWT Status of Women
- Native Women's Association of the NWT
- NWT Seniors Association
- Friendship centres
- NWT Literacy Council
- Churches
- YWCA

## **Boards in other jurisdictions**

Given the broad similarities in development types and demographic, environmental and economic structures throughout Canada's North, records of EIA from the following jurisdictions can be of use as case studies:

- Nunavut Impact Review Board (NIRB)
- Yukon Environmental and Socio-economic Assessment Board (YESAB)
- Inuvialuit Settlement Region-Environmental Impact Review Board and Environmental Impact Screening Committee

## **Non-governmental organizations**

- Alternatives North
- Canadian Parks and Wilderness Society (CPAWS)
- Public Service Alliance of Canada North (PSAC)
- Northern Territories Federation of Labour
- Canadian Arctic Resources Committee (CARC)
- Ecology North
- World Wildlife Fund (WWF)

# APPENDIX D

## Valued Components and Indicators for SEIA

Ideally, SEIA should engage potentially affected communities in collecting/collating baseline information, and determining the valued components, criteria and indicators. (In some cases, a community may have a list of indicators that have it has identified as relevant and appropriate.) In addition, existing baseline information may be available from communities and/or government.

Table D provides general examples of valued components, criteria and indicators that can be used for the SEIA of development proposals.

The Terms of Reference for the EA or EIR of proposed development may require development-specific indicators.

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Economic Well-Being</b>	<i>Cost of living</i>	<ul style="list-style-type: none"> <li>Consumer price index</li> </ul>	Based on the cost of goods and services <i>Useful in baseline assessment to estimate cost of living</i>	Statistics Canada
	<i>Value of goods and services</i>	<ul style="list-style-type: none"> <li>GDP</li> <li>Gross local and regional income</li> </ul>	Regional and territorial gross figures of income <i>Can be too general to apply usefully to small communities</i>	Statistics Canada
	<i>Income levels</i>	<ul style="list-style-type: none"> <li>Median employment income</li> </ul>	Average income of NWT residents	Statistics Canada Bureau of Statistics
		<ul style="list-style-type: none"> <li>Income by source – especially social assistance rates</li> </ul>	May indicated the level of dependence on income assistance	Statistics Canada
	<i>Employment rates and types</i>	<ul style="list-style-type: none"> <li>Employment rate</li> </ul>	Percentage of employed people	Bureau of Statistics
		<ul style="list-style-type: none"> <li>Employment participation rate</li> </ul>	Percentage of available workers, employed and unemployed, participating in the workforce	Bureau of Statistics
		<ul style="list-style-type: none"> <li>Rates of seasonal and full-time employment</li> </ul>	Indicates economic stability May indicate the ability of communities and residents to participate in the traditional economy	Bureau of Statistics
		<ul style="list-style-type: none"> <li>Percentage of individuals and families living below the poverty level</li> </ul>	Number of marginalized and vulnerable populations	Statistics Canada

*Continued...*

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Economic Well-Being</b>	<i>Economic activities</i>	<ul style="list-style-type: none"> <li>• Comparison of census data and occupational profiles of regional residents with employment opportunities with the proposed development</li> </ul>	Degree to which the proposed development may alter the occupational profile of potentially affected community	Statistics Canada Bureau of Statistics
		<ul style="list-style-type: none"> <li>• Percentage of workforce-aged people engaged in traditional activities</li> </ul>	Strength of traditional economy	Bureau of Statistics GNWT
		<ul style="list-style-type: none"> <li>• Number of local businesses, bankruptcies and start ups</li> </ul>	Changes in economic health in the region – a measure of capacity to take advantage of changing business opportunities and susceptibility to downturns	Local and territorial chambers of commerce Development corporations
		<ul style="list-style-type: none"> <li>• Changing property values</li> </ul>	Project-specific demands on real estate can create boom-and-bust cycles	Canadian Housing and Mortgage Corporation NWT Housing Corporation
	<i>Traditional economy activities</i>	<ul style="list-style-type: none"> <li>• Changes in harvester travel patterns or loss of harvest areas</li> </ul>	Potential for disruption of harvester work	GNWT First Nations and aboriginal organizations Bureau of Statistics
		<ul style="list-style-type: none"> <li>• Percentage of population engaged in traditional economy</li> </ul>	Strength of traditional economy	Bureau of Statistics GNWT
		<ul style="list-style-type: none"> <li>• Local, regional and territorial harvesting levels</li> </ul>	Strength of harvesting activities	Bureau of Statistics GNWT

*Continued...*

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Economic Well-Being</b>	<i>Traditional economy activities</i>	<ul style="list-style-type: none"> <li>Percentage of income derived from traditional economic activities</li> </ul>	Ratio of traditional economic activities to wage labour market – the importance of the traditional market may not be apparent because this information is underreported	Bureau of Statistics GNWT
		<ul style="list-style-type: none"> <li>Market value of traditional economy</li> </ul>	Market demand for products of the traditional economy	Bureau of Statistics GNWT
	<i>Level of economic equity</i>	<ul style="list-style-type: none"> <li>Gender wage gaps</li> </ul>	Potential for the proposed development to affect existing or potential gender disparity	Statistics Canada Bureau of Statistics
		<ul style="list-style-type: none"> <li>Family income disparities</li> </ul>	Distribution of wealth	Bureau of Statistics
<b>Stable and healthy communities</b>	<i>Existing social networks</i>	<ul style="list-style-type: none"> <li>Population dependency ratios</li> </ul>	Higher dependency ratios usually indicate more stable families.	Statistics Canada
		<ul style="list-style-type: none"> <li>Existing social welfare agencies and organizations</li> </ul>	Number of charitable and non-profit agencies, and public agencies Strength of existing community and social networks	Canadian Customs and Revenue Agency GNWT Municipal and Community Affairs GNWT Health and Social Services Regional and territorial health and social service authorities
		<ul style="list-style-type: none"> <li>Relationships with Elders</li> </ul>	New employment opportunities may reduce familial interaction with Elders Increased value of wage economy may alter attitudes about obligations to care for Elders	GNWT Health and Social Services Regional and territorial health and social service authorities Interviews
		<ul style="list-style-type: none"> <li>Changing family structures</li> </ul>	Changing familial values and patterns, e.g., married, never married, single-parent households, etc.	Statistics Canada Bureau of Statistics

