



REVISED *DRAFT* GUIDELINES FOR THE PREPARATION OF AN IMPACT STATEMENT FOR

DEBEERS CANADA INC.'S CHIDLIAK DIAMOND MINE PROPOSAL (NIRB FILE NO. 22MN025)

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DEFINITIONS AND TERMS

Definitions of key terms for the purpose of the **Impact Statement (IS)** Guidelines are provided below. This list should be used in coordination with the NIRB's *Technical Guide Series: Terminology and Definitions* ([NIRB, n.d.](#))¹.

<i>Country foods</i>	The traditional diet of Inuit, including caribou, musk-ox, bears, whales, seals, birds, arctic char, shellfish and berries among other foods that are hunted, fished or gathered locally (GN, 2011).
<i>Ecosystemic</i>	Relating to the complex of a natural community of living organisms and its environment functioning as an ecological unit in nature.
<i>Environment</i>	<p>A holistic view of the components of the Earth that includes the complex web of inter-relationships between the living and non-living components which sustain all life on earth, including the social, cultural and health aspects of human group existence. Components of the Earth include:</p> <ul style="list-style-type: none">(a) land, water and air, including all layers of the atmosphere;(b) all living and non-living matter and living organisms, including plant, animal, and human life;(c) the social, economic and cultural conditions that influence the life of people or a community insofar as they are related to the matters described in (a) and (b);(d) the interacting natural systems that include components referred to in (a), (b) and (c).
<i>Harvest</i>	The reduction of wildlife into possession, and includes hunting, trapping, fishing, as defined in the <i>Fisheries Act</i> , netting, egging, picking, collecting, gathering, spearing, killing, capturing or taking by any means (GC and TFN, 1993).
<i>Ice scour</i>	Geological term for long, narrow ditches in a seabed, created by the collision of fast ice and pack ice and the grounding of icebergs.

¹ Guidance documents may periodically be updated, and it is the Proponents responsibility to ensure it has access to the most up to date guidance materials.

<i>Impact</i>	<p>As directed in the NuPPAA S. 90.(a) through (j), the Board must take into account specific factors related to impacts. Terms associated with determining impacts can be further described as follows.</p> <p>Direct Effects - refer to changes in the environmental components that result from direct cause-effect consequences of interactions between the project activities and the environment. For example, the construction of a quarry site may see direct loss of local vegetation and disturbance to soils and aquatic environments.</p> <p>Indirect Effects - result from cause-effect consequences of interactions between the environment and indirect impacts. For example, the effect of pollution may not only be seen directly in the loss of local vegetation, but indirectly as a degradation of the health, culture, and social structure of the local people.</p> <p>Cumulative Effect -The refer to the accumulation of changes to the environment caused by human activities (e.g., past, existing, and proposed activities, including activities associated with the project under assessment). These changes occur over space and time and can be brought about by environmental effects that are additive or interactive. For example, hunting, oil spills, and loss of habitat, commercial fishing pressure on prey species, can affect marine mammals in the Arctic.</p>
<i>Inuit</i>	Aboriginal peoples of northern Canada and Greenland. In the context of Nunavut, for the purpose of these Guidelines, meaning those receiving benefits under the <i>Nunavut Agreement</i> .
<i>Local Study Area</i>	That area where there exists the reasonable potential for immediate impacts due to project activities, ongoing normal activities, or to possible abnormal operating conditions.
<i>Nunavummiut</i>	Residents of Nunavut.
<i>Nunavut Agreement</i>	The “Agreement Between the Inuit of the Settlement Area and her Majesty the Queen in Right of Canada”, including its preamble and schedules, and any amendments to that agreement made pursuant to it (Tilleman, 2005).
<i>Parties</i>	See definition of public
<i>Potentially affected communities</i>	A community or communities with the potential to be impacted, either positively or negatively, by a proposed project or development. Such communities may be defined physical entities or comprised of dispersed populations in the area of influence of a project.
<i>Precautionary principle</i>	Where there are threats of serious or irreversible damage, lack of full scientific certainty must not be used as a reason for postponing cost-effective measures to prevent environmental degradation (UN, 1972).

<i>Proponent</i>	The organization, company, or department planning to undertake a proposal (Tilleman, 2005).
<i>Public</i>	An inclusive term that consists of interested parties, the general public including any person in a potentially affected community, and organized community or other interest groups.
<i>Reasonably foreseeable future development</i>	Projects or activities that are currently under regulatory review or that will be submitted for regulatory review in the near future, as determined by the existence of a proposed project description, letter of intent, or any regulatory application filed with an authorizing agency (NIRB, 2007).
<i>Regional Study Area</i>	The area within which there is the potential for indirect or cumulative biophysical and socio-economic effects.
<i>Residual Impacts</i>	Those predicted adverse impacts that remain after mitigating measures have been applied (Tilleman, 2005).
<i>Scoping</i>	A process that pinpoints significant issues requiring study and analysis. This process aims to identify those components of the biophysical and/or socio-economic environment that may be impacted by the project and for which there is public concern (NIRB, 2008).
<i>Transboundary impacts</i>	Any impact, not exclusively of a global nature, within an area under the jurisdiction of a Party caused by a proposed activity, the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party (UN, 1991).
<i>Valued Ecosystem Components (VECs)</i>	Those aspects of the environment considered to be of vital importance to a particular region or community, including: <ul style="list-style-type: none"> a) resources that are either legally, politically, publicly, or professionally recognized as important, such as parks, land selections, and historical sites; b) resources that have ecological importance; and c) resources that have social importance (NIRB, 2007).
<i>Valued Socio-Economic Components (VSECs)</i>	Those aspects of the socio-economic environment considered to be of vital importance to a particular region or community, including components relating to the local economy, health, demographics, traditional way of life, cultural well-being, social life, archaeological resources, existing services and infrastructure, and community and local government organizations (NIRB, 2007).
<i>Well-being</i>	Specific indicators of well-being for a particular impact assessment must be identified by the potentially affected communities, in collaboration with the Regional Inuit Association. Factors to be assessed at the individual and community levels typically include, but are not necessarily limited to, the following: <ul style="list-style-type: none"> • Inuit Qaujimajatuqangit principles and values; • Cultural continuity and language; • Social, physical and mental health;

- Connection to the land (including Inuit food harvesting and Inuit food security/food sovereignty); and
- Access to training, education and employment opportunities.

INTRODUCTION

The Nunavut Impact Review Board (NIRB or Board) is the sole permanent body responsible for assessing the potential impacts of project proposals in the Nunavut Settlement Area and extending to the Outer Land Fast Ice Zone off the eastern coast of Baffin Island (together called the designated area²) prior to approval of required project authorizations. In accordance with Article 12 of the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada* (Nunavut Agreement) and Part 1 of the *Nunavut Planning and Project Assessment Act* (NuPPAA), the primary functions of the NIRB are: to protect the ecosystemic integrity of the Nunavut Settlement Area and to protect and promote the existing and future well-being of residents and communities of the Nunavut Settlement Area while also taking into account the well-being of residents of Canada outside the Nunavut Settlement Area.

Pursuant to Section 12.5.2 of the *Nunavut Agreement* and s. 101 of NuPPAA the NIRB must issue guidelines to the Proponent for preparation of an impact statement. Section 101. (6) of the NuPPAA requires proponents to submit an impact statement describing the proposed project and potential ecosystemic and socio-economic in accordance with NIRB guidelines. An Impact Statement (IS) is a tool used by the NIRB to evaluate the potential environmental and socio-economic impacts of a project proposal and to ensure the integrated planning of development proposals. Proponents must prepare a detailed document that:

1. Describes the project, including the need and purpose as well as components and alternatives;
2. Identifies, predicts, evaluates, and communicates information about the potential biophysical and ecological impacts;
3. Details the identification and development of mitigation measures, which are measures designed to control, reduce, or eliminate potentially adverse impacts of an activity or project and enhance positive impacts; and
4. Describes monitoring and reporting methods to verify the accuracy of impact predictions.

PART I – IS OVERVIEW

The IS Guidelines have been developed to assist the Proponent's development of an Impact Statement and to support a holistic impact assessment including both the negative and positive impacts to the biophysical, social and economic environment as well as to health and well-being of Nunavummiut. The NIRB relies on the Proponent's Impact Statement and information provided by Intervenor and the public to inform the NIRB's Report provided to the responsible Ministers when the Board's Review is completed. Therefore the Impact Statement must:

- Contain a full description of the proposed project and resulting potential biophysical and socio-economic impacts and the positive and negative consequences of these impacts;

² While the NuPPAA references the designated area, for ease of reference and translation purposes the NIRB generally refers to the NSA when referencing its jurisdiction.

- Be organized to ensure that a technical issue or topic is handled cohesively and that the interactions and relationships between valued components and the systems they are a part of, as well as potential impacts, are documented.
- Inuit Qaujimajatuqangit shared must inform all phases of the project and Impact Statement and final conclusions, including the design phase, operations, monitoring through to closure, as well as baseline development and impact analysis.
- List of key measures that the Proponent proposes to undertake to avoid and mitigate any adverse biophysical or socio-economic impacts of the proposed project and optimize positive impacts; and
- It is the Proponent's responsibility to provide sufficient data and analysis on potential changes to the biophysical and socio-economic environments resulting from the proposed project.

1.0 GUIDING PRINCIPLES

The NIRB views the environment holistically, comprised of individual interconnected parts that are only fully understood by considering those individual components as parts of a whole. For example, assessing potential impacts of project activities on valued components individually may not be considered significant, but when considered collectively and “particularly ... as interrelated parts of a system” they may be considered significant.³ The Board considers the environment to include biological, physical, human, health, and cultural components. Taking a holistic view of the components of the Earth, this includes the complex web of inter-relationships between the living and non-living components which sustain all life on earth, including the social, cultural, and health aspects of human group existence. Components of the Earth include:

- (a) land, water and air, including all layers of the atmosphere;
- (b) all living and non-living matter and living organisms, including plant, animal, and human life;
- (c) the social, economic and cultural conditions that influence the life of people or a community insofar as they are related to the matters described in (a) and (b);
- (d) the interacting natural systems that include components referred to in (a), (b) and (c).

All parts of a project review (planning, scoping and guidelines development, impact assessment, assessment, decision-making, and monitoring and follow-up) should be informed by the following guiding principles, which are elaborated on below: Inuit Qaujimajatuqangit, public engagement, precautionary principle, and sustainable development.

³ Ehrlich, A. (2021). Collective Impacts: Using Systems Thinking in Project-level Assessment. *Impact Assessment and Project Appraisal*. 1-17.

1.1 Inuit Qaujimajatuqangit

The Board is committed to the application of Inuit Qaujimajatuqangit throughout the Board's Proceedings. The Board has adopted the following description of Inuit Qaujimajatuqangit : “what Inuit have always known to be true” (see Karetak, J., Tester, F., & Tagalik, S. (Eds.). (2017). *Inuit Qaujimajatuqangit: What Inuit Have Always Known To Be True*). Further, the Board notes that Inuit Qaujimajatuqangit is not a static concept and there are several central notions fundamental to the understanding of Inuit Qaujimajatuqangit. For example, key aspects of Inuit Qaujimajatuqangit as explained by R. Paton on behalf of the Qikiqtani Inuit Association, were cited with approval in the NIRB's *Reconsideration Report and Recommendations for Baffinland's Phase 2 Development Proposal*, Baffinland Iron Mines Corporation Project Certificate No. 005, NIRB File No. 08MN053, May 13, 2022, at p. 35, footnote 35:

Inuit Qaujimajatuqangit contains Inuit oral history, what has been passed down verbally over centuries of Inuit Knowledge. Inuit Qaujimajatuqangit encompasses both the past and the present. It cannot be separated from within Inuit society. It is part of our Inuit identity. Inuit Qaujimajatuqangit is Inuit knowledge that is both living and adapting and very much part of our present day and present-day life. It is how Inuit live and see the world. It is distinct and specific to the Arctic environment. It cannot be duplicated anywhere else, nor can it be interpreted or represented by non-Inuit without consent from those Inuit to whom that knowledge is gained. Inuit Qaujimajatuqangit is verified by Inuit for Inuit.

The Board also considers knowledge provided by various knowledge-holders and Indigenous groups asserting s. 35 rights in the Nunavut Settlement Area. This information is described as:

- **Indigenous Knowledge** is the accumulated body of knowledge, observations, and understandings about the environment and the relationship of living beings with one another and with the environment, that is rooted in the way of life of Indigenous peoples.
- **Community Knowledge** reflects the wisdom and experience of community members, including observations and understandings about the environment and how knowledge is generated, stored, applied, and shared with others.

The Proponent must specify in its Impact Statement how Inuit Qaujimajatuqangit, Indigenous Knowledge and Community Knowledge was shared, evaluated, and considered in the conclusions presented in the Impact Statement. The NIRB appreciates that the availability of such information may be subject to obligations of confidentiality or other ethical obligations and expects the Proponent to take reasonable measures to access the knowledge and verify interpretation of this knowledge in the development of the Impact Statement. See [Section 1.2](#) and [10.0](#) of this document as well as the NIRB's available technical guides for additional support for the collection, interpretation, and use of Inuit Qaujimajatuqangit, Indigenous Knowledge and Community Knowledge.

1.2 Public Engagement

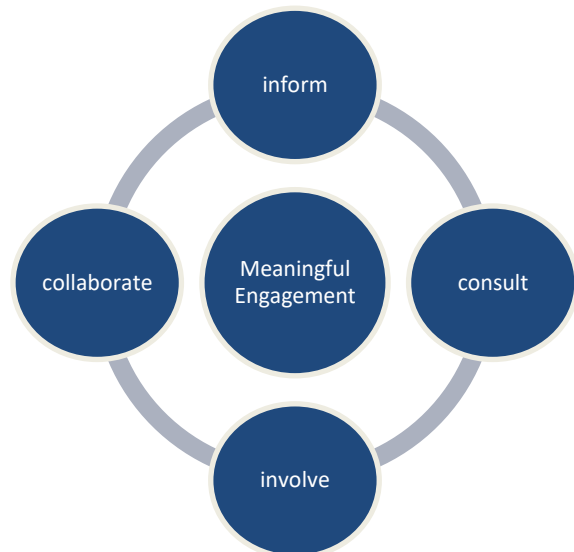
The NIRB uses the term ‘public engagement’ as an encompassing term that describes varying levels of information exchange and involvement between the public, the Proponent, other participants, and the NIRB during the NIRB’s impact assessment processes and proceedings. This includes processes for interpreting and using Inuit Qaujimajatuqangit, Indigenous Knowledge, and Community Knowledge shared by knowledge holders.

The NIRB requires Proponents to plan for and provide meaningful public engagement opportunities throughout all stages of a project as well as throughout the NIRB’s assessment of a proposed project.

The NIRB views public communication and public consultation as the two primary mechanisms of public engagement. These differ according to the direction and flow of information and extent of the public’s influence into a process or proceeding. The focus of public engagement is to create opportunities to exchange and clarify information, gather input, and promote collaboration and understanding amongst the public to inform the projects design, as well as the NIRB’s impact assessment processes, proceedings, and decision-making. Proponent’s plans for public engagement will vary depending on the stage of the impact assessment process, NIRB procedures, and specific guidance issued by the Board on a project-by-project case and the overall objectives of the public engagement (outlined below). Plans used for the life of the mine, including monitoring and management plans, should be developed or developed as far as possible at the earliest stages of the assessment and be updated and modified throughout the impact assessment process. To the extent possible, these plans should also address measures the Proponent plans to take to build capacity and relationships with interested communities, individuals, and local organizations over the course of the impact assessment and throughout the Project lifecycle.

Meaningful public engagement should aim to **inform, consult, involve, and collaborate**, with the objective of:

- **informing** the public, which involves providing balanced, objective, and understandable information that facilitates an understanding of the Project and the Proponent’s impact assessment analysis and conclusions. This should address how public input is to be considered and incorporated into all stages of project development and the impact assessment.
- **consulting** the public and providing opportunities to receive feedback on the Project design and assessment, including scope of the assessment, alternatives, issues of concern, and potential mitigation measures. This includes reporting back to the public on issues brought up in previous



meetings and how they were addressed or not addressed. This allows the public to understand how their feedback is being used and/or provide clarity regarding any issues that were discussed.

- **involving** the public, including activities that allow for public input to be included and reflected in all stages of project development and impact assessment. This includes identifying issues of public concern, responses to information provided, and addresses how public input provided and knowledge shared will be recorded and communicated back to the public.
- **collaborating** with the public at all stages of project development and impact assessment should be interactive and allow for active participation of the public through many platforms, including in-person, virtual, and written.

In reviewing public engagement activities undertaken by a Proponent, the NIRB considers, at a minimum, whether the following elements of meaningful public engagement have been incorporated into the Proponent's public engagement plans and activities:

- Providing early notification to the public engagement of opportunities throughout the project design and impact assessment.
- Getting feedback from communities on how they want to be engaged.
- Ensuring transparency during public engagement.
- Clearly communicating the process and objectives of public engagement and how public feedback, including how Inuit Qaujimajatuqangit was collected, interpreted, used, and informed the project, impact assessment, and/or mitigation and management plans.
- Ensuring appropriate, relevant, and accessible information (including translations and interpretation into the preferred language) are provided in a timely manner that ensures the public has sufficient opportunity and time to assess the information.
- Demonstrating respect and an understanding of the context associated with the knowledge shared by the community and discussing with communities to ensure it is captured correctly.
- Providing reasonable timelines that recognize seasonal or other constraints on the availability of the public.
- Designing plans and activities that allow for levels of public engagement appropriate to the circumstances.
- Demonstrating the willingness and flexibility required to adapt public engagement plans and processes as may be necessary to ensure the public engagement objectives are achieved.

Public engagement is required, at a minimum, to:

- Contribute to the development of the scope, design, alternatives, and plans for site preparation/pre-construction, construction, operation (including reduced operation), maintenance, any potential modifications, temporary closure (care and maintenance), final closure (decommission and reclamation) and post-closure of the proposed project.

- Identify current and historical patterns of land, marine, and resource use.
- Gather and determine how to use shared Inuit Qaujimajatuqangit.
- Establish biophysical, socio-economic, wellness and health baseline conditions including trends and socio-ecological systems (and how they are interrelated) over time for a set of conditions.
- Identify valued biophysical and socio-economic components (collectively referred to as valued components) and related indicators for the project impact assessment, cumulative impact assessment, and transboundary impact assessment.
- Inform and evaluate the impacts assessment (i.e., significance of potential impacts).
- Identify potential cumulative impacts (including significance of potential cumulative impacts).
- Inform and develop monitoring and mitigating measures including thresholds.

The Proponent should refer to the NIRB’s available guidance documents for additional direction and requirements regarding public consultation and to assist in developing an engagement strategy.

1.3 Precautionary Principle

The NIRB’s Review process is designed to assess proposed projects in a careful and precautionary manner and to ensure that where there is a potential for harm to humans or the bio-physical environment, actions will be taken to prevent or reduce the negative impacts, even if there is a lack of information and certainty about the cause and extent of the impact itself.

When conducting a project-specific impact assessment/Review, the Board has adopted the description of the precautionary principle as found in Principle 15 of the Rio Declaration on Environment and Development (1992): “Where there are threats of serious or irreversible damage, lack of full scientific certainty *shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation*”⁴. The Board has relied on this notion of the precautionary principle to engage in environmental decision-making that reflects the potential for adverse environmental impacts, even when the risk of such impacts cannot be definitively proven.

The reliance on the precautionary principle and associated adaptive management to address uncertainty with respect to the potential for environmental harm is becoming well-accepted practice within Canada and has been characterized as an emerging international norm in impact assessment and environmental regulatory decision-making.⁵ The Board not only employs the precautionary principle, or the ‘erring on the side of caution’ to address uncertainty, but also expects the Proponent to use adaptive management to integrate effects predictions with monitoring, mitigation, and management functions. Under this adaptive management approach,

⁴ UN (United Nations). 1972. *Rio declaration on environment and development*. In: Report of the United Nations Conference on the Human Environment, Stockholm, pp. 5-16.

⁵ *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*, [2001] 2 SCR 241, 2001 SCC 40 (CanLII), <http://canlii.ca/t/51zx> at para. 31; and *Morton v. Canada (Fisheries and Oceans)*, 2015 FC 575 (CanLII), <http://canlii.ca/t/ghjq> at paras 41-43.

the Board expects the Proponent to use monitoring data to evaluate, on an ongoing basis, the predicted effects and the efficacy of mitigation and management developed and implemented to address all effects.