*Continued...*

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Stable and healthy communities</b>	<i>Existing social networks</i>	• Altered social networks	New employment opportunities and other impacts of the proposed development may affect social networks (e.g. extended work rotation schedules may disrupt existing social networks)	Interviews
		• Levels of volunteerism and participation in community events	May indicate community attitudes about civic engagement (e.g., decreased attendance at community gatherings may indicate low community morale) Community cohesion	Surveys Interviews
		• Past and current attitudes about development	Positive or negative feelings, beliefs or opinions expressed by community residents about the proposed project.	Public meetings Surveys
	<i>Attitudes toward development</i>	• Disrupted patterns of daily life	Disruptions in daily living and work activities	Surveys
		• Changing perceptions about quality of life and/or the value of the environment	Changes in perceived quality of life for people dependent on the land and/or the relationship to sacred areas	Public meetings Interviews Focus groups
		• Changing aesthetic qualities	Related to quality of life – may be area used for harvesting, traditional gathering places and/or tourism activities	First Nations and aboriginal organizations Local and territorial chambers of commerce Tourism associations Environmental NGOs

*Continued...*

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Stable and healthy communities</b>	<i>Attitudes toward development</i>	<ul style="list-style-type: none"> <li>Community infrastructure and services – including education, childcare, medical care and social and community support services, recreation, water, sewerage and waste disposal and transportation</li> </ul>	Potential for increased or decreased quality of basic infrastructure services and facilities in communities	GNWT Municipal and Community Affairs GNWT Department of Transportation GNWT Health and Social Services Regional and territorial health and social service authorities Bureau of Statistics
	<i>Use and maintenance of Infrastructure</i>	<ul style="list-style-type: none"> <li>Public involvement in decisions affecting community, land and resource base</li> </ul>	Degree of civic involvement Community cohesion	Local, territorial and federal government First Nations and aboriginal organizations
	<i>Political structures</i>	<ul style="list-style-type: none"> <li>Voter turnout in municipal, First Nations and territorial elections</li> </ul>	Degree of civic involvement Community cohesion	Elections Canada
		<ul style="list-style-type: none"> <li>Relevance to policy objectives of local and regional development</li> </ul>	Key to understanding the potential relevance of the proposed project to communities and residents	Regional business and government plans
		<ul style="list-style-type: none"> <li>Trust in political and social institutions</li> <li>Integrity of government agencies</li> </ul>	Measures of citizen faith in institutions may indicate citizen belief in ability of government to manage and monitor the proposed development	Statistics Canada Bureau of Statistics First Nations and aboriginal organizations Interviews Surveys
		<ul style="list-style-type: none"> <li>Ability to exercise Treaty rights or rights of self government</li> </ul>	Faith in the protection of aboriginal rights through Treaties or modern agreements may indicate potential for conflict or disagreement	First Nations and aboriginal organizations Interviews

*Continued...*

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Stable and healthy communities</b>	<i>Political structures</i>	<ul style="list-style-type: none"> <li>Ability to protect and use intellectual property</li> </ul>	Control and ownership of data that emerges from First Nations	First Nations and aboriginal organizations
	<i>Justice and safety</i>	<ul style="list-style-type: none"> <li>Violent crime rates</li> <li>Juvenile crime rates</li> <li>Number of property crimes</li> <li>Policing capacity</li> <li>Public perceptions of health and safety</li> <li>Number of emergency shelter users, include number of repeat users</li> <li>Number of domestic violence complaints</li> <li>Number of child protection investigations</li> <li>Number of children in care</li> </ul>	Indicates existing social problems, and the capacity of communities and the justice system to protect and promote public and personal safety	Statistics Canada Bureau of Statistics RCMP Municipal enforcement agencies
	<i>Housing affordability and availability</i>	<ul style="list-style-type: none"> <li>Percentage of individuals and families with inadequate housing or access to affordable housing</li> <li>Percentage of households with six or more inhabitants</li> <li>Housing affordability</li> <li>Housing ownership</li> </ul>	Indicates crowding, housing functionality and maintenance, and housing availability	Statistics Canada Bureau of Statistics Canadian Housing and Mortgage Corporation NWT Housing Corporation

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**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Population sustainability</b>	<i>Population growth</i>	<ul style="list-style-type: none"> <li>• Yearly population estimates</li> <li>• Population mobility (intra- territorial and inter- provincial)</li> <li>• NWT population growth by age</li> <li>• Number of transient workers</li> </ul>	Population characteristics	Statistics Canada Bureau of Statistics
<b>Health and well-being</b>	<i>Health behaviours</i>	<ul style="list-style-type: none"> <li>• Incidence of heavy alcohol use</li> <li>• Alcohol consumption per capita</li> <li>• Number of children born to women younger than 18</li> <li>• Gambling rates</li> <li>• Smoking rates</li> </ul>	Indicators of stress, change, social dysfunction, and possibly, inadequate health and social services	Statistics Canada Bureau of Statistics
	<i>Health conditions</i>	<ul style="list-style-type: none"> <li>• Birth and death rates</li> <li>• Sexually transmitted infection rates</li> <li>• Numbers of reported injuries</li> <li>• Diabetes levels</li> <li>• Cancer/asthma rates</li> <li>• Mental health status</li> </ul>	Indicators of health and well-being	Health Canada GNWT Health and Social Services Regional and territorial health and social service authorities