The Proponent bears the burden of proof to show that despite uncertainty, the potential for adverse impacts can be mitigated or reversed.

To demonstrate the application of the precautionary principle, the Proponent must include information to:

- demonstrate that the proposed project is examined consistent with the precautionary principle to ensure that it does not cause serious or irreversible damage to humans or the environment;
- outline the assumptions about the effects of the proposed project and the approaches to minimize these effects, including assumptions that are developed where uncertainty exists;
- identify any information or technical gaps and plans to understand and/or mitigate these gaps based on the current state of technical knowledge and Inuit Qaujimajatuqangit for the Project area;
- identify any follow-up and monitoring activities planned, particularly in areas where uncertainty exists in the prediction of effects;
- present public views on the acceptability of these impacts; and
- demonstrate that Inuit Qaujimajatuqangit and Community Knowledge is considered in a fulsome way that is consistent with the precautionary principle of not requiring “certainty” to establish the potential for harm to ecosystemic components such as the:
 - marine environment,
 - socio-economic components such as culture, food security, land use,
 - Inuit rights such as harvesting and self-determination,
 - inter-related socio-ecological systems.

The International Union for Conservation of Nature’s ([IUCN, 2007](#)) sets out guidelines in the application of the precautionary principle to the conservation of biodiversity and natural resource management that should be considered by the Proponent in the development of the Impact Statement and the proposed project.

1.4 Sustainability or Sustainable Development

Sustainable development is defined as development that “*meets the needs of the present without compromising the ability of future generations to meet their own needs*” ([UN, 1987](#)). It is about balancing economic, biophysical, social, cultural, and health needs and well-being, while allowing for the protection of the environment and availability of benefits for present and future generations. This means that the impacts of decisions made today on future generations must be considered. Sustainability is fundamental to the NIRB’s primary objectives laid out in Section 12.2.5 of the *Nunavut Agreement* and s. 23 of the *NuPPAA*.

The Board must consider whether, and to what extent, the project would **protect and enhance** the existing and future well-being of the residents and communities of the Nunavut Settlement Area, taking into account the interests of other Canadians.

The Board must further taking into account whether the project reflects the priorities and values of the residents of the designated area.

NuPPAA ss. 103(b)(c)

The Impact Statement Guidelines are based upon the following factors that the NIRB considers directly associated with sustainability by considering biophysical, economic, social, cultural, and health and well-being aspects:

- 1) The environment is comprised of interconnected and interdependent biophysical, socio-economic, cultural, health, and well-being components and systems;
- 2) The extent to which the physical environment, biological and ecological diversity, health, social, economic, and cultural well-being would be impacted by the proposed project;
- 3) Measures taken to enhance overall positive impacts and reduce adverse impacts;
- 4) The extent the proposed project would protect and enhance the existing and future well-being of present and future generations of Nunavummiut, taking into account the interest and well-being of other Canadians;
- 5) The capacity of renewable and non-renewable resources that are likely to be significantly affected by the proposed project;
- 6) The extent the proposed project reflects the priorities and values of the residents of the designated area; and
- 7) The application of the precautionary principle (as outlined above) and consideration of uncertainty and risk for irreversible harm.

NIRB interprets progress towards sustainability as meeting the following goals where possible:

- 1) Preservation of ecosystem integrity, including the capability of natural systems (local and regional) to maintain their structure and functions and to support biological and ecological diversity;
- 2) Recognition and preservation for local hunting, harvesting, gathering, occupancy and other land and aquatic uses, such as for cultural practices, travel and camps, and cultural connection (past, present, and future);
- 3) Recognition and respect for intergenerational equity; that is, the right of future generations to economic development, health, and well-being as well as use and access of the environment and resources; and
- 4) The attainment of durable social and economic benefits, particularly in Nunavut.

The Proponent's Impact Statement shall clearly demonstrate how the proposed project meets these goals. The Impact Statement must characterize the proposed project's contribution to sustainability including that as defined by potentially affected members of the public and knowledge holders, local organizations, designated Inuit organizations, Indigenous groups, other governments or organizations, and interested individuals and must describe how sustainability principles have been applied to the potential impacts of the proposed project.

2.0 PREPARATION AND REVIEW OF THE IMPACT STATEMENT

In preparing the Impact Statement, Proponents must follow the Impact Statement Guidelines, especially paying attention to the requirements of the *Nunavut Agreement* and the *NuPPAA*. During the planning and development of the impact statement and supporting documents, the Proponent is required to consult with the NIRB, potentially affected members of the public and governments and organizations. The Proponent is encouraged to engage with the applicable Regional Inuit Association as well as local organizations and individuals in the potentially affected communities regarding the identification, collection, validation, and ~~use of~~ **incorporation of** Inuit Qaujimajatuqangit. Further, depending on the nature and location of the proposed project, the Proponent is reminded to also engage with transboundary government departments and agencies as well as local government and regional Indigenous organizations in areas whose members may be impacted or have interest in the Project.

The Proponent should refer to the NIRB's ~~available~~ guidance documents for additional direction and requirements regarding public consultation and to assist in developing an engagement strategy at www.nirb.ca.

2.1 The Study Strategy and Methodology

It is the sole responsibility of the Proponent to prepare an Impact Statement that includes sufficient information, ~~and~~ analysis ~~and/or~~ **incorporation of all collected knowledge** (scientific information, consideration of engineering information, Inuit Qaujimajatuqangit, Indigenous Knowledge, and Community Knowledge) for a complete assessment of the anticipated impacts of the proposed project and contribution to sustainability.

The Impact Statement shall be concise and focus on the assessment of potential impacts to biophysical and socio-economic components individually as well as collectively as interacting parts of the greater systems identified for the Project. The Impact Statement shall contain the information as outlined in Article 12, Section 12.5.2 of the *Nunavut Agreement* and s. 101(3) of the *NuPPAA* and must clearly present the information requested in that section in a clear and easy to follow format and presented for all audiences expected to read the materials. At a minimum, the Impact Statement shall provide:

- (a) a description of the project, the purpose of, and need for, the project;
- (b) the anticipated effects of the environment on the project, including effects associated with natural phenomena, such as meteorological and seismological activity, and climate change;
- (c) the anticipated ecosystemic and socio-economic impacts of the project, including those arising from the effects referred to in paragraph (b);

- (d) the measures proposed by the Proponent to
- i) avoid and mitigate adverse ecosystemic and socio-economic impacts, including contingency plans,
 - ii) optimize the benefits of the project, with specific consideration given to expressed community and regional preferences in regard to benefits,
 - iii) compensate persons whose interests are adversely affected by the project, and
 - iv) restore ecosystemic integrity after the permanent closure of the project;
- (e) any monitoring program of the project's ecosystemic and socio-economic impacts that the Proponent proposes to establish;
- (f) the interests in land and waters that the Proponent has acquired or seeks to acquire;
- (g) options for carrying out the project that are technically and economically feasible and the anticipated ecosystemic and socio-economic impacts of those options; and
- (h) any other type of information relating to a matter within the Board's jurisdiction that the Board considers relevant in the circumstances.

The Proponent shall engage potentially affected members of the public, governments, or organizations, and interested individuals in the development of the Impact Statement, including but not limited to:

- the identification of Valued Components,
- baseline information,
- effects assessment (including significance determination),
- mitigation and monitoring, and
- development of plans.

The information presented must be substantiated; in particular, the Proponent must describe:

- how the valued components and greater systems they are a part of were identified;
- what methods were used for assessment;
- the project's predicted potential impacts on these valued components and systems (both individually and collectively);
- significance of these impacts, and
- how scientific, engineering, Inuit Qaujimajatuqangit, Indigenous, community, and any other knowledge was used in method design and conclusions reached.

The Impact Statement shall include a description of the historical background⁶ and current baseline data⁷ and how the existing ecosystemic and socio-economic environments are expected to change over the life of the proposed project [site preparation/pre-construction, construction, operation (including reduced operation), maintenance, any potential modifications, temporary closure (care and maintenance), final closure (decommission and reclamation), and post-closure] in response to

⁶ Historical background conditions are those conditions that existing prior to any industrial development.

⁷ Baseline conditions are those conditions considered to be the pre-project environment, which is inclusive of the cumulative effects of previous activities and the future environment in the absence of the proposed project.

environmental changes (e.g., climate change, glacial rebound, etc.) so that all effect analyses can be undertaken and mitigation can be proposed in respect to this changing baseline.

The Proponent shall identify all significant gaps in knowledge (including Inuit Qaujimajatuqangit) and understanding related to key conclusions, and the steps to be taken to address these gaps. The Impact Statement shall identify any valued components requested by parties that the Proponent chooses not to adopt and provide a supporting rationale for not including said valued components and/or interrelated parts of a system as well as any differences in conclusions of potential impacts (including significance determination). Where the conclusions drawn from scientific, engineering, and technical knowledge are inconsistent with the conclusions drawn from Inuit Qaujimajatuqangit, the Impact Statement shall contain a balanced presentation of the issues and a statement of the Proponent's conclusions and rationale as well as plans to address the differences or concerns identified.

2.1.1 Acquisition Methodology and Data Analysis

Except where specified by the NIRB, the Proponent has the discretion to select the most appropriate methods to collect, compile, and present data, information, and analysis in the Impact Statement. The Proponent shall identify and document how it used scientific information, engineering information, and Inuit Qaujimajatuqangit. The Proponent shall clarify any uncertainties in methods and conclusions, such as relates to baseline, impact assessment, mitigation, etc.

Scientific and Engineering Information

Data collection, sampling process, and data analysis methods as well as use of experimental and analytical controls must be clearly identified and justified. The scope and reliability of the results, reproducibility of the study design, quality control of laboratory analyses and statistical analysis shall be analyzed and clearly detailed. All data that is based on sampling of valued components involves some variability, which must be determined to assess the probability of conclusions made based on analysis. The Proponent shall provide, for all data obtained from valued components sampling:

- dispersion or variability coefficient (variance, standard deviation, confidence interval, etc.)
- justification for sample size
- sensitivity and assumptions of experimental design and statistical methods and models used that affect conclusions

Inuit Qaujimajatuqangit, Indigenous Knowledge, and Community Knowledge

The Proponent is advised to engage with potentially affected communities, including knowledge holders, local organizations; designated Inuit organizations; Indigenous groups; governments or organizations; and interested individuals when developing acceptable methods of analyzing and presenting shared information. The Proponent shall show evidence that:

- appropriate protocols ~~have been~~ were followed for collection, protection and use of Inuit Qaujimajatuqangit, Indigenous Knowledge, and Community Knowledge;
- Knowledge holders ~~have been~~ were involved in both the collection and interpretation of Inuit Qaujimajatuqangit and other knowledge shared;
- Knowledge holders have verified ~~the way in which this~~ how the knowledge is presented and ~~has been applied~~ actively incorporated into the impact assessment; and
- the permission of the knowledge holders to use this knowledge as presented in the Impact Statement.

When designing data collection, it is recommended that the Proponent coordinate with ongoing programs with relevant developments, government organizations, regional authorities, designated Inuit organizations, Indigenous groups, and organizations (e.g., local Hunters and Trappers Organizations), and researchers. This recommendation applies to data collected for the Nunavut General Monitoring Program (NGMP), as per Article 12 of the *Nunavut Agreement*, the Proponent's project-specific monitoring programs, as well as any regional monitoring initiatives in which the Proponent currently participates or plans to participate.

2.1.2 Documentation

It is the NIRB's expectation that the Proponent ~~will focus~~ focuses its discussions on key components, ~~and~~ issues, ~~or interrelated parts of a system~~ and ~~will~~ provides a level of detail appropriately weighted to the importance of the issues being analyzed. While key components and issues will predominantly be identified during the scoping phase of the Impact Statement, the NIRB notes that key issues may arise throughout the assessment and expects the Proponent to ~~actively~~ respond. The Proponent shall indicate how it has used public feedback in weighting the importance of these issues and provide a rationale for conclusions it chooses not to adopt.

All data, models, and studies must be documented and discussed so that the analyses are transparent and justifiable. The IS shall ~~also~~ explain ~~how the Proponent incorporated Inuit observations which are often qualitative and culturally-defined through the lens of Inuit Qaujimajatuqangit into all phases of project development. The information provided shall discuss how work with Inuit parties defined appropriate Inuit criteria to include in the Impact Statement and overall assessment process.~~ Information shall also justify methods used to identify mitigation measures, adaptive management strategies and follow-up program elements. ~~including~~

Both quantitative and qualitative criteria should be used to describe the biophysical or socio-economic environments ~~and interconnections~~, compare various design and development options, assess impacts, and develop mitigation and monitoring thresholds and/or requirements. Criteria must be defined, their relative importance stated, and the differences between the categories (e.g., desirable, acceptable, unacceptable) indicated and justified. The Proponent shall corroborate all analyses, interpretations of results, and conclusions with a review of relevant literature or knowledge. References must be provided as appropriate, and the Proponent must indicate the public availability of sources and shall identify or reference sources appropriately in cases where ownership or confidentiality concerns exist.

2.1.3 Use of Existing Information

In preparing the Impact Statement, the NIRB expects the Proponent will utilize available and pertinent results of surveys and studies completed in the proposed project region by other developers, government agencies, organizations, institutions, regional authorities, and individual researchers. For example, the Proponent should incorporate lessons learned from previous and/or currently active projects in similar environments. When using existing information to meet the requirements of various sections of the Impact Statement Guidelines, the Proponent should include the information directly in the Impact Statement with clear reference indicating the source of information (i.e., document, section, and page numbers). Further, the Proponent shall ensure that Inuit Qaujimajatuqangit, Indigenous Knowledge and Community Knowledge used from databases receives input from the applicable regional Inuit associations and/or knowledge holders on applicability.

PART II – THE IMPACT STATEMENT

Part II of this document provides specific instructions for the content expected in each section in the Impact Statement while also reflecting the guiding principles in Part I of this document.

3.0 PRESENTATION OF THE IMPACT STATEMENT

3.1 Content

As discussed in [section 2.1](#), at a minimum the Impact Statement shall contain the information as outlined in Article 12, Section 12.5.2 of the *Nunavut Agreement* and s. 101(3) of the *NuPPAA*.

3.2 Concordance Table

The Proponent is required to provide a table of concordance as part of the Impact Statement that references where the information is presented in the main document, various supporting documents and volumes (i.e., document, section, and page number) cross-referenced with the information requirements identified in these Impact Statement Guidelines. The Proponent shall ensure that the concordance table is easy to follow and allows navigation directly to the required information; [Appendix A](#) provides an example of a table of concordance which must be provided by the Proponent.

3.3 Presentation

The Impact Statement shall be written clearly and in plain and accessible language as much as possible, and include the following:

- The IS main document should be a stand-alone document;
- Separate appendices/volumes that provide detailed studies including (including all relevant and supporting data and methodologies) should be cross-referenced to the main document;
- An index to the Impact Statement that references locations in the text by volume, section, sub-section and page of all key subjects;
- As appropriate, charts, diagrams, tables, maps, and photographs to clarify and/or support the text;
- Drawings that clearly describe and/or demonstrate the various components of the proposed project (including photographic backgrounds where possible);
- Maps presented in a consistent and clearly identified datum and with clearly identified scales to allow for comparison and overlay of mapped features;
- A glossary of technical words, acronyms, and abbreviations in plain language;
- A list of all tables, figures, and photographs; and
- A complete list of supporting literature and references.

Balanced cross-referencing of information within each section or volume of the Impact Statement document is preferred to avoid repetition. The main priority in organizing the Impact Statement, volumes and chapters, should be to provide multiple audiences the ability to understand the proposed project and assessed impacts and benefits. Mitigation and management plans should be developed as stand-alone documents.

The Proponent shall provide copies of the Impact Statement and its summaries in an accessible format that respects the limited broadband in the north as the Impact Statement will be accessed through the NIRB's Public Registry.⁸ Documents must be in PDF format without password restrictions, the text should be searchable and key text, images, document information able to be copied so parties can reference materials in IRs and Technical Comments. The NIRB will require an electronic copy of the IS document and all appendices and may also require multiple hard copies of the Impact Statement. Prior to making the submission to the NIRB, Proponents shall contact the NIRB to determine the number of print and electronic copies required. The Proponent is encouraged to use various methods of representing the materials in addition to text descriptions (e.g., tables, figures, pictures, three-dimensional modeling, videos, etc.) to facilitate awareness of topics being discussed in the Impact Statement. Refer to the NIRB's *Technical Guide Series: Proponent's Guide* ([NIRB, n.d.](#))⁹ for further information on the submission requirements of the IS document.

3.4 Main Document of the Impact Statement

The Proponent shall prepare the main document to have sufficient details for the reader to learn and understand the proposed project, potential impacts, mitigation measures, residual effects, and the significance of those effects. The main document shall also include key maps illustrating the proposed project location and key project components. Detailed studies (including all relevant and supporting data and methodologies) shall be provided in separate appendices and will be referenced by appendix, section, and page in the text of the main document. An Executive Summary and Popular Summary (see [Section 4.0](#)) of the Impact Statement in all languages as described in [Section 3.5](#) shall also be provided to the NIRB at the same time as the Impact Statement. The main document shall be structured as follows:

1. Executive and Popular Summaries (see [Section 4.0](#)) and a 1-page fact sheet of the Proposal
2. Project Overview: Introduction and impact assessment context (see [Section 5.0](#))
3. Project Description: Project components and activities including the scope of project and assessment (see [Section 6.0](#))
4. Project Purpose, Need and Alternatives (see [Section 6.0](#))
5. Summary of impact assessment for each valued component (valued components; see [Section 7.0](#) and [Section 8.0](#)), including:

⁸ As broadband capabilities are constantly changing, proponents should clarify with the NIRB the maximum size for each document prior to uploading.

⁹ Guidance documents may be periodically updated, and it is the Proponents responsibility to ensure it has access to the most up to date guidance materials.

- description of the historical background¹⁰ and current baseline conditions;
 - predicted changes to the biophysical and socio-economic environments;
 - predicted impacts to the valued components;
 - mitigation and enhancement measures;
 - residual effects and the significance of those effects;
 - cumulative effects;
 - other effects including:
 - accidents and malfunctions
 - effects of the environment on the proposed project (e.g., climate change, meteorological, seismological)
6. Public engagement (see [Section 9.0](#))
 7. Project contribution to sustainability (see [Section 1.4](#))
 8. Follow-up and monitoring programs proposed (see [Section 11.0](#))
 9. Appendices

3.5 Translation

The Proponent must prepare the main document, the summary of each thematic volume of the IS and the summaries as described in [Section 4.0](#) in both of Canada's official languages (French and English) and in Inuktitut. Maps shall indicate common and accepted placenames usually referred to by the local communities in the study area in their own language, in addition to their official toponyms, especially where traditional Inuit place-names have been made official through the process outlined in Section 33.9 of the *Nunavut Agreement*.

4.0 SUMMARIES

The IS shall include both an Executive Summary and Popular Summary as described below.

4.1 Executive Summary

The Executive Summary shall include the following:

- Summary of all key components of the proposed project and related activities;
- An overview of expected changes to the biophysical and socio-economic environments and well-being;
- Summary of the key impacts of the proposed project and proposed mitigation measures with particular reference to the overall conclusions of the assessment, and a clear rationale relating those conclusions to the predicted impacts and the measures proposed to address

¹⁰ Historical background conditions are those that existing prior to any industrial development.

them. This shall include potential impacts of most concern by potentially impacted communities;

- Summary of the engagement conducted with members of the public governments or organizations, and interested individuals, including where relevant, adjacent jurisdictions outside of the designated area;
- Summary of key issues, including those raised by members of the public and the strategies proposed to address them and the extent to which information from consultation activities ~~informed~~ was incorporated into the design of the proposed project; and
- The Proponent's conclusions on the residual effects of the proposed project after taking mitigation measures into account and the significance of those impacts.

The summary shall form part of the Impact Statement and be made available as a separate document. The summary shall have sufficient details for the reader to learn and understand the proposed project, potential impacts, mitigation measures, the residual impacts identified through cumulative effects assessment and significance of those impacts, follow-up programs, and remediation. Maps indicating major project components including marine, air and ground transportation routes, potentially affected communities and key landmarks shall be included and presented in all languages as described in [Section 3.5](#).

The Proponent is encouraged to include cross sections and aerial plans for key project components to support the reader's understanding of the proposed project. Other media sources such as video, digital three-dimensional modeling, infographics, etc. shall also be used to further supplement the Executive Summary and improve awareness of the proposed project.