*Continued...*

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Health and well-being</b>	<i>Community and health system characteristics</i>	<ul style="list-style-type: none"> <li>• Health care providers per capita</li> <li>• Health services and programs</li> <li>• Self-reported workloads</li> </ul>	Uptake and use of services in the region-may illustrate projected need	Health Canada GNWT Health and Social Services Regional and territorial health and social service authorities
<b>Education and training</b>	<i>Training</i>	<ul style="list-style-type: none"> <li>• Availability and change in training programs</li> </ul>	Potential for existing programs to meet needs of the proposed development	GNWT Education, Culture and Employment Aurora College
	<i>High school</i>	<ul style="list-style-type: none"> <li>• Percentage of population &gt;15 years and older with high school diploma</li> <li>• High school graduation rate</li> <li>• Percentage of population &gt;15 years with grade 9</li> <li>• Percentage of secondary school graduates requiring upgrading for post-secondary education</li> </ul>	Indicates potential employable population for semi-skilled and unskilled positions	Bureau of Statistics GNWT Education, Culture and Employment
	<i>Post Secondary</i>	<ul style="list-style-type: none"> <li>• Percentage of population with some post-secondary training or education</li> </ul>	Indicative of potential employable population for skilled positions	GNWT Education, Culture and Employment Bureau of Statistics
	<i>Literacy levels</i>	<ul style="list-style-type: none"> <li>• Functional literacy rates</li> </ul>	Whether a person is able to understand and employ printed information in daily life, at home, at work and in the community	GNWT Education, Culture and Employment Bureau of Statistics NWT Literacy Council

*Continued...*

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Education and training</b>	<i>Cultural education</i>	<ul style="list-style-type: none"> <li>• Number of people with knowledge about traditional harvesting methods</li> <li>• Number of people who know how to live in a traditional economy</li> <li>• Opportunities for knowledge sharing</li> </ul>	The level of traditional knowledge that exists and is being shared in the communities	NWT Literacy Council Interviews First Nations and aboriginal organizations
	<i>Language use</i>	<ul style="list-style-type: none"> <li>• Percentage of aboriginal people who speak an aboriginal language at home</li> <li>• Percentage of aboriginal people ≥ 15 years who are fluent in an aboriginal language</li> <li>• Level and accessibility of aboriginal first language instruction</li> </ul>	Use and development of aboriginal language skills in the community	First Nations and aboriginal organizations Bureau of Statistics GNWT Education, Culture and Employment NWT Literacy Council
<b>Maintenance of Traditional Culture</b>	<i>Diet</i>	<ul style="list-style-type: none"> <li>• Use of harvested meat</li> <li>• Percentage of diet provided by country food</li> <li>• Use of harvested plants for food/ medicine</li> </ul>	Use of traditional foods in the community Potential indicator of increased incidence of diabetes and/or other diet-related health problems	First Nations and aboriginal organizations Bureau of Statistics

*Continued...*

**TABLE D** Common Valued Components, Criteria and Indicators for SEIA *Continued*

Valued Socio-economic Component	Criteria	Indicator	Meaning and Potential Value	Source
<b>Maintenance of Traditional Culture</b>	<i>Hunting, fishing and trapping</i>	<ul style="list-style-type: none"> <li>• Percentage of population that hunts, fishes, traps for sustenance</li> <li>• Percent of population hunts, fishes traps for leisure/sport</li> <li>• Production of traditional clothing</li> </ul>	Related to diet, but also to culture and physical well-being	First Nations and aboriginal organizations Bureau of Statistics GNWT
	<i>Cultural values and religion</i>	<ul style="list-style-type: none"> <li>• Changes in cultural practices</li> <li>• Religious practice by denomination</li> <li>• Changes in cultural values, such as beliefs, norms, and expectations of personal behaviour</li> <li>• Experience of marginalization- the structured exclusion of groups because of cultural characteristics</li> </ul>	Indicates changes caused by increased involvement in wage economy or the dominant society <i>It is difficult to identify specific influences, but cumulative effects must also be considered</i>	Statistics Canada Bureau of Statistics First Nations and aboriginal organizations Interviews
	<i>Cultural spaces</i>	<ul style="list-style-type: none"> <li>• Effects on known cultural, historical and archaeological resources</li> <li>• Decline in use of place names</li> </ul>	Project-specific effects that can damage sacred or historic areas, and loss of use of place names	Interviews Surveys

# APPENDIX E Sample Terms of Reference Requirements

Table E below illustrates some socio-economic information that may be required by the Terms of Reference for an EA or EIR. This is not a required or exhaustive list; the issues that must be addressed, topic areas and level of detail required by the development-specific TOR are based on

the size and nature of the proposed development, its socio-economic context, and the level of types of impacts that might reasonably be expected to occur. Consult Terms of Reference from similar EAs for more information, with an emphasis on more recent ones.

**TABLE E** Socio-economic Information Typically Required by the Terms of Reference

TOR Subsection	Topic Area	Information which may be required in a Developer’s Assessment Report
<b>Description of Existing Environment</b>	<i>Socio-economic baseline conditions</i>	<p>Include current and historic baseline data and trends (use data and trends that identify specific populations and sub-populations if available). Identify the communities and other affected groups that are included in the scope of assessment - provide a rationale for not including any “borderline” communities. For each community, provide the following baseline data- distinguish between ethnic groups and gender if feasible and appropriate:</p> <p><b>General</b></p> <ul style="list-style-type: none"> <li>• Population demographics</li> <li>• Cost of living and income levels</li> <li>• Housing statistics</li> <li>• Status of social, recreational and physical infrastructure</li> <li>• Valued components</li> </ul> <p><b>Economic</b></p> <ul style="list-style-type: none"> <li>• Employment statistics</li> <li>• Labour-force characteristics</li> <li>• Levels of training/education (status and opportunity levels)</li> <li>• Level of existing industrial development</li> <li>• Levels and types of business activity</li> <li>• Stated community priorities, economic or social development plans</li> <li>• Participation rate in the traditional economy</li> <li>• Valued components</li> </ul> <p><b>Health and well-being</b></p> <ul style="list-style-type: none"> <li>• Level of general community wellness</li> <li>• Health rates</li> <li>• Crime rates</li> <li>• Addiction rates</li> <li>• Valued components</li> </ul>

Continued...