4.2 Popular Summary/Non-Technical Summary

While the Popular Summary shall have the same general structure and objectives as the Executive Summary, it shall be written in non-technical, accessible, and plain language to ensure the public is able to review the proposed project. The Popular Summary shall include a glossary and additional explanatory text to assist non-specialists in understanding the content of the Impact Statement as a whole and shall be presented in all languages as described in [Section 3.5](#).

The Proponent is encouraged to use plain language editors to develop the Popular Summary. The summary shall provide an effective snapshot of the proposed project and highlight the predicted impacts, the mitigation measures, and follow-up programs to ensure the reader is able to learn and understand the proposed project. While the Popular Summary shall form part of the IS, it shall also be made available as a separate document.

As with the Executive Summary, the Popular Summary shall include maps and/or figures that effectively illustrate all activities and associated components that are included in the proposed project, as well as the local and regional context of the proposed project. These maps should be at appropriate scales to illustrate project features including recognizable objects and landmarks in relation to the proposed project area. The Proponent is also encouraged to include other media sources (e.g., pictures, three-dimensional modeling, videos, etc.) to improve public awareness of the proposed project.

5.0 INTRODUCTORY SECTIONS OF THE IMPACT STATEMENT

5.1 Proponent Information

The Proponent shall identify itself and explain current and proposed ownership of rights and interests in the proposed project, as well as operational arrangements and corporate and management structures. It shall specify the Proponent's policies related to the bio-physical and socio-economic environments, as well as health. The Impact Statement shall further specify whether and how these policies apply to all businesses for which the Proponent has an operating responsibility, including to employees, contractors, subcontractors, and suppliers. These policies shall also describe the Proponent's reporting systems in place to ensure that lessons learned are incorporated into the business plan and operations on a regular basis. Furthermore, the Proponent shall provide complete contact information such as telephone and fax numbers, postal and email addresses, and where necessary, separate addresses for corporate and operations offices.

The Proponent shall describe its past and present operational experience in the activities being proposed for the Project, and with transportation networks involving air, marine, or ground transportation (winter and all-weather road components). The Proponent shall reference:

- Its record of compliance with governmental policies and regulations pertaining to biophysical and socio-economic issues in past operations;
- Its record of safety, major accidents, spills and emergencies, and corresponding responses;
- Its record of any corporate policies, codes of practice, programs, or plans concerning the Proponent's environment and sustainability. Information shall also be provided on how its plans, policies, and programs align with and recognize the importance of Inuit laws, norms, and societal values;
- Its record in honouring commitments on biophysical and socio-economic matters in the event of planned or premature project closure, whether temporary or permanent, or due to change of ownership;
- Its record of undertaking adaptive management;
- Its relations with Indigenous peoples, including prior experience with any Impact and Benefits Agreements if appropriate;
- Its record of any training and/or support provided to Indigenous peoples to advance within the company;
- Its history of operational experiences in Arctic and Sub-arctic regions;
- Its record in incorporating biophysical, socio-economic, health, and cultural considerations into site preparation/pre-construction, construction, operations (including reduced operation), maintenance, any potential modifications, temporary closure (care and maintenance), final closure (decommission and reclamation), and post-closure; and
- Corrective actions it has undertaken in the past, distinguishing between those taken voluntarily and those taken at the insistence of a third party.

The Proponent shall identify and describe any obligations or requirements that it must meet to post a bond or other forms of financial security to ensure payment of compensation in the event of accidents that directly or indirectly result in major damage by the proposed project to either the biophysical or socio-economic environments. This must include considerations for the cost of planned or premature closure, whether temporary, reduced, or permanent. The Proponent shall provide information on the current status of project financing and financial preparedness to meet the requirements for reclamation and security, should the proposed project proceed.

If the Proponent does not have prior operational experience in Nunavut or Northern Canada, it shall discuss experience obtained in developing projects in similar environments to Nunavut or Northern Canada as well as the safeguards that it intends to put in place to compensate for the lack of prior experience.

5.2 Project Overview

The IS shall include an overview that provides general project information to ensure the NIRB and all parties involved have a clear understanding of the proposed project and its potential effect. The overview is to describe key project components and associated activities, scheduling details, the timing of each phase of the proposed project and other key features. This information shall be expanded upon in the section of the Detailed Project Description, Alternatives and Plans which is discussed in [Section 6.0](#) of this document.

5.3 Project Location

The IS shall contain a concise description of the geographical setting and the socio-ecological context in which the proposed project would take place. This description shall focus on those aspects of the proposed project and its setting that are important to understand the potential biophysical and socio-economic impacts of the proposed project as well as effects of the biophysical environment on the project. The description shall address the natural and human elements of the environment as well as explain the interrelationships between the biophysical environment and residents of the designated area, and particularly the most potentially impacted communities. The following information shall be included:

- The Geographic coordinates (longitude/latitude (degrees, minutes, seconds) and the Universal Transverse Mercator (UTM) coordinates of the main project site;
- Current land and/or aquatic uses (refers to both freshwater and marine water uses) in the area and the relationship of the proposed project facilities and components with any Crown land, Inuit Owned Land, and Commissioner's land;
- All waterbodies and navigable waterways;
- The biophysical, socio-economic, cultural significance and value of the historical and archaeological sites, and/or culturally significant areas, in the local and regional study areas identified by potentially impacted communities, residents of the designated area, Inuit knowledge holders and/or Indigenous groups;

- Environmentally sensitive areas, such as national and territorial parks, ecological reserves, marine protected areas, UNESCO World Heritage Sites, ecologically and biologically sensitive areas, wetlands, estuaries, and habitats of federally listed species at risk (Schedule 1 of *Species at Risk Act*) and other sensitive areas;
- Culturally important features on the landscape, **culturally significant areas**, and traditional harvesting regions;
- Local communities; and,
- Land Tenure (see [Section 5.3.1](#)).

The Impact Statement shall also provide maps of the proposed project location. The location map shall include the boundaries of the proposed site with geographic coordinates, the key project components, the major infrastructure, adjacent properties or leased lands, adjacent land and/or aquatic uses, and any important environmental features listed above. In addition, site plans/sketches and photographs showing project location, site features, and the intended location of project components shall be included. Location maps shall be labelled with common and accepted place-names usually referred to by the local communities in their own language/dialects, in addition to their official toponyms (see [Section 3.5](#)), especially where traditional Inuit place-names have been made official through the process outlined in Section 33.9 of the *Nunavut Agreement*. The Proponent is encouraged to identify dialectal differences among potentially impacted communities, as necessary.

Maps of the proposed project's location shall be provided as an electronic geospatial data file at a common scale and datum to accompany the text to allow for comparison and overlay with other maps. The Proponent should include a common reference point for potentially impacted communities to identify the scale of proposed works.

5.3.1 Land Tenure

The Proponent shall delineate on a map of suitable scale the legal boundaries of any areas to which it will acquire rights through lease or other tenure arrangements, including Crown land, Inuit Owned Land, and Commissioner's land. It shall further describe those areas by providing such information as, but not limited to site coordinates, land size, file numbers, start and end dates, fees, name of right holder, and any post-authorization amendments and/or renewals.

The Proponent shall also provide information on existing tenures, licences, permits, or other authorizations that would be potentially impacted by the proposed project and provide a record on consultations with holders of such tenures, permits, or authorizations.

5.4 Regulatory Regime

The Proponent shall present its understanding of the regulatory regime in which it would be operating by identifying the legislation and other regulatory approvals applicable to the proposed project as required by all relevant federal, territorial, regional and/or municipal owned lands. This would include laws, standards, Inuit societal laws, regulations, policies, guidelines resource management plans, land use plans, any relevant regional studies or strategic assessments relating

to project approval, site preparation/pre-construction, construction, operations (including reduced operation), maintenance, any potential modifications, temporary closure (care and maintenance), final closure (decommission and reclamation), and post-closure activities. This section shall explain how the requirements would be met, including identifying potential future changes, and what specific governmental permits and approvals would be required. A list of currently held and required permits and licences, including dates of issue and expiry (as applicable) shall be appended. Requirements imposed by Article 12 of the *Nunavut Agreement* may be excluded from this discussion.

The Proponent shall also include a discussion of any steps it proposes to take to ensure it meets its project related tax obligations (including fuel and payroll taxes) with the Government of Nunavut, as well as meeting their regional programs for resource management.

5.5 Regional Context

The Proponent shall describe in general terms the regional biophysical and socio-economic (including health, social, economic, and cultural) environments as well as well-being of the region and Nunavut as a whole. This includes, but is not limited to: ecological land classifications, ecological processes and relationships, the location of other base and precious metal finds and other existing and potential developments ~~and~~ including current and future land use plans. This discussion should also include regional current and future land and/or aquatic use activities, including hunting, harvesting, gathering, occupancy, and land uses such as for cultural practices, travel and camps, and cultural connection (past, present, and future) to the proposed project affected area.

6.0 PROJECT DESCRIPTION

The following sections contain explicit requirements regarding project components and all activities associated with each project component through the life of the proposed project. It should assist in the understanding of the potential biological, ecological, physical, health, social, economic, and cultural impacts.

6.1 Project Design

General project design information discussed in the Impact Statement shall include:

- An explanation of how the biophysical and socio-economic environments and well-being have influenced the design of the proposed project. This should include consideration of relevant geographical, geological, meteorological, hydrological, and oceanographic conditions. This discussion should also include current and future land and/or aquatic use activities, including hunting, harvesting, gathering, occupancy, and land uses such as for cultural practices, travel and camps, and cultural connection (past, present and future) to the proposed project affected area;
- A discussion on how the potential for climate change effects on the proposed project has influenced the design, planning and management of the proposed project components and associated activities;

- A discussion of how design, engineering, and management plans will maintain/enhance the existing ecosystemic integrity, focusing on wildlife habitats, including freshwater habitat, marine habitat, and terrestrial habitat **including cumulative impacts in the local and regional study area as well as the Qikiqtaaluk region where applicable**;
- An overview of the socio-ecological systems established for the assessment of potential impacts;
- A discussion of how potential effects to humans (e.g., social, economic, and well-being) and communities have influenced the proposed project design **to protect and/or minimize adverse effects due to remote locations**. For example, the potential for increased social stratification, potential for exposure to new infections or diseases, impacts to vulnerable populations, increased stress on local infrastructure such as housing, roads, waste and water management systems, obstruction to enjoyment of the natural environment (e.g., by changes to sound level, obstructions to view, obstructions to access), loss of access to harvesting and gathering areas, loss of availability and both real and perceived changes to the quality of harvest, and direct or indirect effects to food security to social and mental health, etc.);
- A discussion of how potential impacts to workers and the public under both normal operations and potential accident and malfunction situations have influenced the design of the proposed project;
- A discussion of how potential impacts to **aquatic, marine, and terrestrial** wildlife (e.g., caribou, Polar bears, Peregrine falcons, belugas, etc.) have influenced the design of the proposed project especially indicating methods to **avoid and/or** minimize impacts to **aquatic, marine, and terrestrial** wildlife, including the geographical location of project components, and how the proposed project has been designed to limit the overall size of the proposed project footprint, minimize sensory disturbance to wildlife;
- A discussion of how regional health, social, economic, and cultural conditions have influenced the proposed project design. For example, how local preferences and labour capacity have influenced the design of work rotations, pace of construction, and employment policy;
- A discussion of how project design, particularly project infrastructure and site preparation, has been influenced by the distribution of archaeological resources and sites used for harvesting of **fish and** wildlife and quarrying of soapstone;
- A discussion of how public engagement, consultation and Inuit Qaujimajatuqangit have influenced the planning and design of the proposed project;
- The considerations for future development;
- A discussion of how the Proponent has applied the precautionary principle in its project planning, design, and management;
- A discussion of how the proposed project would contribute to sustainability; and
- Demonstration that the proposed project can be closed in a manner that does not adversely impact members of the public and/or the environment, including:

- A description of the estimated contaminant and other material (physical and chemical) levels in the environment as well as estimated doses to members of the public after closure and remediation; and
- Consideration for the overall aesthetics of the site after closure and remediation.

All assumptions underlying design features which are relevant to the impact assessment should be explicitly stated.

6.2 Project Purpose, Need, and Alternatives

The IS shall describe the purpose and need for the proposed project by outlining what is to be achieved by carrying out the proposed project (i.e., objectives) from the perspectives of the Proponent and by the public as expressed through comments **at various meetings and engagement sessions and how this information was incorporated into the development of the proposed project.** The rationale for the proposed project must include the following points:

- Any problems and opportunities that the proposed project is intended to satisfy;
- General feasibility from an economic perspective, including how the proposed project would directly or indirectly benefit communities in Nunavut;
- An assessment of the longer-term strategic implications of the proposed project, and how it may affect or contribute to transportation and other infrastructure networks (existing and proposed) in Nunavut;
- Identification of past, current, and potential future users of the local study area, regional study area, and project infrastructure, including commercial, government, public, and private; and
- An analysis of the overall net benefit of the proposed project in terms of Nunavut, and of Canada as a whole. The net benefit analysis shall not only include considerations of likely economic benefits, but also any adverse social, cultural, and economic impacts that could occur, including but not limited to alternative economic activities that may be reduced or lost because of the proposed project.

Discussions addressing the above points shall be supported by an analysis of the positive and negative social and economic impacts on existing industries, markets, and communities over the life of the proposed project. This analysis should also indicate the distribution and magnitude of benefits and/or losses to specific well-being and mental health of socio-economic groups in the relevant study area.

6.2.1 Alternatives

The IS shall include an explicit analysis of all alternative means of carrying out the proposed project components or activities, including a "no-go" alternative. This analysis must include the identification and application of criteria used to determine the technical feasibility and economic viability of the alternatives to the proposed project (e.g., transportation **as well as the** natural, social, economic, and cultural environments). This analysis must be done to a level of detail which is sufficient to allow the NIRB and the public **to** compare the proposed project with the alternatives and validate that the preferred plan for the proposed project is the most reasonable approach in

terms of the economic costs and the biophysical, social, cultural, well-being, health and economic impacts and benefits.

For this validation, the Proponent must include reasons for selection of the project and/or its components or its permutations as the preferred alternative¹¹, and the reasons for rejecting other alternatives. Where different routes are being considered for components such as roads and transmission line corridors, the Proponent must demonstrate strong consideration of Inuit Qaujimajatuqangit and avoidance of impacts on Inuit values. The preferred alternative means should be based on the consideration of biological, ecological, physical, health, social, economic, well-being, and cultural impacts, the technical feasibility, and economic viability, and the best available technology, and application of the precautionary principle. If the preferred alternative changes throughout the course of its assessment, the Proponent shall consult with the NIRB to determine whether this proposed change would result in a change to the scope of the proposed project under Review.

The assessment of alternatives should demonstrate:

- The assessment of the technical and economic feasibility for each alternative has considered the:
 - vulnerability of the Arctic ecosystem, particularly in terms of the accelerated pace of climate change effects
 - the certainty or uncertainty of the assessment
 - lifestyle (cultural and hunting/harvesting of the area, isolation)
 - potential for extension of the life of the proposed project and/or a phased approach to mining;
- That the best available technologies have been considered and applied in determining alternative means;
- The criteria used to evaluate alternative means reflects the potential concern for both the short-term (during construction and operations) and long-term (after decommissioning and reclamation) physical-chemical stability and environmental impacts of the proposed project;
- The requirements of [Section 7.4.3](#) of this document, specifically the consideration for cumulative impacts on the terrestrial, aquatic, and marine ecosystem and on traditional harvesting activities and whether each alternative has considered the vulnerability of the Arctic ecosystem;
- How baseline data, valued components, and assessment boundaries have been considered; and
- How the views, information, knowledge and opinions of Nunavummiut, the public, and other participants have been taken into consideration as a criterion in the assessment of all

¹¹ The NIRB only includes the preferred alternative in its assessment as this option. Alternatives that were rejected are not considered.

the alternative options. ~~It~~ **Information** should include a discussion of how engagement and consultations by the Proponent have influenced the proposed project planning, and how the preferences of Nunavummiut, the public, and other participants ~~have been~~ **are** considered by the Proponent in determining the preferred project alternatives.

6.3 Scope of the Project

As set out in ss. 99(1)(a) and 99(1)(b) of the *NuPPAA*, the scope of the proposed project shall be defined to reflect the project proposal received by the NIRB from the Proponent and must include any work or activity identified in the project proposal, as well as any other work or activity that the Board considers sufficiently related to the proposed project. The NIRB may exclude any work or activity from the scope that it considers insufficiently related to the proposed project.

The Proponent shall consider all phases, components, activities, and works **and/or alternative means to undertake the project** identified in the scope of the proposed project as part of the impacts assessment.

6.3.1 Detailed Project Description

The Proponent shall describe the proposed project by presenting project components and all activities associated with each in a systematic way **including alternative means to undertake the project including crossings for water courses, disturbance to navigable waters or aerodrome work**. The description should focus on the activities that will have the greatest potential to have biological, ecological, physical, health, social, economic, well-being, and cultural impacts. The description shall encompass the proposed project as a whole, including all phases of development, the location of each activity and the activities' duration, magnitude, and scale in sufficient detail to allow the Proponent to predict potential adverse and positive ecosystemic and socio-economic impacts, any interaction between those impacts, and to address any public concerns about the proposed project.

The Impact Statement should include a schedule, including time of year, frequency, and duration of all proposed activities **including alternative means to undertake the project that the proponent wishes to include in the NIRB's Review** and highlight activities that involve periods of increased disturbance to the biological, ecological, physical, health, social, economic, well-being, and cultural conditions. The description should also include changes that would occur in the **local or regional** study areas because of the proposed project **and/or the alternative means to undertake the project**. Where specific codes of practice, guidelines, and policies apply, thresholds and quantitative limits shall be applied. These documents must be cited and may be included as appendices to the Impact Statement where required.

6.3.2 Project **Development Phases**

The Proponent is required to present a description of each project development phase [site preparation/pre-construction, construction, operation (including reduced operation), maintenance, any potential modifications, temporary closure (care and maintenance), final closure (decommission and reclamation) and post-closure], relevant timeframes, works and undertakings associated with each of these phases. The plan must include consideration for reduced function,

temporary closure, or care and maintenance recognizing that operations may come to an unforeseen pause. The Proponent must also identify all associated monitoring and mitigation plans (biophysical and socio-economic) to be implemented in each of the identified phases to eliminate or minimize adverse impacts that might occur at various project stages for each project element.

6.4 Future Development

The Proponent shall evaluate any foreseeable expansions of the current project, the needs of required infrastructure, and associated biophysical, socio-economic, and well-being impacts. Such an evaluation should be based on the Proponent's business strategic plan for the proposed project, other predictions and the development realized by projects of a similar nature. The Proponent shall provide sufficient information regarding foreseeable future development related to the proposed project to ensure that the Proponent is not 'project splitting'. Conceptual design is normally sufficient when providing information on future development.

In addition, the Proponent shall discuss how any foreseeable future development scenarios have been taken into consideration when designing the infrastructure and ancillary utilities for the proposed project. The Proponent's assessment of cumulative impacts of the proposed project shall also include the future development scenarios as outlined above.

6.5 Economic and Employment Information

To understand the context of the proposed project, the Impact Statement shall include a description of the economic and employment aspects of the proposed project **including the implications and applicability of using remote SmartMine technology**, including:

- Capital costs, estimated operating costs, including closure costs and the total expected revenues (current market values);
- Estimation of the number of full and part-time jobs to be created directly and indirectly by the proposed project, with consideration of local business and supplying contracting;
- The types of jobs, required skills and education levels (using a recognized classification system) including training requirements for each position;
- Opportunities for employment;
- The number of person years of work, broken down by various phases of the proposed project;
- Contracting and procurement information including, if known, a breakdown of the number and types of jobs that will be done by contractors and what the contractor obligations to employees will be;
- Communities of focus for hiring opportunities and anticipated hiring policies;
- Worker housing situations including number of workers expected to be residing onsite or in workers' camps, on-site services and facilities for workers, transportation to work and proposed work schedule;
- Discussion of the commuting arrangements for local hired workers, Inuit and non-Inuit, especially those who live in the communities without proposed direct air transport to the

proposed project sites and how the Proponent plans to support the fly-in/fly-out workforce with in-community liaison workers;

- Expectations and perceptions to employment at the proposed project by the residents in the proposed project regional study area;
- Information on benefits, including employee assistance programs that might be expected by employees and whether these benefits will extend to contractor employees (e.g., training, skill enhancement, career planning, employee counselling, cultural support, wellness program);
- Information on training opportunities and/or support provided to Inuit to be able to advance within the company;
- Information on assistance programs and/or support provided to Inuit to successfully enter the contracting and procurement process; and
- Workplace policies and programs (e.g., codes of conduct, workplace safety programs, cultural awareness programs, on-site support for Inuit and non-Inuit workers, community support for worker's families, and country food programs).

7.0 IMPACT ASSESSMENT METHODOLOGY

7.1 Factors to be considered in the Impact Assessment

The Impact Statement Guidelines correspond to the factors as outlined in s. 103 of the *NuPPAA* that the NIRB must take into account when conducting a review. The Proponent is expected to prepare an Impact Statement that provides sufficient information and evidence in accordance with the following factors:

- (a) the purpose of the project and the need for the project;
- (b) whether, and to what extent, the project would protect and enhance the existing and future well-being of the residents and communities of the designated area, taking into account the interests of all Canadians;
- (c) whether the project reflects the priorities and values of the residents of the designated area;
- (d) the anticipated effects of the environment on the project, including effects associated with natural phenomena, such as meteorological and seismological activity, and climate change;
- (e) the anticipated ecosystemic and socio-economic impacts of the project, including those arising from the effects referred to in paragraph (d);
- (f) the cumulative ecosystemic and socio-economic impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out;
- (g) whether the impacts referred to in paragraphs (e) and (f) would unduly prejudice the ecosystemic integrity of the designated area;
- (h) the measures, including those proposed by the Proponent, that should be taken to
 - i) avoid and mitigate adverse ecosystemic and socio-economic impacts, including contingency plans,

- ii) optimize the benefits of the project, with specific consideration given to expressed community and regional preferences in regard to benefits,
- iii) compensate persons whose interests are adversely affected by the project, and
- iv) restore ecosystemic integrity after the permanent closure of the project;
- (i) the significance of the impacts referred to in paragraphs (e) and (f), taking into account the measures referred to in paragraph (h);
- (j) the capacity of renewable resources that are likely to be significantly affected by the project to meet the existing and future needs of the residents of the designated area;
- (k) any monitoring program of the project's ecosystemic and socio-economic impacts that should be established, including one proposed by the Proponent;
- (l) the interests in land and waters that the Proponent has acquired or seeks to acquire;
- (m) the options for carrying out the project that are technically and economically feasible and the anticipated ecosystemic and socio-economic impacts of such options;
- (n) the posting of performance bonds;
- (o) the particular issues or concerns identified under subsection 96(1); and
- (p) any other matter within the Board's jurisdiction that, in its opinion, should be considered.

The NIRB will consider the need for, alternatives to, and alternative means of carrying out the proposed project in assessing the justification for any significant ecosystemic and socio-economic impacts identified both separately and holistically, and in formulating its recommendations to the responsible Ministers.

7.2 Scope of the Impact Assessment

The scope of the impact assessment determines the expectations of the process based on priority issues related to the proposed project, defining the components of the ecosystemic and/or the socio-economic (including health, social, economic, and cultural) environments that could be impacted by the proposed project and for which there is public concern. The scope confirms which valued ecosystemic and socio-economic components must be considered to determine the potential for impacts associated with the proposed project through all planned project stages of the development, and which the Proponent will be required to examine within its Impact Statement.

Scoping establishes the environmental assessment parameters and focuses the assessment on relevant issues and concerns. The environmental assessment of the proposed project in support of the Board's Review must address the factors as outlined in [Section 7.1](#).

7.2.1 Valued Ecosystemic and Socio-Economic Components

As noted in [Section 2.1](#) of these Impact Statement Guidelines, the Impact Statement should include the processes and interactions between the valued components selected that are likely to be affected by the proposed project. If relevant, the location of these valued components should be indicated on maps or charts, indicating to whom these valued components **are important** and the reasons why, in terms of biophysical, social, economic, health, cultural, archaeological, recreational,

tourism, aesthetic or other considerations. The Proponent should also indicate the specific geographical areas or ecosystems that are of particular concern, and their relation to the broader regional biophysical and socio-economic environments or values.

The final list of valued components to be presented in the Impact Statement shall be completed according to the evolution and design of the proposed project and reflect the knowledge on the biophysical or socio-economic environments acquired through public engagement. The Proponent must describe how the valued components were selected and what methods were used to predict and assess the impacts of the proposed project on these valued components. The Proponent should also validate the choice of valued components, especially those valued components that will be used to assess the significance of proposed project component interactions, through engagement with the potentially affected communities, residents, public and knowledge holders, local organizations, designated Inuit organizations, Indigenous groups, other governments or organizations, and interested individuals, and through respectful incorporation of Inuit Qaujimajatuqangit. The value of a component shall be considered not only in relation to its role in the ecosystem, but also the value placed on that component by humans for traditional use, cultural connection, and social and mental well-being. The Proponent shall provide a rationale for the selection of communities and relevant studies for which baseline data has been provided. For all valued components used in the assessment, the Proponent shall describe, explain, and justify the identified indicators or measurable parameters (i.e., thresholds) that would be used to identify changes in the valued components as outlined in [Section 7.4.5](#).

The Proponent is expected to identify the proposed project components and activities that are anticipated to interact with the selected valued components. These components/activities could be grouped into the following categories:

- Components and activities related to site preparation/pre-construction, construction, operation (including reduced operation), maintenance, any potential modifications, temporary closure (care and maintenance), final closure (decommission and reclamation) and post-closure of the proposed project; and
- Components and activities induced by the project development, which will occur in the reasonably foreseeable future.

7.2.2 Assessment Boundaries

The scope of the proposed project must include any NIRB defined temporal, spatial and issues scope boundaries.

7.2.2.1 Spatial Boundaries

The Impact Statement shall define the spatial boundaries of the maximum area potentially affected by the proposed project **and the alternative means to undertake the project**, based on the boundaries for each individual type of impact. The spatial and temporal boundaries used in the impact assessment may vary depending on the valued components and will be considered separately for each component. The Proponent is required to consult with the potentially affected members of the public and governments as well as the NIRB during the development of the proposed project, when defining the spatial boundaries used in the Impact Statement. Further, depending on the

nature and location of the proposed project, the Proponent is encouraged to also engage with government departments and agencies as well as local government and regional Indigenous organizations in areas whose members may be impacted or have interest in the proposed project. National and international neighbouring areas to the designated area are summarized below but may not be exclusive to other areas that may be affected by or have interest in the proposed project.

The Impact Statement shall describe the spatial boundaries, including local and regional study areas, of each valued components **either individually or as part of a system** used to assess the potential adverse and beneficial impacts of the proposed project and provide a rationale for each boundary. The spatial boundaries of the assessment of the proposed project shall be determined based on the following criteria:

- The physical extent of project activities **and/or alternative means to undertake the project**, including transportation routes;
- The extent of terrestrial, **marine**, and aquatic ecosystems and habitat potentially affected by the proposed project, taking into account factors such as watersheds, and the migratory and/or life cycle of wildlife species, and demonstrated by evidence of the potential geographic extent of effects, supported by scientific methods, Inuit Qaujimajatuqangit, Indigenous Knowledge, and Community Knowledge;
- Ecological impacts (e.g., with respect to pollutant transport, bioaccumulation, noise);
- The communities potentially directly or indirectly impacted by the proposed project;
- The extent to which traditional and contemporary land and/or aquatic use activities, including hunting, harvesting, gathering, and land uses such as for cultural practices, travel and camps, and cultural connection (past, present, and future) could potentially be affected by the proposed project;
- The size, nature, and location of past, present, and reasonably foreseeable projects and activities which could interact with the items listed above; and
- Potential ecosystemic or socio-economic impacts outside of Nunavut.

The following general spatial boundaries are suggested as a minimum for impact assessment:

- **Site study area:** the site study area is the proposed project footprint (i.e., where project activities would be undertaken including the project's proposed facilities, buildings and infrastructure, transportation corridors, access roads, shipping routes, etc. and any energy generation/transmission, water withdrawal and deposition, and granular or other natural resource gathering to support project physical works and activities).
- **Local Study Area:** the local study area is that area inclusive of, and beyond the site study area, where there exists the reasonable potential for immediate impacts due to project activities from any phase of the proposed project, ongoing normal activities, or to possible abnormal operating conditions. The geographic boundary will depend on the factor being considered (e.g., a local study area defined for the aquatic environment will differ from that defined for the atmospheric environment).
- **Regional Study Area:** the regional study area is the area within which there exists the potential for direct and indirect biophysical and socio-economic effects of the proposed

project that may interact with the effects of other projects, resulting in the potential for cumulative effect. The geographic boundaries for the regional study areas are also specific to the factor being considered and the area includes lands, communities, and portions of Nunavut and other regions of Canada that may be relevant to the assessment of widespread impacts of the proposed project. The Proponent is advised to duly consider the transboundary implications of impacts to identified valued components because of air and marine transportation for the proposed project.

The Impact Statement must contain a justification and rationale for all spatial boundaries and scales chosen and **provide evidence that they have consulted Inuit about these spatial boundaries and their appropriateness, and where Inuit have identified alternative spatial boundaries, provide a rationale for why they were not adopted.** The Local and Regional Study Area may vary between disciplines and between valued components **and/or systems**, as they represent the likely distribution of project impacts on individual valued components. For example, a local study area defined for the aquatic environment will differ from that defined for the atmospheric environment, which will differ from that defined for archaeological studies. The Proponent is not required to provide a comprehensive baseline description of the environment at each of the above scales but must provide sufficient detail to address the relevant biophysical, socio-economic, and cumulative effects of the proposed project.

7.2.2.2 Temporal Boundaries

Like spatial boundaries, temporal boundaries may vary with, among other things, the type of impact being considered and with seasonal changes. The establishment of temporal boundaries has two aspects: the time-horizon used to predict changes, and the temporal variability and periodicity that characterize the predicted impacts. The time-horizon used for predicting change must be a function of the anticipated duration of the proposed project; including the final closure and post-closure phases, the predicted impacts, and the predictive capability of the various disciplines considered.

The Impact Statement shall determine the temporal boundaries separately for the site preparation/pre-construction, construction, operation (including reduced operation), maintenance, any potential modifications, temporary closure (care and maintenance), final closure (decommission and reclamation) and post-closure periods, including planned activities to be undertaken in conjunction with the proposed project. The temporary closure period (or care and maintenance) covers the period of untimely closure of the proposed project and includes care and maintenance activities. The final closure period covers decommission and reclamation activities. The post-closure period covers the period after the proposed project has been decommissioned and abandoned and ends when the footprint has been reclaimed and returned as much as possible to its natural state and has been accepted as reclaimed by regulatory authorities. Therefore, temporal boundaries of the post-closure period may encompass many years, depending on the site, the type of project, and the methods of closure.

The Proponent shall also consider where applicable, the temporal bounds of project alternatives under assessment, noting where they differ from those for the preferred option. As is the case for the determination of spatial boundaries, the temporal boundaries must indicate the range of appropriate scales at which baseline descriptions and the assessment of ecosystemic, socio-economic, and cumulative impacts are presented.

For all temporal boundaries, the Impact Statement shall give a rationale and justification for the boundaries chosen, including a description of any consultation with members of the public or technical experts including the incorporation of Inuit Qaujimajatuqangit. The Proponent shall demonstrate consideration to traditional and contemporary land and/or aquatic uses and occupancy (past, present, and future), in addition to other factors to be considered in its determination of temporal boundaries for the proposed project. This will be informed through consultation with communities and local land users.

In addition, the Proponent shall recognize the potential influence of climate change. In every instance where future climate change effects on the valued components or the proposed project are being considered, the Proponent shall include a range of potential outcomes drawing on the range of credible science scenarios about future climate alterations and discuss the implications of each. For example, there may be no immediate danger of permafrost degradation, but the Proponent must incorporate the future possibility of this risk into the design of project components where applicable.

7.3 Description of the Ecosystemic and Socio-Economic Environments and Baseline Information

The Impact Statement shall include a description of the environment, including the valued components of the existing environment and environmental processes, their interrelations, and interactions as well as the variability in these components, processes, and interactions over time scales appropriate to the Impact Statement. The Impact Statement shall include descriptions of existing conditions and trends over time to date for all selected valued components. The description of baseline conditions shall include both qualitative and quantitative information and data, as necessary, to understand the human and biophysical components of the environment. Baseline shall include well-being, food security, cultural practices, and land use. In characterizing the environmental impacts of the proposed project, the Proponent shall consider the historical background conditions (including a review of published literature, technical scientific reports, and peer-reviewed scientific literature), current baseline environment and the environmental and socio-economic trends within the proposed project area, including Inuit Qaujimajatuqangit shared in relation to the existing ecosystemic and socio-economic environments relevant to the assessment of potential impacts from the project for all proposed phases. The description of the historical background, current baseline conditions, and the impact trends shall include a consideration of past projects and activities carried out within the applicable study areas (project footprint, Local Study Area, Regional Study Area) which may have overlapping impacts, including transboundary impacts.

The Proponent shall explain methodologies used for developing an appropriate baseline. When developing baseline for the Impact Statement, the Proponent shall consider other types of information in addition to data, such as Inuit and other Indigenous stories and myths, perception of the land, well-being, food security, cultural practices, and land use. The Proponent shall work with potentially affected communities and Indigenous organizations to appropriately identify and use this knowledge and information. For data collection, information should be included on evaluation of the adequacy of data or validation, confidence levels associated with baseline data, and identification of significant gaps in knowledge and understanding and analyses (see [Section 2.1](#)). In addition, any uncertainties and the methodology and/or steps to be taken to fill information

gaps shall be discussed as deficiencies in baseline data increase uncertainties in the prediction of potential impacts, and consequently may require an intensification of corresponding monitoring and mitigation programs ([Section 11.3](#)), and follow-up and adaptive plans ([Section 11.3.1](#)), so parties can assess the Proponent's strategy. It is important that the Impact Statement reflects a holistic view of what the current state of the environment is, not just for a scientific view, but from an Inuit lens.

To identify natural fluctuations and trends including cyclical and other recurrent phenomena, the Proponent shall collect baseline data to reflect sufficient time, depth, and geographic broadness of both temporal and spatial scale (e.g., populations and distributions of wildlife valued ecosystemic components are known to fluctuate in cyclic trends over extensive time periods and geographic ranges and it could take several years to conduct the field research necessary to collect adequate baseline information across all seasons). **Where well-supported long term scientific data is lacking or there exists a reasonable degree of uncertainty, other types of information can be used to establish baseline data and should prioritize Inuit Qaujimajatuqangit to fill in gaps, particularly with reference to long-term natural fluctuations and trends that may not be sufficiently characterized by historic scientific data and relatively short-term project-specific studies.** To understand the natural ecological conditions and the potential impacts from the proposed project on these conditions, the Proponent should consider the design of all ecosystemic and socio-economic environmental monitoring programs to ensure that the baseline data required is useful in understanding the relationship between the natural ecological conditions and the potential project impacts on these conditions. While detailed guidance on baseline collection has not been provided, guidance is available through relevant authorities. To plan for and prepare the necessary baseline data in advance of an impact assessment, the NIRB strongly encourages developers of major projects to engage potentially affected members of the public and governments, as well as the NIRB during the development of the proposed project.

7.4 Impact Assessment Approach

The required impact assessment, including significance analysis, shall describe:

- The potential impacts and effects on individual valued components considered;
- The potential impacts and changes to the valued components as they interrelate to form systems;
- The significance of the impact and reasoning for that determination;
- The potential cumulative effects of the proposed project on the valued components as well as the systems identified;
- The potential for transboundary effects;
- Proposed mitigation measures to avoid, reduce, or offset predicted impacts; and
- Predicted residual impacts after mitigation measures have been applied.

Proponents are expected to put in more effort assessing the impacts that have been identified by communities as issues of concerns, as well as those with greater potential to cause residual impacts. This is true regardless of the Proponent's opinion on the significance of those impacts. This would

allow parties to better consider the potential impacts to reach their own conclusions about the significance of those impacts.

Impact analysis on individual valued components

The impact assessment for each valued component shall be linked to a list of project components and activities deemed responsible for the potential impacts. To complete the circle of information, a project component or activity shall also be linked to various biophysical and socio-economic elements, specifically valued ecosystemic components and valued socio-economic components, on which it could have impacts. A matrix or a comparable tool should be employed to identify all linkages between environmental elements and project components and activities, highlighting significant interactions between both. The Proponent is further encouraged to reach out to the potentially affected communities to identify appropriate tools in identifying and showing the potential for impacts. The biophysical and socio-economic elements potentially impacted by the proposed project components, activities and undertakings should be referred to in the categories listed in [Section 8.0](#). Based on the predicted potential adverse effects, the proposed mitigation measures shall be addressed in the corresponding management plans as listed in [Section 11.0](#).

7.4.1 Impact Prediction

The Proponent shall assess the potential for short and long-term direct, indirect, induced, cumulative, and transboundary **impacts** of the proposed project on the biophysical and socio-economic environments, and the interactions between valued ecosystemic components and valued socio-economic components and the greater systems they are a part of. The Proponent shall provide a discussion on how the predicted changes or impacts compare to current baseline conditions. The Proponent shall also describe its assessment of the degree of uncertainty associated with each predicted impact. Where potential cumulative impacts are identified, a discussion should be provided related to the cumulative effects assessment as outlined in [Section 7.4.3](#) of these guidelines.

Assessment of Impacts on Individual Valued Components

The Proponent shall identify potential impacts to each valued components resulting from each proposed project phase, including impacts arising from accidental events and malfunctions, with established mitigation (e.g., industry standard practices) used to draw impact predictions. Predictions shall be presented with explanations and justification, including the following:

- Explain how scientific, engineering, and Inuit Qaujimajatuqangit **data was were** used to inform the identification of impacts and determination of mitigation;
- Document and justify study methodologies, including mathematical or numerical modeling and statistical analyses (see [Section 2.1.2](#));
- Support analyses, interpretation of results and conclusions with reference to appropriate literature;
- Document assumptions and limitations of data collection and analyses, and describe how uncertainty in impact predictions have been dealt with;

- Identify which impact prediction studies included the assistance of communities and individuals, who was involved (if the information can be made public), and how participants were selected and were engaged in the impact prediction (see [Section 2.1.1](#));
- ~~How Inuit Qaujimajatuqangit was used to inform, interpret, or guide the scientific and engineering results and where Inuit Qaujimajatuqangit was able to offer new or additional insights or results may not align in full, and where scientific and Inuit Qaujimajatuqangit findings differ, the Proponent will identify efforts it has made and mitigation, monitoring, and accommodation measures it has adopted to reconcile these differences. Include differences and similarities in results from scientific, engineering, and Inuit Qaujimajatuqangit;~~
- Identify all proposed mitigation measures and adaptive management strategies, if applicable; and
- Describe or characterize the potential residual effects.

7.4.2 Impacts of the Environment on the Project

The Proponent shall discuss the potential impacts of the environment on the proposed project, considering such factors as:

- Geotechnical hazards (including slope and underground instability, differential or thaw settlement, frost heave, ice scour, and seismic activity);
- Unfavourable geological conditions (weak zones and/or faults);
- Permafrost (ground instability related to permafrost thaw and artesian groundwater pressure due to permafrost confinement);
- Severe weather events (extreme precipitation events, flooding, storm surges etc.); and
- Sea ice conditions, sea level trends, subsidence, and global climate change.

7.4.2.1 Climate Change

The Impact Statement shall include a discussion on global climate change and the Proponent must describe and assess, based on current knowledge, how potential climate change could affect Valued Components. In addition, the Proponent shall identify the proposed project's sensitivity to changes in specific climate-related parameters. ~~The proponent shall review the [draft Technical Guide related to the Strategic Assessment of Climate Change: Assessing Climate Change Resilience](#) and the guidance on quantification of net GHG emissions, impact on carbon sinks, mitigation measures, net-zero plan and upstream GHG assessment be considered when assessing impact of the project.~~ The discussion on climate change should include:

- Effects of climate on the proposed project, with a focus on the design and planning of project components and activities. The Proponent shall provide evidence that it has engaged ~~and incorporated~~ Inuit perspectives and observations on climate change and that the information shared has informed its consideration of effects of the environment on the proposed project;

- Effects of extreme meteorological events on the proposed project, and related considerations for project design and planning, including, but not limited to:
 - extreme temperature and precipitation events;
 - high winds and waves;
 - ice-ride up and pile-up events;
 - extreme ocean water levels (high and low);
 - severe fog or white out conditions;
 - potential changes to the timing of ice formation, active layer thickness, and frequency of storms;
- Design and apply multiple scenarios on impact assessment, where these scenarios span the range of possible future climates, rather than designing and applying a single “best guess” scenario ([CCDS, 2018](#)). It is recommended that the range of future climates considered by the Proponent should include up to date scenarios, such as those used in the Arctic Climate Impact Assessment report ([ACIA, 2005](#)) as well as those in the relevant Intergovernmental Panel on Climate Change Assessments for Polar Regions ([IPCC, 2018](#)). Further, the Proponent shall also assess the degree of uncertainty or confidence associated with each scenario;
- Impacts from climate change on sensitive ecosystem features within the terrestrial, **freshwater**, and marine ecosystems;
- Predicted effects of climate change on mean and extreme climate parameters, and meteorological phenomena including flooding, storms, etc.
- Potential effects of climate change on permafrost and soils with high ice content, the hydrological regime, the groundwater regime, as well as marine ice flow regimes, with discussion of the related implications on the long-term stability of project components (i.e., water diversions and impoundment structures, waste water treatment structures, fuel and chemical storage areas, solid waste sites, road structures, waste management facilities, etc.) and sensitive land features (e.g., Canadian Heritage River, territorial or national park), specifically if permafrost is being used as mitigation for impacts; and
- Uncertainties related to climate change predictions, and the related effect on other predictions in the Impact Statement, including water quantity, **water quantity**, and permafrost thawing.