**TABLE E** Socio-economic Information Typically Required by the Terms of Reference *Continued*

TOR Subsection	Topic Area	Information which may be required in a Developer's Assessment Report
<b>Description of Existing Environment</b>	<i>Historic/current land use</i>	<ul style="list-style-type: none"> <li>• Describe harvesting activities such as hunting, trapping and berry picking and their importance to the potentially affected communities</li> <li>• Identify harvest species, harvest levels, and the level of importance of the traditional economy to communities being studied</li> <li>• Traditional land users and period of occupancy</li> <li>• Recreational land use (identify user groups)</li> <li>• Other economic uses of the land</li> <li>• Final and draft community and regional land use plans</li> </ul>
	<i>Cultural and heritage resources</i>	<ul style="list-style-type: none"> <li>• Identify any known or suspected heritage resources and their affiliation</li> <li>• Significant heritage sites such as harvesting areas, spiritual places, trails, special landscape features, etc. and their affiliation</li> </ul>
<b>Development Description</b>	<i>Human resource requirements</i>	<ul style="list-style-type: none"> <li>• List number of employees required for each stage of the proposed development</li> <li>• Identify skill levels required for each stage of the proposed development</li> <li>• Proposed work schedules and work-rotation schedules</li> </ul>
	<i>Workforce housing</i>	<ul style="list-style-type: none"> <li>• Identify the type(s) and location(s) of employee housing (e.g. onsite camps, temporary dwellings in nearby communities, existing dwellings in a regional centre, etc.)</li> <li>• Describe policy options for managing employee housing, employee conduct and safety, and travel to and from the proposed development site</li> </ul>
	<i>Business inputs required</i>	<ul style="list-style-type: none"> <li>• Required contractors and goods and services</li> </ul>
	<i>Economic inputs and outputs</i>	<ul style="list-style-type: none"> <li>• Predicted gross expenditures for each stage of the proposed development</li> <li>• Describe any proposed investments in human or physical capital other than direct development-related investments (e.g., training, community education, new or improved training facilities, etc.)</li> </ul>
<b>Alternatives</b>	<i>Work scheduling</i>	<ul style="list-style-type: none"> <li>• Alternatives to proposed work schedules</li> </ul>
	<i>Development location</i>	<ul style="list-style-type: none"> <li>• Where applicable, identify any alternatives to locations of physical works, transportation corridors and ancillary developments; describe the socio-economic context and valuation, and rationale for location choices</li> </ul>

*Continued...*

**TABLE E** Socio-economic Information Typically Required by the Terms of Reference *Continued*

TOR Subsection	Topic Area	Information which may be required in a Developer's Assessment Report
<b>Alternatives</b>	<i>Development timing/ phases</i>	<ul style="list-style-type: none"> <li>Alternative timelines for the proposed development (focus on maximizing long-term employment)</li> </ul>
	<i>Need for camps</i>	<ul style="list-style-type: none"> <li>State whether camps will be used for housing workers</li> </ul>
	<i>Land usage</i>	<ul style="list-style-type: none"> <li>Compare the development utility with the economic and social utility of alternative land uses for the area (e.g. tourism); include any information on parks, Protected Area status or proposals, and recreational features</li> </ul>
	<i>"No-go" option</i>	<ul style="list-style-type: none"> <li>Explain the relative merit of the development proceeding as opposed to no development happening (the "no-go" option)</li> </ul>
	<i>Energy</i>	<ul style="list-style-type: none"> <li>Identify alternative energy sources and/or alternatives for conserving energy</li> </ul>
<b>Public Consultation</b>	<i>Requirements for early community engagement</i>	<ul style="list-style-type: none"> <li>Developers required to include specific information in DAR as per the instructions in Section 3.2.1 on early community engagement</li> </ul>
<b>Boundaries</b>	<i>Spatial boundaries</i>	<ul style="list-style-type: none"> <li>Each valued component must have an identified spatial boundary</li> <li>There must be a stated rationale for each spatial boundary</li> <li>Identify any public concerns about native title and/or other land issues</li> </ul>
	<i>Temporal boundaries</i>	<ul style="list-style-type: none"> <li>Same requirements as spatial boundaries</li> </ul>
<b>Assessment of Impacts on the Socio-economic Environment</b>	<i>Direct Employment</i>	<ul style="list-style-type: none"> <li>Compare the human resources required with the available human resources in each potentially affected community- include an inventory of required skills</li> <li>Percentage of human resources that could be employed locally and regionally in relation to the total amount of available employment</li> <li>Any barriers to employing, retaining and advancing Northern and/or aboriginal residents</li> <li>Developer and other parties' plans, strategies or commitments to maximize Northern/aboriginal employment, and promote and retain Northern/aboriginal employees</li> <li>Additional training proposed to make local and regional human resources more competitive</li> <li>Estimated increases or decreases in local and/or regional populations caused by the proposed development</li> </ul>