Longer-term effects of climate change must also be discussed throughout the project cycle up to and including the projected post-closure phase of the proposed project. The sensitivity of the proposed project to long-term climate variability and effects shall be identified and discussed.

7.4.3 Cumulative Effects Assessment

A cumulative effect (or impact) refers to the accumulation or **synergistic effects from the addition or interaction** of changes to the environment caused by human activities (**including** past, existing, and proposed activities, including activities associated with the proposed project under assessment) and natural processes (such as climate change). These changes occur over space and

time and can be affected by or brought about by impacts that are additive or interactive. Cumulative ecosystemic and socio-economic effects can also result from individually minor, but collectively significant, actions taking place over time. Finalizing the choice of valued components ~~synergistic effects from the addition or interaction of changes shall to~~ be included ~~and discussed~~ in a cumulative effects assessment ~~and~~ with ~~the~~ appropriate boundaries, including potential transboundary areas. ~~The cumulative effect assessment shall also~~ be informed and confirmed through the Proponent's engagement with the public and governments or organizations. Where relevant, the Proponent shall consult with adjacent jurisdictions outside of the designated area (see [Section 7.4.4](#) for Transboundary discussion). The Proponent shall also describe and demonstrate how Inuit Qaujimajatuqangit was used ~~in identifying~~ to inform, interpret, or guide the cumulative effects assessment. ~~and the views of the acceptability of the impacts to valued components. Also, the proponent shall discuss how Inuit Qaujimajatuqangit was able to offer new or additional insights. Where results may not align in full, and where scientific and Inuit Qaujimajatuqangit findings differ, the Proponent will identify efforts it has made and mitigation, monitoring and accommodation measures it has adopted to reconcile these differences.~~

The Proponent shall identify and assess the project's ~~potential cumulative effects~~ total cumulative effects on valued components or systems subject to residual impacts from the Project based on the components listed below. This analysis must include the Proponent's measures to reduce and compensate for potential cumulative effects. The cumulative effects section shall also assess the significance of cumulative effects with and without the application of mitigation measures and include a plan to monitor the accuracy of the assessment:

- *Spatial boundary (Regional Study Area rather than Local Study Area):* The Proponent shall identify and justify the spatial boundary for each valued components selected. The boundaries for Cumulative Effects Assessment may differ for each valued component considered and must not be constrained by jurisdictional boundaries. Spatial assessment boundaries may cross jurisdictional boundaries for a better understanding of additive and interactive pathways of different types of cumulative effects and may extend beyond Canada's jurisdiction. A larger special boundary enables the Proponent to assess the proposed project impacts in relation to other projects or activities in the geographical region, that have been or that are likely to be carried out;
- *Temporal scale (as defined in [Section 7.2.2](#)):* The Cumulative Effects Assessment shall include an assessment of trends over time for each valued component, to establish the degree of vulnerability to future change. The Proponent shall identify and justify the temporal boundaries selected and must include an appropriate baseline and assess the potential impacts throughout the lifecycle of the proposed project including decommissioning and abandonment;
- *Identification of valued components and activities:* The Proponent shall justify the valued components included in the Cumulative Effects Assessment, which must not merely be an extension of the proposed project assessment but shall emphasize the cumulative impacts for those valued components that could potentially be most affected by the proposed project as well as projects that have previously occurred in area;
- *Alternatives analysis:* The Cumulative Effects Assessment shall integrate multiple realistic scenarios of future developments, and other human activities as well as natural

environmental vulnerabilities and events (such as wildfires, flooding or climate change), not merely “reasonably foreseeable” projects. The potential impact of climate change must be considered in addition to each scenario when conducting the Cumulative Effects Assessment with particular emphasis to the significance of each impact. Future based scenarios should compare situations with the proposed project and without the proposed project. Therefore, the Cumulative Effects Assessment should address the alternatives presented under [Section 6.2.1](#) of these guidelines;

- *Consideration of effects on the valued components:* The Proponent shall identify and provide a rationale for the valued components that were selected and excluded and the discussion should be based on those that are most likely to be affected by the proposed project in combination with other projects and activities in the appropriate spatial boundary. The Cumulative Effects Assessment should enable the Proponent to more accurately assess how the interaction of impacts from the various project components and activities, and those from other past, present and reasonably foreseeable projects might impact in a cumulative fashion on selected valued components. It must assess the cumulative effects for those valued components that could potentially be most affected by the proposed project. This enables the Proponent to consider all activities from past developments into the present time and the reasonably foreseeable future for a more accurate analysis of variability and significance of long-term effects;
- *Evaluation of significance:* The Cumulative Effects Assessment shall identify and predict the likelihood and significance of potential cumulative effects, including direct, indirect, and residual impacts. The Proponent shall describe any mitigation measures that are technically and economically feasible to reduce or eliminate adverse cumulative biological, ecological, physical, health, social, economic and cultural effects. The Proponent shall consider and determine the significance of the cumulative effects using the criteria described in [Section 7.4.6](#).

7.4.4 Transboundary Impacts

Transboundary impacts, for the purpose of the Impact Statement Guidelines, are defined as those impacts linked directly to the activities of a project or related works conducted inside the designated area, which occur across provincial, territorial, or international boundaries, or could result in impacts within the designated area from project related works that may occur outside of the designated area. Transboundary considerations include both geographic proximity to transboundary areas and shared resources. Triggers for transboundary considerations in a NIRB assessment are:

- Location of associated activities or components of a project referred to the NIRB;
- Proposed project components in an area in the designated area that other Indigenous groups also have rights;
- Potential negative impacts to the well-being of Canadians outside of the designated area;
- Potential negative impacts to the rights of other Indigenous groups, including harvesting rights; and/or

- Potential for negative impacts to resources outside of the designated area (e.g., water, air, and migratory species such as caribou, marine mammals, fish, and birds).

There are areas within and outside of the designated area that Indigenous groups from different jurisdictions have traditionally used and continue to use and have equal access and rights to. If components of a proposed project are located within these areas in the designated area, the NIRB is required to recognize the appropriate ~~transboundary groups~~ **Groups Asserting Section 35 Rights in Nunavut**. Areas within Nunavut but outside of the designated area are considered transboundary.

The Proponent shall give due consideration to the potential for transboundary impacts which may be a result from interactions between the effects of the proposed project in the designated area, and the effects of projects located outside the designated area. As noted above, the potential for transboundary impacts related to cumulative effects associated with this proposed project shall also be defined.

Where feasible, the potential for transboundary impacts should be considered for all valued components identified by the Proponent, with specific consideration given to the potential for transboundary impacts associated with marine transportation on marine mammals, migratory birds and seabirds, and their habitat, as well as the large migration range of land mammals such as caribou. This shall include direct, indirect, and induced impacts on the socio-economic environment, including to land and/or aquatic uses, and other harvesting and cultural uses and food security and associated well-being. Any residual impacts which have the potential to occur outside of the designated area shall also be included in the Proponent's evaluation of transboundary impacts.

7.4.5 Indicators and Criteria

The Proponent shall identify the indicators and criteria selected for assessing the potential impacts of the proposed project, including any cumulative and transboundary impacts as well as the significance of impacts, and shall justify their selection. In doing so, the Proponent shall describe the role played by consultation with members of the public, technical experts, and ~~discuss how note-applicable~~ **Inuit Qaujimajatuqangit informed, interpreted, or guided this selection including those which were not adopted**. The Proponent shall also identify all indicators suggested by the public and governments which were adopted and provide justification for any which were not adopted.

In its discussion of indicators, the Proponent shall emphasize the linkage between those indicators and the relevant valued components **or synergistic effects from the addition or interaction of changes to the environment**, and **how the Proponent adopted Inuit Qaujimajatuqangit, including observational/sensory indicators, into the assessment, and/or where these are not included for valued components or systems, provide a supporting rationale adopted Inuit observational/sensory indicators into its assessment**. The indicators for the valued ~~ecosystemic-components~~ **or synergistic effects from the addition or interaction of changes to the environment** should include sensitivity to contaminants and environmental pathways of exposure and bioaccumulation.

7.4.6 Significance Determination

Assessing the significance of potential impacts is the most important aspect of an Impact Statement and is conducted through comparison of the predicted state of the environment with and without the proposed project and assessing the importance of the changes identified.

In the process of significance determination, the Proponent will communicate with the public and governments, including where relevant, adjacent jurisdictions outside of the designated area (see [Section 7.4.4](#) for Transboundary discussion), to solicit input and incorporate their views regarding the value placed on a valued component, as well as associated significance of impacts. The Proponent shall also describe and demonstrate **how** Inuit Qaujimajatuqangit used for significance determination.

The Proponent shall include in the discussion of significance how it considered different parties' views in determining significance of impacts for each valued component **or systems**. When there are differences between the parties' and the Proponent's view of significance for a valued component **or system**, the Proponent shall include the range of viewpoints expressed and justify the Proponent's preference, if any **as described in Section 2.1**. Finally, the Proponent shall describe the significance it assigned to each impact and justify how the significance of the impact was determined.

The dynamic change of the biophysical and socio-economic environments and their components **or combined impacts** must also be considered in determining impact significance. The Proponent shall evaluate the significance of potential impacts in the light of data on the current "state of health" of ecosystems **and/or systems** and their predictable evolution, while taking into account global climate change. A similar analysis shall be included for the socio-economic environment and include discussions related to culture and well-being, taking into account the acceptability of the impacts.

For example, potential impacts to food security and the implications of these impacts. Consistent with the ecosystem approach requirements noted above and holistic view of the environment, the Proponent should highlight the interactions within and between valued components in an effort to increase understanding of the dynamism of the ecosystems in question and the nature and severity of the predicted impacts as discussed in [Section 7.4.3](#).

The terms used to describe the level of significance such as, but not limited to, "negligible" "low", "medium", "high", "adverse", "additive", "beneficial", "positive", "negative" must be clearly defined, where possible in quantitative terms. The Proponent is encouraged to develop levels of significance through engagement and consultation with the public. The following attributes, at a minimum, shall be taken into consideration by the NIRB in determining the significance of each impact:

- a) the size of the geographic area, including the size of wildlife habitats, likely to be affected by the impacts;
- b) the ecosystemic sensitivity of that area;
- c) the historical, cultural and archaeological significance of that area;
- d) the size of the human and the animal populations likely to be affected by the impacts;

- e) the nature, magnitude and complexity of the impacts;
- f) the probability of the impacts occurring;
- g) the frequency and duration of the impacts;
- h) the reversibility or irreversibility of the impacts;
- i) the cumulative impacts that could result from the impacts of the project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out;
- j) any other factor that the Board considers relevant to the assessment of the significance of impacts;
- k) Impacts are to be considered significant if they are likely to/likely to be:
 - Adverse;
 - Intensive in concentration or associated with significant levels of change;
 - Frequent and long-lasting;
 - Irreversible;
 - Occur at a broad spatial scale;
 - Associated with cumulative change;
 - Diminish the sustainability of ecosystemic and socio-economic systems;
 - Negatively affect ecological functions of ecosystemic and socio-economic systems;
 - Negatively affect ecological functions or exceed assimilative capacity of the ecosystemic and socio-economic environments;
 - Associated with variables of societal importance and public concern **or have a measurable/observable negative effect on Inuit use of a culturally significant area or value** and likely to exceed desired levels of change; and
 - Not in compliance with existing standards or regulations.

7.4.7 Certainty

The Proponent shall also assess the degree of uncertainty or confidence associated with each predicted effect and level of significance. The level of certainty with predictions is related to limitations in the overall understanding of the ecosystem and limitations in accurately foreseeing future events or conditions, **including the overall understanding of the use of the technology within the Arctic and/or Baffin Island**. All forecasts and discussions related to climate change should include the associated level of certainty. The Proponent shall provide a reasonable description of how uncertainties have been dealt with, through elements such as project design, monitoring, and contingency plans (see Section 11.3.1).

8.0 PROJECT ENVIRONMENT AND IMPACT ASSESSMENT

The Impact Statement shall provide a complete analysis of the predicted effects from the proposed project on the ecosystemic and socio-economic environments (see [Section 7.0](#)), which will serve as a basis for developing various mitigation and monitoring plans to eliminate and/or minimize the potential impacts from the proposed project.

8.1 Ecosystemic Environment and Impact Assessment

The Proponent shall present relevant information pertaining to the ecosystemic environment and associated processes to be assessed (see [Section 7.3](#)), to serve as a baseline for comparison of the potential impacts of the proposed project, and discussing impact related to all project phases of development (from site preparation/pre-construction, construction, operations, temporary closure, final closure through post-closure monitoring). Information should be presented in the form of a “Conceptual Site Model” with clear links to ecological and human health risk assessment presented throughout the document. Baseline summaries should also include trends and how the environment is expected to change over the life of the proposed project.

In describing the ecosystemic environment, the Proponent shall take an ecosystemic approach that is informed by both scientific and Inuit Qaujimajatuqangit, Indigenous Knowledge perspectives regarding ecosystem health and integrity.

In its impact assessment, the Proponent should identify and justify the indicators and significance thresholds, including evidence of involvement of potentially affected communities and residents in the determination of these indicators and thresholds, and further relate them to project monitoring and follow-up measures. For each predicted negative impact in this section, associated mitigation measures proposed should be discussed to the extent possible to reduce or avoid the identified impacts, with references to project design ([Section 6.1](#)) and environmental management systems ([Section 11.0](#)). The Proponent should also include a treatment on the temporal aspect of when potential impacts on each relevant valued ecosystemic component could reasonably be expected to manifest.

8.1.1 Air Quality

8.1.1.1 Baseline Information

- i. Background ambient air quality data collected in the LSA and RSA including airborne dust (TSP, PM₁₀ and PM_{2.5});
- ii. Current sources of criteria air contaminants [TSP, PM₁₀, PM_{2.5}, NO_x, SO₂, volatile organic compounds (VOCs), Ozone (O₃) etc.] and GHG emissions; and
- iii. Seasonal variations or climatic conditions associated with variations on air quality.

8.1.1.2 Impact Assessment

The Proponent is required to present a comprehensive impact analysis for all Project components and activities on air quality. This analysis shall include the following:

- i. Discussion of the standards, guidelines and regulations that the Proponent will incorporate to minimize and mitigate effects to air quality;
- ii. Predictions of principle pollution emission sources from the Project at various stages, including:
 - Criteria air contaminants [TSP, PM₁₀, PM_{2.5}, NO_x, SO₂, volatile organic compounds (VOCs), Ozone (O₃), etc.] and GHG emissions from the fuel consumption of mobile equipment such as vehicles, marine vessels, aircraft, and stationary equipment such as diesel generators and other combustion sources;
 - Fugitive dust and gaseous emissions from construction activities and land clearing, extraction and ore processing, handling, tailings, waste rock and ore stockpiling, quarries and other Project components and works; and
 - Fugitive dust emissions from ground transportation and wind erosion at various Project components including the all-weather road, access roads and mine hauling roads.
- iii. Assessment of dispersion of Project emissions within the LSA and RSA, using appropriate modelling, and discussion of related impacts and mitigation strategies;
- iv. Discussion of Project components and activities which may contribute to the potential for acidic input, and an evaluation of associated effects;
- v. Assessment of effects on air quality from Project emissions during various project stages including airborne dust (TSP, PM₁₀ and PM_{2.5} and/or metals) and criteria air contaminants such as SO₂, NO_x, CO, VOCs, O₃, etc.;
- vi. Assessment of the Project's GHG contributions to both Nunavut and Canada; and
- vii. A discussion of the potential effects of changes in air quality on human health and the environment.

8.1.2 Climate and Meteorology

8.1.2.1 Baseline Information

- i. A description of the baseline meteorological and climatic conditions at the LSA and RSA, including methods of determination including a discussion of how data from outside the project area may have been utilized and uncertainties encountered;
- ii. Meteorological data including, but not limited to, air temperature, precipitation, wind directions and velocity, as well as prevailing wind directions for locations of proposed project components and along proposed shipping route(s);
- iii. Annual, seasonal, monthly, and daily average and mean values of above noted meteorological parameters; seasonal and yearly fluctuations and variability; and extreme climate events over the same period of time in which the data including site-specific data are collected in the RSA of the Project; and

- iv. Prevalent trends related to VECs in the project area and any resulting implications to the Project.

8.1.2.2 Impact Assessment

The Proponent is required to present a comprehensive analysis of the impact that all components of the Project and activities may have on climate and meteorology. This analysis shall include the following:

- i. Discussion of the relationship between climate change and GHG emissions from the Project; and
- ii. Discussion on the climate parameters that may change due to emissions from the Project [GHGs, and criteria contaminants such as SO₂, NO_x, CO, VOCs, O₃, etc.].

8.1.3 Noise and Vibration

8.1.3.1 Baseline Information

- i. Description of baseline noise and vibration levels in the Project area, including a discussion on variability, and if applicable, the relationship between these parameters and local weather conditions, seasonal variations, etc.;
- ii. Review of available studies/research the potential impacts of noise and vibrations on wildlife behaviours and health in both terrestrial and marine environments, with a focus on noise from similar mining and shipping operations, in comparable climate and geographical regions if possible. Emphasis should be placed on level of noise and the identification of noise sensitive species, timing, etc.; and
- iii. Review of available studies/research on the potential impacts of noise and vibrations from blasting in or near freshwater and marine environments.

8.1.3.2 Impact Assessment

The Proponent is required to present a comprehensive analysis of the impact that all Project components and activities may have on noise and vibration. This analysis shall include the following:

- i. Description of anticipated noise and vibration levels from all relevant Project equipment and activities;
- ii. Discussion of the standards, guidelines, thresholds and regulations that the Proponent will comply with to minimize and mitigate impacts associated with noise and vibrations;
- iii. Potential increase to atmospheric noise levels from Project activities at different project stages, including those contributions arising from:
 - Ground transportation, including mine traffic, other access roads and the public where applicable;
 - Air transportation;
 - Equipment use at mine and construction sites, including power generators; and
 - Mine site operations including: blasting; drilling; dense media separation; tailings; transportation, and stockpiling activities;

- iv. Potential changes in marine noise levels due to shipping activities, as well as noise propagation in the marine environment; and
- v. Potential impacts of noise and vibration on the following:
 - Humans and human activity in close proximity to noise generating sources;
 - Terrestrial wildlife, with a focus on caribou and migratory birds and Species at Risk;
 - Marine mammals; and
 - Fish in fresh water and marine environments.

8.1.4 Terrestrial Environment

For the purpose of the current Guidelines, terrestrial environment includes terrestrial ecology, landform and soils, permafrost, and ground stability.

8.1.4.1 Baseline Information

- i. Description of existing unique or valuable landforms (e.g., eskers, fragile landscapes, wetlands), including details regarding their ecological functions and distribution in the LSA;
- ii. Description of existing or proposed protected areas, special management areas, and conservation areas in the RSA;
- iii. Discussion of the landforms and topographic features at areas proposed for construction of major project components, including the type, thickness, soil stability and/or clay sensitivity, and classification and distribution of soils as applicable;
- iv. Description of the bedrock lithology, morphology, surface geology, landform, and soils (including sediments and the thermal and ground ice conditions) at proposed borrow and quarry sites, project facilities such as tailing and waste rock management facilities, roads, and other areas where earthworks are proposed. If eskers are identified as a potential source of granular material, then a description of granular material properties, including thermal condition and ice content, should also be included;
- v. Discussion of the potential of geohazards, that may have an effect on the project or the occurrence of which may potentially be affected by the Project (e.g., slumping, landslides, potential slippage, seismic hazards) at areas planned for Project facilities and infrastructure;
- vi. Discussion of the relationship between permafrost processes and active layer, surface waterbodies and topography, including a description of permafrost and talik configuration in the development area and adjacent water bodies and implications for groundwater flow pathways;
- vii. Details regarding the suitability of topsoil and overburden for use in the re-vegetation of surface-disturbed areas;
- viii. Description of permafrost distribution in the LSA, including areas of discontinuous permafrost, high ice-content soils, ice lenses, thaw-sensitive slopes, and talik zones;
- ix. Description of permafrost temperatures at areas planned for Project facilities and infrastructure, including discussion of sensitivity to climate change, and implications for stability and safety of infrastructures; and

- x. Sites of paleontological or palaeobotanical significance within the LSA.

8.1.4.2 Impact Assessment

The Proponent is required to present a comprehensive analysis of the impact that all Project components and activities may have on the terrestrial environment. This analysis shall include the following:

- i. General impact on topography in the LSA as a result of Project development, borrow resource extraction, with a focus on sensitive landforms, and those serving as important vegetation and wildlife habitat;
- ii. Potential impacts on the abundance and distribution of unique or valuable landforms (e.g., wetlands, eskers and fragile landscapes) from the Project;
- iii. Potential for soil erosion, including stream bank erosion, resulting from surface disturbances associated with the Project components and activities (e.g., road embankments, water crossings, water management/diversions) during all Project phases;
- iv. Potential impacts to soil quality from compaction, the deposition of air emissions and airborne fugitive dust emissions and/or spills from the Project;
- v. Implications to the Project planning and design of design of project components related to terrain conditions, in particular permafrost, sensitive landforms, high ice-content soils, ice lenses, thaw-sensitive slopes, and talik zones;
- vi. Potential impacts on the stability of terrain, in particular the thermal stability, in the vicinity of facilities and infrastructure due to the thawing of the ice-rich permafrost soils and other sensitive landforms. Discussion should focus on the potential for impacts arising from surface disturbances due to construction (e.g., overburden stripping, mine pit creation, cuts/fills, excavation) of the facility and infrastructure;
- vii. Assessment and prediction of permafrost behaviour (degradation and its rate) beneath the pits during mining and operation of the tailings management facilities including disposing of waste rock. Long-term predictions of the thermal regime around the tailings management facilities should be conducted with the consideration of climate change. Numerical modelling should be employed for both short term and long-term predictions of permafrost evolution including predictions of artesian inflow into the tailings management facilities if thawing of permafrost is envisioned;
- viii. Potential impacts on contamination of traditional foods as a result of bioaccumulation, (i.e., food chain uptake through air, water, and soil);
- ix. Potential impacts on food (i.e., contamination of country foods) including those harvested or grown for subsistence or medicinal purposes (i.e., berries, etc.);
- x. Discussion of whether country foods are consumed, or are expected to be consumed, in the potentially affected area;
- xi. Identification of what country foods are consumed, which parts of country foods are consumed, and their consumption frequency;
- xii. Lists all potential contaminants and a determination of whether these contaminants may persist into country foods as a result from project activities;
- xiii. Potential impact from the loss or alteration of habitat (i.e., vegetation) due to pollutants and noise and its effects on wildlife, wildlife calving grounds and marine habitat;

- xiv. Discussion on environmental receptivity including ecological, physical and/or climatic factors that influence exposure to harmful substances; and
- xv. Discussion of the potential for the occurrence, frequency, and distribution of terrain hazards, including snow drifts and snowbanks, as a result of construction activities (e.g., cut/fill, extraction of construction materials).

8.1.5 Geological Features, Surficial and Bedrock Geology and Geochemistry

8.1.5.1 Baseline Information

- i. Description of local and regional bedrock and quaternary geology. The history of the geological formations and the description of their physical, chemical, and hydrogeological properties should be given. For data obtained with in-situ investigations, maps should be provided showing the location of the boreholes, with their positions relative to the planned project component;
- ii. Description of structural geology, such as fractures and faults, at major project infrastructure areas and where earthworks are proposed (e.g., mine site(s), port site, tank farm(s) and storage facilities, etc.);
- iii. Typical regional and local cross-sections of the general geology should be provided showing the geological units and their elevation, groundwater table, and linear geological structures;
- iv. Description of the geotechnical properties of bedrock and soil units, including ice content and thermal conditions of permafrost soils and rocks, as relating to slope stability, underground stability, and bearing capacity of facility foundations; and
- v. Acquisition of the in-situ stress either with in-situ investigation or from other sources with reasonable confidence.

8.1.5.2 Impact Assessment

The Proponent is required to present a comprehensive impact analysis for all Project components and activities on geology. This analysis should include the following:

- i. Potential geotechnical and geophysical hazards within the Project area, including potential seasonal subsidence, seismicity and faulting, risks associated with cut/fill slopes, underground excavation, and surface constructed facilities. Where appropriate, the assessment should be supplemented by analysis and illustrations such as maps, figures, cross sections and borehole logs;
- ii. Potential effects on foundation stability of major Project components from geological fractures and faults, and associated implications of these features on project planning and engineering design. Those Project components assessed shall include, but are not limited to the port facilities, major watercourse crossings, open pits, underground mine, and equipment pads; and
- iii. Risk assessment and predictions, including proposed management measures.

8.1.6 Hydrological Features and Hydrogeology

8.1.6.1 Baseline Information

- i. Description of hydrology of the LSA (e.g., streams, surface water flows, subsurface water movement, ice formation, and melt patterns);
- ii. Description of relevant hydrological regimes, drainage basins, watershed boundaries and site water balance in the RSA;
- iii. Description of natural fluctuations, variability, and sources of variability in flow rates, including seasonal fluctuations and year-to-year variability, and the interactions between surface water and groundwater flow systems;
- iv. Description of the timing of freeze/thaw cycles, flood zones, ice cover (seasonal patterns and spatial variation), and ice conditions and typical thicknesses, formations and melt patterns;
- v. Description of hydrological characteristics of streams, rivers, and lakes in each watershed of the RSA. Items listed should be considered within the context of the range of climate conditions expected (include both climatic variability such as potential for extreme events, seasonal changes);
- vi. A conceptual and numerical hydrogeological model that discusses the hydrostratigraphy and groundwater flow systems should be presented;
- vii. Characterization of faults and fractures within the mine area, including information about occurrence, hydraulic conductivity testing and interpretation;
- viii. Description of interactions between permafrost, surface water and ground water, and topography, as well as rock fractures and talik zones between different surface/ground waters;
- ix. Description of permafrost/talik distribution, permeability, and hydraulic conductivity of the underlying materials; and
- x. Description of existing groundwater regimes, distribution characteristics and flow paths in the Project area, including any instances of frozen groundwater within/around the identified deposits.

8.1.6.2 Impact Assessment

The Proponent is required to present a comprehensive impact analysis for all Project components and activities, including its shipping activities where applicable, on hydrology and hydrogeology. This analysis should include the following:

- i. Discussion of the potential impact of variable and extreme stream-flows on Project design and planning, including how the design and size of proposed watercrossings would ensure adequate flow capacity to accommodate spring freshet and storm flows (e.g., 1 in 100 year or greater storm events). This should include migration contingencies if the watercrossing does not function as intended;
- ii. Potential impacts to existing watersheds from surface water diversions required by mine site development and other Project components (e.g., waste rock stockpiles);
- iii. Evaluation of stormwater runoff throughout the LSA, with consideration for potential impacts to receiving waters (e.g., flow rates and flow patterns);

- iv. Potential impacts to natural drainage patterns from the construction and operation of proposed mine facilities and Project infrastructure;
- v. Potential impacts on terrestrial and aquatic wildlife habitat resulting from the modification or redirection of natural flows;
- vi. Potential for ice damming and resultant effects on other resources;
- vii. Assessment of each watercrossing and in-stream work, and potential impacts to the navigability and safety of the watercourses;
- viii. Potential changes to permafrost and ground ice conditions as a result of Project activities, including an analysis of the potential for groundwater inflow into the open pit; and
- ix. Potential changes to permafrost/talik distribution, groundwater distribution and flow paths.

8.1.7 Groundwater and Surface Water Quality

8.1.7.1 Baseline Information

- i. Identify all sources of drinking water (surface and groundwater), as well as water used for recreational purposes, within the area of influence of the project;
- ii. Description of the natural hydrogeochemistry of groundwater system (i.e., pH, redox potential, total dissolved solids, isotopic composition, dissolved oxygen, dissolved metals anions and cations);
- iii. Description of the physical and chemical characteristics of groundwater and surface water in the LSA, with discussion of seasonal variations of water flow and quality. Chemical characteristics should include baseline levels of contaminants and should be compared to relevant water standards/guidelines, with identification of those which are naturally elevated;
- iv. Discussion of waters in the LSA of importance to local harvesting activities by surrounding communities;
- v. Description of lake bathymetry and limnology in the LSA;
- vi. Provide an outline of baseline water quality conditions within the watershed and the project area, including a summary of baseline data collected with summary statistics and detection limits identified;
- vii. Provide maps and cross sections of the study area indicating the extent of hydrostratigraphic units, permafrost, and lake taliks. Groundwater levels, potentiometric contours and groundwater flow directions should be included;
- viii. Provide the location and description of all on-site groundwater monitoring wells, including well diameter and screen depth and intercepted aquifer unit. Include all baseline groundwater level data;
- ix. Provide hydraulic conductivity data for hydrogeologic units in the study area;
- x. Provide a detailed groundwater budget; and
- xi. Include a discussion of groundwater interactions with surface water bodies in the area.

8.1.7.2 Impact Assessment

The Proponent is required to present a comprehensive impact analysis for all Project components and activities, including its shipping activities where applicable, on groundwater and surface water quality. This analysis should include the following:

- i. Identify and provide details on the specific contaminants of potential concern to the Project, the project activity to which they are related, the rationale for selecting them and for determining which will be carried forward into the impact assessment. Discussion of contaminants should include figures showing potential sources of contaminants, with approximate distances from surface water and likely path taken in the event of a release. Also provide predictions on how the identified contaminants may interact (synergistically or antagonistically);
- ii. Provide predicted increases in contaminants in groundwater and surface water as a result of the Project, specifically identifying any waterbodies used as drinking water sources, for recreational purposes, that are important to local harvesting, the fish bearing status of identified waterbodies as well as specifically identifying any other fish bearing waterbodies. For any water sources identified as being current or future drinking water sources, compare concentrations of contaminants to relevant territorial drinking standards/guidelines and/or Health Canada Drinking Water Guidelines;
- iii. Potential impacts on groundwater quality and surface water quality in surrounding lakes rivers and streams from surface runoff and seepage, traffic on Project roads, and from dust from road traffic;
- iv. Potential impacts on water quality due to under ice water withdrawals;
- v. Potential impacts on groundwater quality and surface water quality of surrounding lakes, rivers and streams from discharges of Project wastewater treatment plants. A solute transport model based on numerical groundwater flow modelling should be used for ground water quality predictions and appropriate models selected (with rationale) to predict:
 - Water quality from specific sources;
 - Water quality discharged to the environment; and
 - Dispersion, dilution and assimilation of effluent discharged to the environment;
- vi. Potential impacts on groundwater quality and surface water quality from dust, ARD and ML resulting from waste rock stockpiles, ore stockpiles, open pit and underground mine dewatering, construction fills, embankment of roads, and open quarry sites;
- vii. Potential impacts of faults on contaminant transport processes in subsurface and surface water quality;
- viii. Potential impacts on surface water quality of nearby lakes and streams as a result of nutrient input from blasting activities;
- ix. Potential for increases in suspended sediments in waterbodies as a result of construction and maintenance of the mine facilities, all-weather road and associated water crossings;
- x. Potential impacts on surface/ground water quality from runoff at fuel storage facilities, with consideration for possible fuel spills and malfunctions;
- xi. Potential impacts on ground and surface water quality from accidental spills of fuel and chemicals along the ground transportation routes;

- xii. Potential impacts on surface water quality from the deposition of particulate matter resulting from the incomplete combustion of wastes from incineration;
- xiii. Potential impacts on groundwater and surface water quality in relation to other site waste management activities, including: storage, handling, waste deposition in landfills; landfarming of contaminated soil or runoff; the management of historical contaminated material (e.g. previous spills, mishaps, releases); and sewage effluent discharges;
- xiv. Potential impacts on surface water quality from construction and operation of camps;
- xv. Potential impacts of erosion associated with the all-weather road on surface water quality as a result of vegetation removal, cuts/fills and other surface disturbances;
- xvi. Potential impact of ongoing exploration activities on surface water quality from drilling water withdrawals and returns; and
- xvii. Outline proposed surface water quality objectives to maintain within the watershed and project area throughout life of project. Outline anticipated impacts (and cumulative effects) to surface and groundwater quality in the watershed.

8.1.8 Sediment Quality

Based on the proposed facilities and activities, the Proponent should identify water bodies that are potentially impacted by development under various pathways. For each water body, the Proponent should provide details on what baseline data is appropriate and if flow or dispersion modeling is required to assess impacts, then the baseline program should be designed to collect that information.

8.1.8.1 Baseline Information

- i. Description of the physical and chemical characteristics of sediment in the LSA;
- ii. Description of sedimentation rates and dispersion patterns in waterbodies of the LSA; and
- iii. For the sedimentation deposition rates, flow models and sediment dispersion models should be provided which outline the rate and location of sediment deposition where relevant. Provide linkage of this baseline information with the hydrology baseline information.

8.1.8.2 Impact Assessment

The Proponent is required to present a comprehensive impact analysis for all Project components and activities, including its shipping activities where applicable, on sediment quality. This analysis should include the following:

- i. Potential impacts on sediment quality in surrounding lakes and rivers from surface runoff and traffic on Project roads and dust from road traffic and other project sources;
- ii. Discussion of fluvial processes and stability as related to proposed water crossings;
- iii. Potential sedimentation and infill rates of drainage areas that might be impacted by the Project;
- iv. Potential impacts on sediment quality of lakes and rivers from discharges of Project wastewater treatment plants;

- v. Potential impacts on sediment quality from ARD and ML resulting from waste rock stockpiles, ore stockpiles, open pit dewatering, construction fills, embankment of roads, and open quarry sites;
- vi. Potential impacts of erosion associated with the all-weather road on sediment quality as a result of vegetation removal, cuts/fills and other surface disturbances;
- vii. Potential impacts on sediment quality of nearby lakes and streams as a result of nutrient input from blasting activities;
- viii. Potential impacts on sediment from runoff at fuel storage facilities, with consideration for possible fuel spills and malfunctions;
- ix. Potential impacts on sediment quality from the deposition of particulate matter resulting from the incomplete combustion of wastes from incineration;
- x. Potential impacts to sediment quality in relation to other site waste management activities, including: the storage, handling, waste deposition in landfills; landfarming of contaminated soil or runoff; the management of historical contaminated material (e.g., previous spills, mishaps, releases); as well as sewage effluent discharges; and
- xi. Potential impacts on sediment quality from construction and operation of camps.

8.1.9 Freshwater Aquatic Environment

For the purpose of the current Guidelines, freshwater aquatic environment includes aquatic ecology, aquatic biota (including representative fish as defined in the *Fisheries Act (2019)*, benthic invertebrates, and other aquatic organisms) and habitat including fish habitat as defined in the *Fisheries Act*.

8.1.9.1 Baseline Information

- i. Description of the limnology, freshwater biota, presence of fish and other freshwater species, associated habitats, and habitat distribution in the RSA and the LSA with emphasis on species that perform particularly significant ecological functions. This description should be based on the results of baseline information collected from studies, available published information and/or information resulting from community consultations;
- ii. Description of the biological composition of freshwater aquatic environments in the LSA, including: trophic state, periphyton, phytoplankton, zooplankton, benthic invertebrates, fish, and the interactions and relative significance of each trophic level identified in the food chain;
- iii. Description and population distribution of fish species in the LSA with a focus on arctic char, lake trout, and arctic grayling, and other species identified as contributing to an Aboriginal, recreational or commercial fishery, as well as key forage fish for these species, and including baseline information on the abundance and distribution of these species;
- iv. Characterization of habitat requirements for each fish species, including areas used for spawning, rearing, feeding and over-wintering, and any sensitive times for these activities;
- v. Description of existing freshwater habitat in waterbodies and watercourses within the LSA including littoral zones, aquatic and riparian vegetation, lake bottom characteristics, key habitat areas (such as fish overwintering areas, spawning, migration corridors etc.) the estimated productive capacity, etc.;

- vi. An overview of fish species, populations, distributions and ecologies in the RSA, with emphasis on identified fish VECs and species with special designations (Species at Risk listed on Schedule 1 of the federal SARA and species with designations by the COSEWIC) or any populations of any rare or regionally unique fish species and habitats within both the LSA or RSA. This description should include reference to species having significant ecological functions, and/or importance for Inuit life and culture;
- vii. The health of fish VEC indicator species populations and their contaminant loadings; and
- viii. Discussion of any other issues relating to freshwater aquatic species or habitat identified through public consultation.

8.1.9.2 Impact Assessment

The Proponent is required to present a comprehensive impact analysis for all Project components and activities, including its shipping activities, on the freshwater aquatic environment. This analysis should include the following:

- i. Potential impacts to fish, invertebrates, and freshwater habitat including potential impacts to water and sediment quality. Consideration should be given to impacts associated with the following: water withdrawals; discharge; redirection of natural flows; explosives use; nutrient and contaminant inputs; and sewage and grey water effluent discharge;
- ii. Potential direct or indirect effects on fish and invertebrate biota and habitat of both, including aquatic Species at Risk, from any changes to the aquatic or riparian environments, as a result of any in-water works or Project activities in close proximity to waterbodies;
- iii. Potential impacts to fish due to blasting in or near waterbodies, including noise and vibration impacts;
- iv. Potential impacts to fish and fish habitat from any infilling of lake, wetland or stream habitats associated with road construction(s);
- v. Potential impacts to freshwater fish, invertebrates and habitat from planned containment structures (e.g., sediment control structures and fuel containment structures) and potential accidental spills;
- vi. Potential impacts on identified fish habitat critical for spawning, rearing, nursery and feeding, seasonal migration, winter refuges and migration corridors;
- vii. Evaluation of the ability of fish to pass at water crossings along access roads taking into consideration periods of extreme low and extreme high stream flows;
- viii. Potential impacts to fish health, distributions and populations especially taking in to consideration contamination and fugitive dust and potential impact to human health due to consumption of these fish;
- ix. Potential impacts on contamination of traditional foods as a result of bioaccumulation, i.e., food chain uptake through air, water and soil, including a discussion of proposed monitoring;
- x. Discussion of the management measures for minimizing/mitigation of disturbances to fish populations, including measures to reduce the potential for establishment of invasive species in the area;

- xi. Environmental receptivity-including ecological, physical and/or climatic factors that influence exposure to harmful substances; and
- xii. Quantitative assessment of the ecological risks to freshwater VECs from the potential elevated contaminant loadings as a result of the Project.

8.1.10 Vegetation

8.1.10.1 Baseline Information

- i. Description of ecological zones, and other relevant classifications of plant associations and phenologies in the LSA;
- ii. Description of the vegetation/plant types in the LSA, including estimated percentage cover and height for principal species, with a discussion on their particular significant ecological functions and/or their importance to wildlife and humans;
- iii. An overview of vegetation species, populations, distributions and ecologies in the RSA, with emphasis on identified vegetation VECs and species with special designations (Species at Risk listed on Schedule 1 of the federal SARA and species with designations by the COSEWIC). This description should include reference to species having significant ecological functions, and/or importance for Inuit life and culture including TK collected related to plants and plant use in the RSA;
- iv. Details regarding associations between vegetation cover types and soil types in the LSA;
- v. Presentation of available published information and/or information resulting from TK studies regarding identified VECs,
- vi. Discussion of the health status of plant species or communities in the LSA, including baseline information on contaminant levels (including metals) in representative species consumed by wildlife and/or humans, either directly (humans eating plants) or indirectly (humans consuming wildlife), and other vegetation that reflects sensitivity to contaminants or environmental pathways of exposure and biomagnification; and
- vii. Any other issues related to vegetation as identified through public consultation.