*Continued...*

**TABLE E** Socio-economic Information Typically Required by the Terms of Reference *Continued*

TOR Subsection	Topic Area	Information which may be required in a Developer's Assessment Report
<b>Socio-economic Environment</b>	<i>Business activity, and costs and benefits to government</i>	<ul style="list-style-type: none"> <li>• Percentage of local, regional and territorial businesses that could be contracted for goods and services in relation to the total amount of possible business</li> <li>• Strategies for maximizing local business opportunities</li> <li>• Economic multipliers of development, including income, employment and local goods and services multipliers</li> <li>• Increased training requirements for business development</li> <li>• Estimated amount of external competition for business</li> <li>• Indicate how development will contribute to economic diversification in each spatial boundary</li> <li>• Estimated cost to government associated with the proposed development</li> <li>• Describe any plans to promote local post-development economic stability, emphasizing transition programs for workers, and overall protection from boom-and bust-cycles</li> </ul>
	<i>Distribution of adverse and beneficial impacts</i>	<ul style="list-style-type: none"> <li>• Predicted distribution of royalties and taxes from immediate development and indirect benefits (e.g. income tax)</li> <li>• Predicted employment, income and business activity multipliers of the proposed development (by community)</li> <li>• Predicted local economic impacts on inflation, costs of living, housing availability, access to goods and services, physical and social infrastructure</li> <li>• Identify any groups within the community that are more likely to be adversely impacted</li> <li>• Identify impacts on the traditional economy, and the role of conserving natural resources in development planning</li> <li>• Estimate which communities will be most impacted, adversely and beneficially</li> <li>• Estimated level of, and impacts associated with, population changes caused by in- and out-migration</li> <li>• Identify economic “lessons learned” from other similar developments inside or outside the NWT Identify any plans, strategies or commitments to mitigate impacts, and any agreements for distribution of benefits</li> </ul>
	<i>Social Impacts</i>	<ul style="list-style-type: none"> <li>• Identify and assess impacts on valued socio-economic components</li> <li>• Potential impacts on social structures and way of life</li> <li>• Potential impacts of increased disposable income on social issues in communities, including alcohol and drug usage, gambling, domestic violence, housing pressures, and educational access, quality and levels of completion</li> <li>• Potential impacts on employee health</li> <li>• Potential impacts and pathways related to individual and population health</li> <li>• Identify how changing population and settlement patterns may affect social service providers</li> </ul>

*Continued...*

**TABLE E** Socio-economic Information Typically Required by the Terms of Reference *Continued*

TOR Subsection	Topic Area	Information which may be required in a Developer's Assessment Report
<b>Socio-economic Environment</b>	<i>Social Impacts</i>	<ul style="list-style-type: none"> <li>• Identify social “lessons learned” from other similar developments</li> <li>• Identify any programs, policies, commitments to protect and promote individual, family and community wellness</li> </ul>
	<i>Heritage Resources</i>	<ul style="list-style-type: none"> <li>• Potential impacts of the proposed development, and associated development activities (e.g. increased access to harvesting areas) on heritage resources (see Appendix G2 for more details)</li> </ul>
	<i>Traditional land use and resource harvesting</i>	<ul style="list-style-type: none"> <li>• Potential direct and/or indirect impacts on hunting, fishing, trapping or berry picking, including access to land, reduced or improved hunting success, quality of country foods, etc.</li> <li>• Potential impacts on the ability of traditional users and non-traditional users to access traditional lands</li> <li>• Describe any potential or proposed compensation plan or strategy for to mitigate any impacts on traditional harvesting activities</li> </ul>
	<i>Protected Areas</i>	<ul style="list-style-type: none"> <li>• Identify any areas proposed for withdrawal under the NWT Protected Areas Strategy</li> <li>• Identify any areas of special significance not included in the Protected Areas Strategy</li> </ul>
	<i>Aesthetic qualities and resources</i>	<ul style="list-style-type: none"> <li>• Identify any particular landforms, locations of special interest, or other unique environments that merit special attention</li> <li>• Discuss potential aesthetic impacts of the proposed development, in combination with other cumulative developments</li> <li>• Identify users who will be adversely affected by lost or altered aesthetic qualities</li> </ul>
	<i>Socio-economic environmental monitoring</i>	<ul style="list-style-type: none"> <li>• Describe any commitments, plans or strategies to monitor and adaptively manage <ul style="list-style-type: none"> <li>▶ local and regional business opportunities</li> <li>▶ employment</li> <li>▶ continued education and training</li> <li>▶ social impacts</li> <li>▶ impacts on traditional harvesting, and</li> <li>▶ employee and community health and wellness</li> </ul> </li> </ul>
	<i>Closure and Reclamation</i>	<ul style="list-style-type: none"> <li>• Identify strategies for communities to adapt to post-closure economic environment</li> <li>• Compare closure alternatives: 1) removal or 2) maintenance of development infrastructure post-closure; include assessment of costs of care and maintenance</li> <li>• Identify whether technology transfer will happen</li> </ul>
	<i>Cumulative Impacts</i>	<ul style="list-style-type: none"> <li>• Potential cumulative impacts on cultural values, tradition, language, spirituality, etc.</li> <li>• Potential cumulative impacts on social cohesion, quality of life and ability to adapt positively to economic change</li> <li>• Potential cumulative impacts on land usability for traditional economy and/or other alternative economic activities</li> </ul>

## APPENDIX F Identifying Potential Impacts

Developers can use the following worksheet to assist in identifying potential impacts on socio-economic valued components. This completed worksheet can be useful when developing submissions for EIA authorities or as an “in-house” SEIA exercise.

### Instructions for Using Worksheet

1. List development-related components in the first row.
2. List valued socio-economic components in the first column. Examples of development-related components and valued socio-economic components are listed in Table F2.
3. Determine if any development-related component may interact with any of the socio-economic valued components by asking, “Does this element of the proposed development enhance or adversely impact this valued component?” Estimate whether the interaction will be beneficial, adverse, or both, as seen in the worksheet
4. If no interaction is expected, leave the cell blank. Identify any relationships between development components and potential changes in the socio-economic environment where not enough information is available to make an estimation of the impact.
5. Include completed worksheet in EIA documentation.