8.1.10.2 Impact Assessment

The Proponent is required to present a comprehensive impact analysis for all Project components and activities, including its ground and marine based transportation activities, on vegetation. This analysis should include the following:

- i. Potential impacts to abundance and diversity of vegetation due to Project activities;
- ii. Potential impacts to specific vegetation coverage and species composition from construction, operation, and reclamation activities in the Project area;
- iii. Assessment of the potential loss, disturbance, and/or changes to vegetation abundance, diversity, and forage quality as a result of Project components and activities, including potential effects from airborne fugitive dust fall, airborne contaminants from emission sources, and changes to water quality and quantity, permafrost, or snow accumulation;
- iv. Potential impacts on vegetation abundance and diversity from the transfer/introduction of invasive or exotic species into the LSA via Project equipment and vehicles, including aircraft and marine vessels;

- v. Potential impacts on vegetation quality due to soil erosion, structural soil changes, soil contamination, and fugitive dust and gaseous air emissions from mining, processing, and waste management activities;
- vi. Discussion of proposed vegetation monitoring, specifically contaminant levels in species directly consumed by wildlife (e.g., lichen) and/or humans (e.g., Labrador tea, blueberries) and/or indirectly consumed through food consumption (*i.e.*, caribou);
- vii. Discussion of the management measures for minimizing/mitigation of disturbances to plant associations, including progressive reclamation/re-vegetation plans for disturbed areas, and measures to reduce the potential for establishment of invasive species in the area;
- viii. Potential impacts on contamination of traditional foods as a result of bioaccumulation, *i.e.*, food chain uptake through air, water and soil;
- ix. Potential impact from the loss or alteration of habitat (*i.e.*, vegetation) due to pollutants and noise and its effects on wildlife, wildlife calving grounds and marine habitat; and
- x. Discuss the potential of invasive vegetative species (weedy species) from shipping along the shoreline and from transportation along the all-weather road.

8.1.11 Terrestrial Wildlife and Wildlife Habitat

For the purpose of the current Guidelines, terrestrial wildlife and wildlife habitat includes representative terrestrial mammals including: caribou (including habitat, migration, and behaviour), muskoxen, wolverine, Polar Bears, wolves and less conspicuous species that may be maximally exposed to contaminants; and wildlife migration routes and crossings.

8.1.11.1 Baseline Information

- i. Description of wildlife populations, distributions, and ecologies in the RSA, with emphasis on identified wildlife VECs and species with special designations (Species at Risk listed on Schedule 1 of the federal SARA and species with designations by the COSEWIC). This description should include reference to species having significant ecological functions, and/or of importance for Inuit life and culture;
- ii. Description of biodiversity within the RSA, and associated food chain relationships among terrestrial wildlife species;
- iii. Presentation of available published information and/or information resulting from TK studies regarding identified VECs, including: the relative seasonal and annual trends in abundance and distributions; the estimated productive capacity; migratory patterns and associated corridors/routes; critical habitats on or in LSA and RSA; and sensitive periods;
- iv. Description of the population health of identified VECs, with a discussion of contaminant loadings in representative species important to Inuit as a food source, such as caribou;
- v. Details regarding habitats within the LSA which are important for forage, shelter and reproduction of wildlife VECs, including terrestrial and aquatic habitats (e.g., sea ice, freshwater and marine waters);
- vi. Identification of key wildlife habitats in the LSA and RSA as applicable, including: National Parks, Critical Wildlife Areas, Territorial Parks and other areas with legislated protection; eskers; caribou calving and nursing areas; denning sites; staging areas; and special locations as salt licks, insect relief habitats, and areas used by females and their

- young. Related discussion should also include migration routes, water course crossings, travel corridors and areas important for Inuit harvesting;
- vii. Identification of habitats of any rare or sensitive species, such as Species at Risk, or those with similar designations or federal and territorial status;
 - viii. Description of the migratory patterns and routes of terrestrial wildlife VECs and the corresponding periods when these routes would be affected by the Project;
 - ix. Discussion of the relative health of VEC populations, including contaminant loading in representative wildlife VEC species (i.e., caribou);
 - x. Description of the distribution and population levels of caribou in the RSA and LSA. Consideration should be given to the cyclic nature of caribou as well as the shifts in annual caribou ranges over time, with baseline information collection covering appropriate temporal and spatial scales for an accurate understanding of current population health;
 - xi. Details regarding available information on potential impacts to wildlife associated with noise, vibrations, and dust and dust deposition from relevant scientific research and TK; and
 - xii. Discussion of other pertinent issues as identified through public consultation.

8.1.11.2 *Impact Assessment*

The Proponent is required to present a comprehensive impact analysis for all Project components and activities, including its shipping activities, on terrestrial wildlife and wildlife habitat. This analysis should include the following:

- i. Potential general impacts on terrestrial wildlife in the LSA, including: interference with migratory routes; alienation from important habitat (e.g., denning sites, calving and post-calving areas); habitat fragmentation and general disturbance or disruption caused by Project activities;
- ii. Potential impacts on population size, abundance, distribution, and behaviour of wildlife VECs from:
 - Direct and indirect loss of habitat from the presence of and use of infrastructure, the conduct of project activities and associated sensory disturbances;
 - Direct and indirect impacts from potential degraded water quality and ground contamination, as well as airborne contaminants resulting from project facilities and associated activities;
 - Direct and indirect impacts from potential ice-breaking (prior to spring break-up or following fall freeze-up) associated with shipping activities, and ice management at the port/dock facility;
 - Direct and indirect impacts from climate change; and
 - Where relevant, the Proponent shall take into account the alteration of normal behaviour or patterns and provide any associated outcomes for overall energy balance for the relevant VEC;
- iii. Potential impacts on wildlife from ground traffic and air traffic disturbance, particularly low-level flights (i.e., lower than 610 metres) during critical periods (caribou calving and post-calving). For this impact assessment, a delineated flight impact zone could be useful

in determining the potential impact of flights on wildlife, with a particular focus on critical life cycle periods and planned air traffic volume and routes;

- iv. Potential impacts on wildlife from injury or mortality caused by Project activities, particularly the use of the all-weather road, mine hauling roads and other access roads, as well as intentional killing of wildlife to defend human life or property by mine personnel;
- v. Potential impacts on wildlife from increased hunting pressure resulting from improved access due to Project infrastructure;
- vi. Potential impacts of noise and vibration on wildlife from drilling, blasting and other activities as results of Project construction and operation;
- vii. Assessment of the potential for Project activities to act as an attractant to wildlife species, and associated effect/changes to behaviour and condition;
- viii. Evaluation of the potential for contaminants to be released into the environment as a result of the Project and to be taken up by VEC species;
- ix. Potential impacts of contamination to sources of traditional food (including those trapped, fished, hunted, harvested or grown for subsistence or medicinal purposes) as a result of bioaccumulation (i.e., food chain uptake through air, water and soil) as well as any proposed monitoring methods to track these potential impacts;
- x. List of all potential contaminants and a determination of whether possible uptake of these contaminants into country foods will result from project activities.
- xi. Potential impacts from the loss or alteration of habitat (i.e., vegetation) due to pollutants and noise and any ancillary effects; and
- xii. Evaluation of the relative health and potential for chemical toxicity for inherently sensitive wildlife species based on an analysis of exposure pathways and demographic parameters.

8.1.12 Birds and Bird Habitat

For the purpose of the current Guidelines, discussion relating to birds shall include raptors, migratory birds, marine birds and the associated habitat of each.

8.1.12.1 Baseline Information

- i. An overview of bird species, populations, distributions, and ecologies in the RSA, with emphasis on identified bird VECs and species with special designations (Species at Risk listed on Schedule 1 of the federal SARA and species with designations by the COSEWIC). This description should include reference to species having significant ecological functions, and/or importance for Inuit life and culture;
- ii. Description of current habitat use by VECs, including the use of Migratory Bird Sanctuaries, Key Migratory Bird Sites, Territorial Parks and other important habitats (e.g., breeding, nesting sites, staging areas) in the RSA and along the proposed shipping routes;
- iii. Description of the relative seasonal/annual abundances, distributions and trends in range or habitat use, movements and population status of bird VECs, including but not limited to population abundance, reproductive success, mortality rates, density, diversity, etc.;
- iv. Description of migratory patterns and routes of VECs potentially impacted by the Project, with a discussion of corresponding sensitive periods; and

- v. Identification of key migratory bird sites along the shipping route, including those which could potentially be affected by marine spills as a result of current and/or wind patterns.

8.1.12.2 *Impact Assessment*

The Proponent is required to present a comprehensive impact analysis for all Project components and activities, including its shipping activities, on birds. This analysis should include the following:

- i. Description of the potential loss, alteration, or isolation of habitat (e.g., staging and nesting habitats) as a result of the Project development. Special consideration should be given to Species at Risk listed on Schedule 1 of the federal SARA, species with designations by the COSEWIC, species having significant ecological functions or importance for Inuit life and culture;
- ii. Potential disruption or alteration of migration routes due to Project phases or activities;
- iii. Where relevant, the Proponent shall account for alteration of normal behaviour or patterns and provide any associated outcomes for overall energy balance for the relevant VEC;
- iv. Potential impacts on birds and bird habitat use from air contamination, vegetation contamination, ground contaminants or degraded water quality;
- v. Potential disturbances to birds from noise and vibrations as a result of blasting, and land and marine transportation;
- vi. Potential impact from pre-determined Flight Impact Zones, and potential for collision with aircraft;
- vii. Potential for Project facilities to attract wildlife such as polar bear, brown and grizzly bear, wolverine, foxes, ravens and gulls that may prey upon migratory birds and resulting impacts on the migratory bird populations;
- viii. Potential attraction of birds and other scavengers/predators by domestic waste at camp sites;
- ix. Potential attraction of birds to Project facilities and infrastructure due to attractants, or for roosting and nesting sites;
- x. Potential for bird mortality due to collisions with tall structures, overhead wires or guy wires;
- xi. Potential effects of shipping on coastal and marine birds and habitat, as well as potential disturbance on key migratory bird habitat areas and sanctuaries in proximity to shipping routes in the NSA;
- xii. Incidental spills, malfunctions and other accidents associated with shipping operations and potential impacts to marine birds;
- xiii. Potential interactions, accidental injuries and mortality of marine birds directly or indirectly from proposed shipping (open water and potential ice breaking during break-up in the spring and freeze-up in the fall) activities, in particular those marine birds which congregate in areas where the shipping routes would pass through;
- xiv. Potential direct and indirect effects on marine bird behaviour, distribution, abundance, migration patterns, species health and reproduction from marine shipping;

- xv. Evaluation of the potential for contaminants to be released to the environment from marine shipping and taken up by marine bird VECs as a result of the Project;
- xvi. Assessment of potential cumulative effects on marine bird VECs resulting from escalated marine traffic in the RSA over the mining lifecycle, including the potentially extended minimum operation period. Consideration should be given to the possible significant increase of marine vessel traffic along shipping routes;
- xvii. Potential impacts of contaminant bioaccumulation via food chain uptake through air, water, and soil, including specific impacts to traditional food sources including potential monitoring methods to track the progress of this potential impact; and
- xviii. Potential impacts from the loss or alteration of habitat (i.e., vegetation) due to pollutants and noise and its effects on bird and bird habitat.

8.1.13 Marine Environment

For the purposes of the current Guidelines, the marine environment shall include marine ecology, marine water and sediment quality, and marine biota including fish, Species at Risk, and marine habitat.

8.1.13.1 Baseline Information

- i. Description of marine physical processes and currents including the costal environment, biological diversity and composition, and associated interactions in the LSA and RSA, including the proposed shipping route(s) within the NSA;
- ii. Data on seasonal ice cover including timing of ice freeze-up and break-up for the proposed shipping routes;
- iii. Presentation of available bathymetric information along the proposed shipping route(s);
- iv. Identification of sensitive habitat areas for marine fish, anadromous fish, and marine mammals along the shipping route(s); and
- v. Presentation of TK collected related to coastal areas and ice conditions.

8.1.13.2 Impact Assessment

The Proponent is required to present an impact analysis that gives consideration to the potential for Project shipping activities to impact the marine environment. This analysis shall include the following:

- i. Potential risks and impacts to the marine ecosystem through the introduction of exotic species, including pathogens, through seasonal shipping;
- ii. Potential impacts on marine water quality from accidental spills of fuel and chemicals along the shipping routes and from the accidental grounding/stranding of marine vessels along the shipping routes;
- iii. Potential impacts on marine water quality and sediment quality from discharges of Project wastewater treatment plants. A solute transport model based on numerical flow modelling should be used for water quality predictions and appropriate models selected, with rationale, to predict:
 - Water quality discharged to the environment; and

- Dispersion, dilution and assimilation of effluent discharged to the environment;
- iv. Assess the effects of Project activities (i.e., effluent discharge, accommodation barge, loading docks, etc.) on fish and fish habitat;
- v. Potential impacts of wake effects from shipping on the shoreline stability and sensitive fish or marine mammal habitat (i.e., coastal wetlands);
- vi. Potential impacts on sedimentation patterns and subsequent impacts on subsea permafrost in the nearshore region;
- vii. Potential impacts of sedimentation from propeller wash on water quality, fish and fish habitat and, benthic invertebrates;
- viii. Potential impacts of ballast water discharge on water quality, fish and fish habitat, benthic invertebrates including cumulative impacts over the life of the Project;
- ix. Potential impact on marine environment and bio-accumulation in marine food chains, in particular on benthic organisms, from antifouling toxins (e.g. tributyltin) leaching from marine vessels; and
- x. Potential impacts of climate change and sea level change on Project elements.

8.1.14 Marine Wildlife

8.1.14.1 Baseline Information

- i. Description of marine wildlife populations, distributions, and ecologies in the RSA, with emphasis on identified marine wildlife VECs and species with special designations (Species at Risk listed on Schedule 1 of the federal SARA and species with designations by the COSEWIC). This description should include reference to species having significant ecological functions, and/or of importance for Inuit life and culture;
- ii. Characterization of marine wildlife habitat in the LSA, including habitat used by VECs for feeding, calving, nursing, over-wintering, and other critical activities; and
- iii. Identification of marine wildlife species, historical and current habitats, distribution, seasonal migration patterns, critical areas (i.e., feeding, calving, over wintering, etc.), and potential interactions with shipping activities.

8.1.14.2 Impact Assessment

The Proponent is required to present an impact analysis that gives consideration to the potential for Project shipping activities to impact the marine wildlife. The Proponent shall, where any impact to marine wildlife is identified, indicate the cultural or practical importance of that species to northerners. In addition, the analysis shall include the following:

- i. Potential loss to or deterioration in the habitat of marine wildlife VECs due to shipping route(s). Special consideration should be given to Species at Risk listed on Schedule 1 of the federal SARA, species with designations by the COSEWIC, species having significant ecological functions, and/or of importance for Inuit life and culture;
- ii. Potential direct and indirect impacts to marine wildlife, marine fish and marine habitat from marine shipping activities including increased noise levels;
- iii. Potential spills, malfunctions and other accidents associated with shipping operations and any resulting impacts to marine wildlife, marine habitat and marine fish;

- iv. Risk assessment of the potential introduction of non-native aquatic species due to ballast water discharge, ship wash and hull fouling;
- v. Potential interactions, accidental injuries and mortality of marine wildlife directly or indirectly from proposed shipping (open water and potential ice breaking during break-up in the spring and following freeze-up in the fall) activities, in particular those marine wildlife which congregate in areas where the shipping routes would pass through;
- vi. Potential direct and indirect effects on marine wildlife behaviour, distribution, abundance, migration patterns, species health and reproduction from marine shipping activities;
- vii. Evaluation of the potential for contaminants to be released to the environment and taken up by VECs as a result of the Project; and
- viii. Assessment of potential residual and cumulative effects on marine wildlife VECs resulting from escalated marine traffic in the RSA over the mining lifecycle (and including the potentially extended mine operation period). Consideration should be given to the possible significant increase of marine vessel traffic along shipping routes.

8.2 Socio-Economic Environment and Impact Assessment

The assessment of potential adverse and beneficial impacts on the socio-economic environment such as well-being, culture, and traditional land and/or aquatic uses (such as hunting, harvesting, gathering, and cultural expression and connection), archaeology, food security, economic, employment, ~~and training~~, ~~and contracting~~ opportunities shall be undertaken with a level of effort and expertise at least equivalent to that applied to the assessment of the ecosystemic values. The Proponent shall present relevant information on the functioning and stability of the socio-economic environment in the Regional Study Area (see [Section 7.3](#)) to serve as a baseline against which the potential impacts of the proposed project can be measured, with a corresponding impact assessment covering all project phases of development [site preparation/pre-construction, construction, operations (including reduced operation), maintenance, any potential modifications, temporary closure (care and maintenance), final closure (decommission and reclamation) and post-closure]. The Proponent shall also describe the components of the socio-economic environment and the processes affecting the components as they exist without the proposed project (historical background and current baseline conditions). This will serve as a baseline against which the potential changes and impacts of the proposed project can be measured and will also justify the Proponent's selection of valued socio-economic components and indicators.

The Proponent shall provide a clear rationale for its selection of communities, the public engagement carried out, and relevant reference studies and reports from which baseline data is collected (see [Section 9.0 – Public Engagement](#)). The Proponent shall describe the interactions between the socio-economic and ecosystemic environments, including the roles of the land and wage-based economies, and the nature of the mixed economy of the North. The Proponent should provide sufficient detail to demonstrate a proper understanding of the structure and functioning of the potentially affected communities that enables the Proponent to identify the potential of the proposed project to affect these communities, whether positively or negatively, and to ensure that any socio-economic mitigation measures put in place by the Proponent have a reasonable likelihood of attaining their objectives.

Whenever relevant and appropriate, data shall be distinguished by gender, age, or other community relevant factors such as hunters, trappers, harvester etc. to support a Gender Based Analysis + assessment. Socio-economic indicators should be used to present baseline information and subsequently measure impacts related to the proposed project. The Impact Statement shall clearly identify and justify the indicators selected and the indicators chosen must be adequate to address all types of foreseeable impacts, including cumulative and residual impacts. In addition, the Proponent should include predictions regarding when potential impacts on each relevant valued socio-economic components could reasonably be expected. Finally, the Proponent is expected to clearly identify limitations and knowledge gaps encountered in its efforts to collect the required information.

8.2.1 Economic Development and Opportunities

8.2.1.1 Baseline Information

- i. The traditional economy, current economic structure including the interaction between the wage and traditional economy, development trends in the Project RSA and variability in potential impacted communities as well as in Nunavut as a whole;
- ii. The economic development levels in the Project RSA comparing to other regions in Nunavut, advantages and constraints of economy development;
- iii. The roles the exploitation of renewable resources (e.g., subsistence and commercial hunting and fishing) play in economic terms and its significance for the local economy;
- iv. Community and resident self-reliance; and
- v. Overview of Nunavut's Real Gross Domestic Product, rate of Gross Domestic Product (GDP) growth, Consumer Price Index, import/export and trade balance of goods, personal savings rate, and business investment.

8.2.1.2 Impact Assessment

- i. Potential impact on the local economy at the regional and community level as well as the implications of the Project on economic diversity;
- ii. Potential impact on the traditional economic activities including hunting, fishing and sport hunting/guiding, etc.;
- iii. Potential impacts related to accessibility and removal of barriers for traveling, fishing, hunting/trapping and other activities by local communities as a result of construction and operation of the all-weather road;
- iv. Potential impacts on local and regional economy due to temporary closure and final closure; and
- v. Provide a discussion on the effects that the Project may have on Nunavut's Real Gross Domestic Product, rate of GDP growth, Consumer Price Index, import/export and trade balance of goods, personal savings rate, and business investment.

8.2.2 Employment

8.2.2.1 Baseline Information

- i. The labour supply statistics in terms of relative genders, ages and other demographic categories;
- ii. Assessment of the current local and national labour force available to satisfy the needs of the Project development at each phase, identifying gaps between this availability and project needs by education level and other categories that may help to identify barriers and needs, including a discussion of the availability of Canadian labour and the potential need for foreign employees to address any gap in meeting project labour needs;
- iii. Local household incomes, income sources, and compositions of income within the Project RSA;
- iv. Provide sector specific breakdown of employment within the NSA and as such may also pertain to Yellowknife, NT;
- v. Existing local employment opportunities and labour supply status; and
- vi. Discussion of the requirements for employment (e.g., education levels, criminal records, drug and alcohol policies, language abilities), and the potentials of needs to be met by local recruitment, as well as the extent to which the skills of the available workers match job requirements.