**TABLE F1** Worksheet to Determine Potential Impacts on Valued Components

Valued Socio-Economic Component	Development-related Component			
	New access	Increased traffic	Employment multipliers	Required skill levels
Protect heritage resources	? (unknown, requires additional data)			
Adequate physical infrastructure		- (adverse impact)		
Develop local capacity to get and maintain jobs				+/- (adverse & beneficial impacts)
Enhance employment levels			+ (beneficial impact)	

**TABLE F2** Examples of Potential Development-related Components and Valued Socio-economic Components

<b>Development-related Component</b>	
<ul style="list-style-type: none"> <li>• New or improved transportation access routes</li> <li>• Increased traffic</li> <li>• Increased noise levels in community and in surrounding area</li> <li>• Increased pollution</li> <li>• Restriction of movement in certain areas</li> <li>• Changes in land management status in certain areas</li> <li>• Location in proximity to communities</li> <li>• Location in proximity to other significant areas</li> <li>• Increased capital investment</li> <li>• Increased employment and income multipliers</li> <li>• Timing of activities (e.g., all at once or staggered)</li> <li>• Direct employment and subcontracting labour needs</li> <li>• Associated material requirements</li> <li>• Direct and indirect wages</li> <li>• Associated service requirements</li> <li>• Required skill levels of workers</li> <li>• Provision of training/career development opportunities</li> <li>• Requirement for long-distance commuting</li> <li>• Proposed work scheduling</li> <li>• Need for specialized business goods and services</li> </ul>	<ul style="list-style-type: none"> <li>• Government revenues (fees, taxes, royalties, etc.)</li> <li>• Agreements between developer and government and/or developer and community for impacts</li> <li>• Provision of educational opportunities</li> <li>• Increased physical infrastructure in community</li> <li>• Physical destruction of habitat</li> <li>• Increased air traffic</li> <li>• Increased social infrastructure in community</li> <li>• Increased indirect economic activity including new industry</li> <li>• Time length of development components and associated labour requirements</li> <li>• Workplace physical environment</li> <li>• Workplace social atmosphere</li> <li>• Workplace hiring and firing policies</li> <li>• Creation of relationships between developer and community</li> <li>• Development of camps to house workers</li> <li>• Cumulative impacts of project success or failure</li> <li>• Energy requirements</li> </ul>
<b>Valued socio-economic components</b>	
<ul style="list-style-type: none"> <li>• Sustainable employment</li> <li>• Equitable distribution of wealth</li> <li>• Low rates of poverty</li> <li>• Acceptable standards of living</li> <li>• Reasonable access to goods and services</li> <li>• Low debt-to-income ratios</li> <li>• Acceptable level of health and social services</li> <li>• Acceptable physical infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Manageable population growth</li> <li>• Strong sense of community cohesion and wellness</li> <li>• Support for community values</li> <li>• Maintain cultural traditions and laws through healthy inter-generational relationships</li> <li>• Maintain traditional language</li> <li>• Promote healthy quality of life in the community</li> </ul>

# APPENDIX G Digging Deeper

## (G1) Health Impact Assessment

The goal of health impact assessment (HIA) is similar to the goal of SEIA: to minimize negative effects, maximize positive effects and reduce inequalities. A population health approach establishes indicators related to mental and social well-being, quality of life, income, employment and working conditions, education and other factors known to influence health. HIA predicts, either qualitatively or quantitatively, how the proposed project will influence these health indicators, and develops mitigation measures to avoid or manage impacts.

“Population Health” is an approach that recognizes health is a capacity or resource rather than a state – it is a tool we use to cope with change, and it is either bolstered or eroded by that change. This broader notion of health recognizes the range of socio-economic and cultural environmental factors that contribute to health.

The determinants of the population health framework include the following:

- Income and social status
- Social support networks
- Education
- Employment and working conditions
- Physical environments
- Social environments
- Biology and genetic endowment
- Personal health practices
- Coping skills
- Healthy child development
- Health services
- Culture
- Gender

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## (G2) Consideration of Heritage Resources

Impacts on heritage resources are defined as changes to, loss of, or pressures on the following:

- Historic property
- Archaeological resources, including burial sites
- An aesthetically important site
- Culturally significant sites

Indirect impacts may include the devaluation of the land as a social artifact, a cultural symbol, an educational tool, and/or a spiritual reservoir. The degree of disturbance does not have to be severe to cause impacts.

Unlike many elements of SEIA, there are strong controls available to regulators to protect heritage resources in the *Mackenzie Valley Land Use Regulations*. The Prince of Wales Northern Heritage Centre is the main contact organization for archaeology; it is responsible for protecting archaeological sites in the NWT.

There are also a variety of local and regional aboriginal organizations and historic societies that can provide

information about local and regional heritage resources. Consult the Review Board’s *Guidelines for Incorporating Traditional Knowledge* and regional or local guidelines before attempting to gather traditional knowledge for use in SEIA.

Archaeological expertise, traditional knowledge holders and local knowledge holders must be included in the baseline data collection when examining heritage resources. Developers should note that the PWNHC estimates less than one per cent of heritage resources in the NWT are identified. The existence of traditional trails, important hunting or other harvesting grounds, place names, among other clues, are indicators of key areas with high heritage resource potential.

Example mitigation might include the use of community environmental monitors who have the authority to halt work on a development when there are concerns about heritage resources. This allows the developer an opportunity to identify additional mitigation to address the concerns.

### **(G3) Consideration of the Traditional Economy**

The traditional economy is inherently socio-economic and biophysical; therefore it requires a different analysis than is used for analysing the wage economy. Each element of the traditional economy is important – berry picking and access to medicinal plants must be considered in addition to hunting, fishing and trapping. Conserving the natural resources for the aboriginal people of the Mackenzie Valley is a guiding principle of Part 5 of the MVRMA. Key contacts include the GNWT ENR Wildlife Division, the regional Renewable Resources Boards and community Renewable Resources Councils, all of which undertake harvest surveys. Questions to consider when assessing impacts on traditional economy include:

#### *Baseline*

1. What is the baseline information about the nature of the traditional economy for the region?
2. What are the existing and/or traditional land use patterns for each community?
3. How many local people are involved in the traditional economy for ► monetary gain and/or ► country food?
4. What are the background trends and predictions if this development goes ahead?
5. What animals and plants are considered to be of particular importance to the traditional economy of the communities in question? How are these species impacted?

#### *Value of traditional economy*

6. What is the value of the traditional economy in both dollars and subsistence valuation?
7. What is the value of the traditional economy in non-financial terms, such as individual well-being, community cohesion and cultural maintenance?
8. What is the potential valuation of harvest opportunity lost to the harvesters in the event of an impact on the traditional use area? Can a replacement cost for loss of country food be estimated?

9. How do local people feel about the trade offs incumbent between new jobs with greater monetary income and potential losses to the traditional economy? Which groups are most impacted, and are they among those likely to benefit from the beneficial wage economy boosts?
10. What plans does the developer, community and/or government have in place to mitigate the loss of animals, reduced harvesting success, increased costs of harvesting success, increased costs of food, change in diet, etc?

#### *Impact on traditional land users*

11. Does the development have the potential to disrupt traditional land uses? Describe in detail the mechanisms by which the development would disrupt the movement or health of wildlife, quality of wildlife resources, location access changes (for locals and outsiders), among other issues.
12. What is the effect of the development's footprint on traditional use areas and activities? Here assessors should include the direct and indirect effects (e.g., competition from other hunters) of the development and define the area under consideration in the SEIA.

#### *Impact of employment rotation*

13. Does the development have the potential to affect the stability of the non-traditional economy? How? Be sure to consider timing and flexibility of employment rotations and of development activities, and their potential pressures on specific species at different times of year.
14. How much time will be available (especially during key harvesting seasons) for local inhabitants newly engaged in the wage economy as a result of the development to get out on the land? Are there increased pressures on key species attendant with these policies?

#### *Cumulative impacts*

15. Does the development or associated cumulative developments create conflicts with existing or proposed community or regional conservation plans or community-proposed protected areas?

## (G4) Consideration of Impacts on the Wage Economy

SEIA holds that both the *contribution to and costs on* the prevailing economic system of new developments should be assessed, and that factors previously externalized by developers (e.g. environmental, infrastructure, and social service costs of development) need to be examined alongside beneficial economic impacts. Key contacts for information on the non-traditional (wage) economy include all of the economic organizations listed in Appendix C. Several methods are available to estimate beneficial and adverse economic impacts, as described in Section 3.4.4.

Key economic issues in the Mackenzie Valley that may come up during EIA, depending on the size and nature of the development, include the following:

- Economies in transition – The two types of economies, traditional and non-traditional, are not always complementary in their skill sets. The transition to the wage economy has not been an easy one for practitioners of the traditional economy.
- Maximizing beneficial impacts – Small population, large developments; how do benefits stay in the North?
- Impact equity.
- Unintended consequences of increased employment and income - how to handle (crossover to social impacts).
- Boom and bust economic cycles and sustainable development.

Key Questions:

1. How will this development make a difference to the local and regional economy in the short and long term?
2. What current economic activities will be adversely/beneficially impacted?
3. How many new jobs will the development create and

what will be the extent of the income, population and employment multipliers?

4. How prepared are the potentially affected communities to take advantage of employment? What skills will be required to allow them to take full advantage of the situation?
5. Will there be adverse social and cultural impacts result from beneficial impacts such as new jobs? Exercises such as issue identification and running of multi-stakeholder scenarios can examine this sort of question.
6. What level of commitment did the developer make toward economic diversification?
7. What are probable impacts of population growth and other factors on existing or planned community physical and social services infrastructure?
8. What additional costs will there be to municipal government programs from the proposed development?
9. How will commitments made in relation to socio-economic activity be enforced and reported on?
10. Can the developer do anything to encourage the development of a sustainable economic base following the development closure?

### *Consideration of Alternative Land Uses*

Recreational value, aesthetic value, alternative economic activity value such as tourism or outfitting, are examples of valued components that may be impacted by a proposed development. The developer should consider alternative land use when conducting its SEIA. This can involve discussions with local business and recreation groups, GNWT Tourism and NWT Arctic Tourism, pre-development community surveys about land usage and perceptions of the values of the land after the development is in place.

## (G5) Consideration of Social Impacts

Generally, social impacts are those which affect the day-to-day quality of life, social cohesion, sense of belonging, family structures, etc. of individuals and communities. These are all aspects of **community wellness**. Economic wealth and financial opportunity are not the only arbiters of sustainable development. Community members can provide valuable information on social impacts, as well, government and non-governmental service provider agencies can provide key input about how development has, is, and will continue to impact communities and regions. Health Canada and GNWT Health and Social Services are important sources of information on population health modeling.

The following questions may assist a developer when considering potential social impacts:

- Which of the communities included in the SEIA are more sensitive (i.e. vulnerable) to externally imposed development? Why?
  - What groups within potentially affected communities are most vulnerable? Why? Are there currently adequate social services available to the most vulnerable (e.g., health services, counselling, community justice, shelters)?
  - Are there traditional or local knowledge sources for information about historic and current social impacts?
  - Is the community prepared for the proposed development? Is it in favour of it? Why or why not?
  - What components of the social context are valued most highly in each community, and merit special protection? What other aspects of the social environment are not prioritized and may be sacrificed in exchange for beneficial impacts of development?
- Which indicators are most appropriate for monitoring changes in social wellness for this community?
  - What are the levels of background change that is occurring to socio-economic valued components?
  - What are the trends and root causes behind these shifts? (This assists in determining the level of causation attributed to a specific development.)

When examining social impacts, developers should attempt to identify how specific development components may interact with society. Does the proposed development have the potential to:

- Disrupt the lives of individuals and families?
- Impact human mental and physical health and social stability due to changes in behavioural patterns (e.g. drug, alcohol, and/or gambling abuse and associated negative outcomes like high violent crime rates and family dysfunction)?
- Affect the availability and affordability of housing?
- Erode cultural well-being?
- Impact community infrastructure?
- Affect gender relations?
- Adversely affect quality of life? How? How is quality of life defined by community members? What is the importance of lifestyle, access to land, communal activities, aesthetic or recreational values of place?

## **(G6) Cumulative Impacts and SEIA**

Unlike socio-economic or wildlife harvesting impact assessment, cumulative SEIA is not topic specific. It involves adding the specific and combined impacts of a proposed development on the socio-economic valued components to those of other past, present and future developments. Cumulative socio-economic impact assessment is a relatively under-developed field, and there are several challenges to its incorporation into SEIA. For one thing, the identification of cumulative impacts is difficult. Not only do changes occur over long periods, with many socio-economic and cultural factors in play, but it is difficult to determine with certainty how much any single development contributes to these cumulative impacts.

However, cumulative impact assessment is valuable in that it requires a historic long-term perspective, allowing assessors to see outside the box that confines the current development. Important to this idea is the concept of “thresholds.” Just like natural ecosystems, social systems can be damaged or destroyed if the health of valued components is undermined or removed.

The Review Board must consider cumulative impacts of past, present and reasonably foreseeable future developments and have regard for social, cultural and economic well-being of residents and communities in the Mackenzie Valley. This requires an understanding the socio-economic context of the proposed development. Research can help identify thresholds of manageable change, what consequences of crossing them might be. In cases where the impacts are as uncertain or unknown, the precautionary principle should apply.

Four key steps to conducting cumulative SEIA include the following:

- 1) Identifying valued components (done largely during scoping for SEIA)
- 2) Determining what other human activities substantially affect the same valued components
- 3) Predicting the combined effect of the proposed development in combination with these other activities
- 4) Identifying ways to mitigate and manage the combined impacts

Potential cumulative socio-economic impacts of particular importance in the Mackenzie Valley are:

- **Cumulative impacts on cultural integrity of aboriginal people**

This is a multi-faceted concern, given that both the biophysical and socio-economic environments face added pressures. For example, pressures on available time to access the land and places of special significance, or quality time to spend for cultural practices, inter-generational relations, language development, and wildlife harvesting, may threaten culture.

- **Cumulative ability to retain employment, business and income in the North**

Localized developments may affect community social structures particularly if skilled labourers are required to move to other locations for employment.

- **Cumulative impacts on regional, community, family cohesion**

Changing culture and economy also lead to changes in family structures, for better or for worse.

- **Additional pressures on infrastructure (both physical and social)**

With change comes opportunity and opportunity seekers. As the North's economy develops, the ability of government to meet the needs of a growing populace becomes more important than ever.

Given these key considerations, an adaptive approach to monitoring may be warranted, one that can rely on solid data, make reasoned analytic judgments, and respond to newly emerging concerns.

There are currently very few defined thresholds for cumulative socio-economic impacts. Through the Northwest Territories Cumulative Impact Monitoring Program (NWT CIMP) a working group is examining ways to develop community wellness thresholds for cumulative impact assessment. In the meanwhile, the guidebooks and case study materials, as well as community inputs in the forms of statements of goals, needs, and concerns about cumulative threats to the socio-economic environment, can assist in identifying thresholds of manageable change at the community or regional level.

The consideration of appropriate boundaries for data collection is important for any cumulative effects assessment. Each boundary has limits and benefits.

- **Community level** – makes most sense to the people in the region and tends to be the data that people most want to observe. However, it can be falsely misleading in that identified trends may not be statistically significant, the population is not sufficient to make general observations on, and data be confidential to maintain anonymity.
- **Regional level** – At this level, the issues of data suppression and statistical significance are dealt with, however the particularity of data is lost-and cultural groupings for data may be masked.
- **Territorial level** – This level is perhaps the best for observing large trends. For example, territorial analysis of diabetes, cancer, and other health issues are best observed with a large population database. The relevance of local breakdowns can be lost when large scale analysis is undertaken. Local variations and subtleties will be hidden. In addition, at this meta-scale of analysis, correlations with industrial activity are very difficult to establish. On the other hand, it is often simpler to collect data at the territorial level when determining major impact groups.

Key for cumulative impact assessment is to find the “canaries in the coal mine”; those indicators that can predict future change for several other related indicators.

It is best to collect data for indicators that have well-established goals, analytic capacity, and agreed upon action thresholds, rather than try to capture everything. Example socio-economic indicators to assist in cumulative impact assessment include:

1. Percentage of population 15 years and older with Grade 12 education
2. Functional literacy
3. Health and social service personnel per 1,000 population (regional and local values more important than territorial here)
4. Spousal abuse indicators (reported rates, number of women and children in shelters)
5. Divorce and separation rates and percentage of single-parent families
6. Percentage of children living in single-parent, low income families
7. Percentage of families using country food for more than 50 percent of nutritional value
8. Binge drinking rates
9. Levels of violent crime
10. Employment rates (keeping in mind local participation rates will vary and can mask)
11. Participation in traditional activities
12. Language use rates
13. Addictions and recovery rates



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## **Community Engagement in SEIA**

The sources noted here deal with ways of creating a productive relationship between developers and communities, as well as highlighting the type of traditional knowledge inputs available that go beyond Traditional Ecological Knowledge. Those developments which will be attempting to utilize communities' traditional knowledge in their SEIA should consult the Review Board's *Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment*.

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## **Aboriginal SEIA documents**

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Parlee, B. and E. Marlow for the Lutsel K'e First Nation. (1997). *Traditional Knowledge on Community Health Community-Based Monitoring Final Report*. Submitted to the West Kitikmeot Slave Study Society. [www.wkss.nt.ca](http://www.wkss.nt.ca).

### **SEIA Case or Sectoral Studies**

The cases below include developments or studies of industrial sectors that have relevant characteristics for consideration by Developers in the Mackenzie Valley (i.e., they involved a significant aboriginal presence in the affected region, non-renewable resource development, and/or the Northern climate). In addition, parties interested in how SEIA has been treated in the Mackenzie Valley should examine *Terms of Reference* and *Reports of Environmental Assessment* from previous EAs in the Mackenzie Valley.

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