8.2.2.2 Impact Assessment

- i. Assessment of the potential for development of the local labour force;
- ii. Discussion of culturally-sensitive workforce management practices that will meet both the Project's immediate labour force needs as well as the region's longer-term economic development needs;
- iii. Discussion of potential changes in the traditional activities and household function due to wage employment associated with the Project;
- iv. Evaluation of the effects of competition for labour between the Project and existing businesses, institutions, and traditional activities, and
- v. Potential impacts on employment due to situations of Project temporary and final closure.

8.2.2.3 Topics of Discussion

- i. Evaluation of the possible effect of changes in income earnings on patterns of savings expenditure and consumption values, especially with changes to public housing rental requirements due to changes of employment status.

8.2.3 Education and Training

8.2.3.1 Baseline Information

- i. Overview of the existing education system (early childhood through post-secondary);
- ii. Available training programs for adults and youth through the existing education system;
- iii. Local education infrastructure, capacity, funding resources, and administration system; and

- iv. Education and skill levels of the residents in the Project RSA, and experience of the local labour force in different demographic categories based on available data.

8.2.3.2 Impact Assessment

- i. Assessment of Project impacts to the education system and how it would influence training programs. Include an evaluation on how the Project might affect attendance, retaining teachers, class sizes, and other components of the education system;
- ii. Provide an assessment on the demands that might be placed on the educational infrastructure, capacity, funding resources and administration system;
- iii. Requirements for education levels, skills and experiences of labour force from the Project in short, medium term and foreseeable future, taking account the vision of expansion for the Project lifespan, and regional economy development;
- iv. Discussion of potential need of local labour force training to meet the needs of the Project. The types of training can be those specifically required by the Project, or others geared toward universally applicable skills that improve workers' opportunities in other sectors of the local economy. This assessment shall include predicted training resources and predicted resources needed to meet the designed training programs, if applicable;
- v. Evaluation of training programs planned by the Proponent, the associated challenges and likelihood of success of trainees to satisfy the Project needs and regional economy development with consideration of cultural and language barrier;
- vi. Discussion of the potential for longer term community capacity building programs, if any have been planned or will be planned and are anticipated to be implemented throughout the Project's lifetime, regarding how mine training plans can enhance the transferability of skills after the mine closure (e.g., management and HR skills, computer skills, heavy equipment experience, finance skills, etc.); and
- vii. Discussion of other possible solutions to fill up the gap between requirements of project needs, and education level and qualifications of local labour force.

8.2.4 Contracting and Business Opportunities

8.2.4.1 Baseline Information

- i. Provide the most up-to-date statistics and data available as it relates to contracting and business opportunities from socio-economic studies of communities in the Project RSA;
- ii. Estimates of goods supplied to the Project, including country food supply for Inuit workers at the mine, procurement, services contracting, and other business opportunities in the Project RSA that may result from the Project; and
- iii. The economy structure and characteristics of the local and regional economies, existing business types, scales of the different sectors of economy, and potential capacities to meet the needs of the Project.

8.2.4.2 Impact Assessment

- i. Assessment of economic effects, positive and negative, stemming from the Project's contracting and business opportunities through the lifespan of the Project;

- ii. Opportunities for local, regional, and territorial businesses to supply goods and services both directly to the Project, and indirectly to meet the demand created by the expenditure of new income by employment in the Project;
- iii. Assessment of the Project effects on other local and regional economic sectors, in particular the competition to other business' needs due to limited capacity of local business;
- iv. Assessment of the contributions made to public, communities and Inuit from the Project;
- v. Assessment of the of project-related procurement, and potential capacity to meet Project needs;
- vi. Discussion on barriers to local business capacity building;
- vii. Assessment of existing country food supply sources from the Project region and Nunavut, and opportunities to supply country foods for Inuit workers at the Project;
- viii. Assessment of opportunities for local communities to diversify their economic sources and to supply new goods and services to meet the need generated by the Project; and
- ix. Potential impacts on local businesses and services due to temporary closure and final closure.

8.2.5 Population Demographics

8.2.5.1 Baseline Information

- i. Description of regional and local community populations, demographics structure, composition, characteristics, and population trends; and
- ii. Discussion of observed variations in education levels, dietary habits, religious characteristics and other social aspects in different demographic categories in the RSA.

8.2.5.2 Impact Assessment

- i. Potential for project-induced demographic changes in population, migration (including immigration from outside of Nunavut), population re-distribution or movement of Nunavummiut between communities and the effects of those changes, and further details on potential interactions between local residents and non-residents;
- ii. Potential effects of fly-in/fly-out employment on population demographics; and,
- iii. Potential effects from various Project phases, including unemployment as a result of temporary suspension of operations or mine closure.

8.2.6 Traditional Activity and Knowledge

For the purpose of the current Guidelines, traditional activity and traditional knowledge shall consider land use, food security, language, cultural activities and commercial harvesting.

8.2.6.1 Baseline Information

- i. Description of cultural, ethnic, religious, and language characteristics and diversities in the RSA;
- ii. Local and regional economy characteristics in term of relation to traditional land use activities and wage incomes;

- iii. Descriptions of the significance of, availability of, and level of dependence on, traditional foods as major nutritional sources by local residents within the Project RSA; including:
 - What country foods are consumed, or are expected to be consumed in the Project RSA, which parts of country foods are consumed, and their consumption frequency; and
 - Descriptions, including maps, of traditional and current hunting ranges and patterns in the LSA;
- iv. Describe the use of caribou as a subsistence species, including harvesting, sustainable use of caribou, and the cultural and social activities associated therein, to specifically include hunting, community feasts, and the commissioning of arts and crafts; and
- v. Details regarding wildlife and vegetative species that are culturally valuable to northerners.

8.2.6.2 Impact Assessment

- i. Potential effects of the Project on the accessibility of caribou and other terrestrial wildlife species to harvesters where such may be affected by reductions in habitat and herd sizes and/or expected changes to migration patterns or human travel routings. The risks to present and future generations of harvesters should also be considered;
- ii. Potential impacts related to accessibility to areas for hunting, fishing, marine harvesting, traveling, recreational and religious activities as a result of the Project development, including a consideration of individual components such as all-weather roads and marine shipping;
- iii. Potential effects on sustainable resource use, such as country food availability and accessibility of carving stone deposits, taking into account the CEA throughout the entire lifespan of the Project;
- iv. Potential impacts to marine wildlife of cultural or practical importance to northerners;
- v. Potential impacts to Aboriginal fisheries species, including fish of cultural or practical importance to northerners;
- vi. Potential impacts to the ongoing productivity of local or regional commercial, recreational or Aboriginal fisheries;
- vii. Potential impacts to vegetation of cultural or practical value to northerners;
- viii. Description on how the Proponent will comply with the *Official Languages Act*; and
- ix. Potential impacts that the contamination of traditional food sources, including those trapped, fished, hunted, harvested, or grown for subsistence or medicinal purposes (i.e., berries, etc.), may have on individuals, families, communities, and the ability of Inuit to engage in traditional lifestyles.

8.2.7 Non-traditional Land Use and Resource Use

8.2.7.1 Baseline Information

- i. Description of known non-traditional land and resource use including protected areas, visual and aesthetic resources;
- ii. Provide an overview of local and regional land use activities in the LSA as well as areas potentially impacted by shipping activities;

- iii. Description of current and traditional land use areas and the importance of those areas to Inuit culture and social well-being;
- iv. Description of known land use activities and relation to the local economy, self-reliance, food supplies and livelihood;
- v. Description of identified and anticipated overlapping zones and/or areas where the land use activities co-exist or interact with Project components and activities; and
- vi. Description of the current tourism activities and recreational use occurring in the Project region.

8.2.7.2 Impact Assessment

- i. Description of impacts to known non-traditional land and resource use including protected areas, visual and aesthetic resources;
- ii. Discussion of anticipated interactions between project development and land use activities by local residents in the Project RSA, in particular at the mine site, all-weather road and shipping routes; and
- iii. Describe the potential impact on the tourism industry from the Project's development which may impair the wilderness experience of tourism in the Project RSA.

8.2.8 Heritage Resources

8.2.8.1 Baseline Information

- i. Summary description of known archaeological/paleontological, burial, cultural and historic, sacred, and spiritual sites within the LSA based on TK and scientific baseline studies. Each site shall be described on a map that complies with relevant data licensing agreements. Large-scale maps should be sent to the Government of Nunavut, Department of Culture and Heritage (GN-CH) upon request to assist in its review;
- ii. Description of regulatory requirements and procedures for recovery and removal of artefacts and/or fossils in areas of proposed development; and
- iii. Description of the relationship between the cultural sites and social lives of local communities in the LSA.

8.2.8.2 Impact Assessment

- i. Potential impacts to archaeological and paleontological resources (e.g., burial sites, sacred sites), and other cultural sites within the LSA resulting from development of Project infrastructure including all-weather roads, mine sites, laydown areas, airstrips, etc.;
- ii. Potential impacts on archaeological and paleontological resources from increased activity in the area associated with the mine including ground transportation and ongoing exploration as well as non-mine related activities;
- iii. Potential impacts to archaeological and paleontological resources as a result of borrow pit and quarry construction and operation, as well as construction and use of access roads. Discussion of how considerations for potential impacts have been incorporated in the road routing and design should also be presented; and
- iv. Potential impacts on cultural well-being, religious and spiritual activities which are related to cultural and historic, sacred, and spiritual sites.

8.2.9 Health and Wellbeing

For the purpose of the current Guidelines, discussions relating to individual and community wellness shall include family and community cohesion, as well as other indicators as may be selected by the Proponent.

8.2.9.1 Baseline Information

- i. Description of the current individual and family well-being including a discussion on households, family and community stability;
- ii. Description of household social structures within the RSA, and where possible, the prevalent representative household social structure, including: the prevalent composition (family/kin-relations co-existing, generations in the household), the gender roles, the prevalent division of household labour based upon existing gender roles, the dominant consumption patterns, access to credit, and how resources are shared/divided within the household as well as how decisions are made in the household;
- iii. Description of the current status of human health in the RSA, including mental, and psychological health, well-being, previous history and exposure, and identify vulnerable sub-groups where applicable; and
- iv. Description of nutritional requirements of residents in the RSA along with quantitative information on the diet habits of residents, including consideration of details such as the seasonal, gender and age-related consumption of country foods.

8.2.9.2 Impact Assessment

- i. Description of potential impacts to individual and family well-being from the Project;
- ii. Potential impacts to household social structure from the Project (e.g., one or two family members working at the mine site);
- iii. Potential effects on lifestyle, including the effects of a major employment base away from the communities;
- iv. Potential effects on community and family stabilities, and culture integrity due to potential demographic changes;
- v. Potential effects on individual, family and community health and wellbeing from workplace and community cross-cultural tension, conflict, and/or racism.
- vi. Potential impacts on human mental and physical health and well-being within the RSA resulting from potential indirect effects of the Project. This discussion should give consideration to gambling, substance abuse, family violence, sexually transmitted infections and other communicable diseases;
- vii. Potential impact on community, family and individual well-being as a result of increased access to alcohol and other controlled substances resulting from increased incomes as well as the potential movement of these substances through the Project site or via Project-related activities (i.e., stopovers or layovers);
- viii. Potential impacts on human health associated with traditional lifestyles where large amounts of country foods are consumed, considering the bioaccumulation and take-up of contaminants associated with changes to the level of contaminants loadings in country

foods (i.e., terrestrial and marine wildlife, fish, birds, and vegetation consumed by humans); and

- ix. Potential impacts to community well-being in the RSA.

8.2.9.3 Topics for Discussion

- i. Description of current substance abuse issues including trends relating to the importation of drugs and alcohol, crime and violence, and other relevant social factors;
- ii. Overview of the current financial management programs available in the potentially affected communities;
- iii. Description of the current community well-being, including information about the capacity, availability, and affordability, where relevant, of local services and infrastructure (i.e. housing, training, education, day care services, health care, etc.);
- iv. Description of local and regional community and cultural values and initiatives that promote and support regional and family health and cohesion.
- v. Description of increased pressure on existing social, institutional, and community services, facilities and services, and infrastructure;
- vi. Potential impacts to community safety and security, including indirect impacts on frequency and types of crime incidents, with consideration for a potential influx of Project personnel into local communities during the life of the Project;
- vii. Identify and discuss potential impacts of the Project on accident rates, alcohol/prohibited substance consumption and import/export; and
- viii. Description of barriers to current financial management programs and any incentives that would be provided by the Proponent for healthy financial management.

8.2.10 Community Infrastructure and Public Services

8.2.10.1 Baseline Information

- i. Description of community, cultural and recreation programs;
- ii. Description of existing transportation modes and travel routes/roads;
- iii. Discussion of costs to build infrastructure, transportation costs, and effect on public services;
- iv. Description of existing communication systems and services and utilities;
- v. Description of community & regional waste management systemsDescription of current conditions of local supply and demand of housing, including private, public and rental housing and their costs, other infrastructure, and related capacity within the RSA;
- vi. Description of existing public services and associated community facilities in the RSA, including law enforcement, health care, emergency response, dependency assistance, welfare utilities, temporary accommodation, and food services; and
- vii. Description of existing outpost camps and other facilities outside of municipal boundaries which facilitate harvesting and recreation activities in the LSA, particularly within the proximity of the Project.

8.2.10.2 *Impact Assessment*

- i. Discussion of demand for community infrastructure and public services from the Project directly and indirectly;
- ii. Assessment of the effects on services and/or infrastructure (including housing) in public and private sectors, due to the potential use by the Project directly or indirectly, including those caused by Project-induced demographic changes, noting that where the assessment determines an impact, the Proponent should outline proposed mitigation measures.
- iii. An assessment of potential increased demand on the local and regional health care systems, including the standard medical system, emergency response and emergency medical care, medevac services, and challenges raised by any increased demand;
- iv. Discussion of building new and updating existing structures including weather shields and outposts beyond the boundary of communities and along hunting/traveling routes, and/or at hunting grounds which may facilitate local hunting activities/traveling in Project areas;
- v. Assessment of incremental costs imposed by the needs from the Project directly or in directly on public infrastructure, services, including those caused by Project-induced demographic changes; and
- vi. A discussion of community access to Project infrastructure upon closure, including proposed road options.

8.2.10.3 *Topics for Discussion*

- i. A discussion of the potential to bring in freight for communities by return shipping, and likelihood to share shipping costs with local communities;
- ii. Description of the extent and current capacity of the local transportation systems and associated infrastructure;
- iii. Assessment of public health and environmental health needs and implications to the Proponent's community initiatives; and
- iv. Potential impact on availability and adequacy of existing health infrastructure and services including medical, dental, vision, social, mental (including addictions), environmental health officers, social workers, registered nurses, medical director; access to medical travel and interventions.

8.2.11 Human Health and Safety

8.2.11.1 *Baseline Information*

- i. Description of human exposure to current environmental contaminants in the RSA; and
- ii. Discussion relating to the local health statistics when compared with other parts of Nunavut and Canada as appropriate.

8.2.11.2 *Impact Assessment*

- i. Discussion of the standards, guidelines and regulations that the Project will incorporate during construction and operations, at various Project sites to minimize the impacts and protect workers' health;

- ii. Assessment of the health, safety and security of workers at the job sites taking into account different Project phases and locations (e.g., explosive manufacturing plant, drilling and blasting operation, and heavy equipment operations);
- iii. Potential impacts on human health from air contamination, fugitive dusts resulting from air and ground traffic, potential impacts to potable water quality, and exposure to escalated noise and extreme weather conditions;
- iv. Potential sources and characteristics of any conventional risks to workers or the public during all phases of the Project;
- v. Potential effects on physical health such as mortality, morbidity, injuries, accidents, effects on sensitive sub-populations (i.e., asthma sufferers), physical hazards associated with construction, operation and closure phases; and
- vi. Potential impacts of workplace discipline and cultural conflicts among Nunavummiut, Northwest Territories, and Southern workers, including those issues which may be related to or exacerbated by language barriers between employees.

8.2.11.3 *Topics for Discussion*

- i. Description of the existing infrastructure and health services available within the RSA and the potential impact on the quality of health services, including the resources and capacity to monitor and respond to increased health hazards.

8.3 Human Health and Environmental Risk Assessment

The Proponent shall consider the following when determining the need for and level of detail of a Human Health and Environmental Risk Assessment for a proposed project **review Health Canada's Guidance Documents for Evaluating Human Health Impacts in Environmental Assessment about the following topics:**

- Spatial and temporal extent of the predicted contamination;
- The types and quantities of contaminants predicted to be released (the more toxic and/or the larger the quantity of the chemical, the greater the potential risk);
- Number of valued components predicted to be impacted (e.g., air, water, soil, country foods);
- Likelihood of human exposure to the impacted valued components (e.g., drinking water sources, recreational use of surface water, reliance on country foods);
- Location and proximity of individuals to the impacted areas;
- Sensitivity of individuals (e.g., underlying health conditions, presence of communities, culturally significant areas, etc.);
- Duration of exposure to constituents of potential concern (i.e., residential area vs. seasonal occupancy vs. occasional site use);
- Communities, designated Inuit organizations, and/or Indigenous groups concerns related to health, country foods, and use of traditional territory;
- Loss of access to harvesting and gathering areas, changes to quality of harvest or loss of cultural identity; and
- Public concerns related to “real or perceived” effects to health.

The Human Health Risk Assessment is to include:

- Predicted sources, quantities, and points of release from the proposed project emissions and effluents containing hazardous substances;
- Selection process for hazardous substance constituents of potential concern;
- Identification of pathways to human receptors;
- Identification and characterization of human receptors (workers and the public), including maps to delineate their locations and the distances of communities, residences, temporary/seasonal residences, etc. to project sites and related infrastructure;
- Method used to convert hazardous substance exposure and intake by the various human receptors from the various pathways into an exposure or dose (e.g., conversion factors); and
- Criteria used to determine significance of impact (e.g., exposure relative to lifetime cancer risk limit).

The Environmental Risk Assessment is to include:

- Predicted sources, quantities and points of release from the proposed project emissions and effluents containing hazardous substances;
- Selection process for constituents of potential concern;
- Identification of pathways to terrestrial and aquatic ecological receptors (valued ecosystemic components);
- Identification and characterization of terrestrial and aquatic ecological receptors;
- Method used to convert hazardous substance exposure and intake by the various ecological receptors from the various pathways into an exposure or dose (e.g., conversion factors); and
- Criteria used to determine significance of impact (e.g., toxicity reference values).

The Proponent shall include a summary of proposed mitigation measures to prevent or reduce adverse health effects and environmental risks from the proposed project.

8.4 Accident and Malfunctions Assessment

The assessment of accident and malfunction scenarios caused by technological, human error or exceptional natural events that have a reasonable probability of occurring must be provided. The Proponent should conduct a hazard identification and risk assessment of accidents and malfunctions across all phases of the proposed project, and should include at a minimum the following:

- An explanation of how potential accidents and malfunctions were identified and their likelihood of occurrence.
- A description of the source, quantity, mechanism, rate, form and characteristics of contaminants and other materials (physical and chemical) that could potentially be released to the surrounding environment during the postulated accidents and malfunctions. The

potential for accidents and malfunctions needs to be further clarified by season (e.g., oil spill on ice versus during open water).

- A description of the potential consequences including the environmental, health, social, economic, and cultural effects and any sensitive receptors that are situated adjacent. This should:
 - Include the plausible worst-case scenarios for each major incident type and the unmitigated effects of these scenarios; and
 - Consider any sensitive timing that would coincide (e.g., wildlife migration periods, nesting periods for migratory birds, spawning periods for fish and the presence of sensitive wildlife or Species at Risk).
- A description of how each potential accident and malfunction would be managed and mitigated, including a description of:
 - Any design safeguards;
 - Contingency and emergency response measures;
 - Clean-up or restoration work in the surrounding environment that would be required during, or immediately following the incident; and
 - How these would differ by season/environmental conditions.
- A description of any existing emergency preparedness and response systems and existing arrangements and/or coordination with qualified response organizations (including communities and government capacity).
- A discussion on any training planned or required for response should be included.
- A description on how emergencies would be communicated to regulators and surrounding communities.

9.0 PUBLIC ENGAGEMENT

Further to [Section 1.2](#) of this document, the Proponent shall demonstrate in the Impact Statement how engagement was conducted with the public and governments, including:

The Proponent should include:

- Methods: engagement methods used, including location and timing of engagement and individuals and organizations engaged, how groups and participants were selected, data collection methods employed (time, place and purpose), information collected, and how the Proponent verified its use and interpretation of the knowledge shared/collected;
 - groups should be distinguished by gender, age, or other community relevant factors such as hunters, trappers, harvester etc. to support a Gender Based Analysis + assessment)
 - a description should further be provided of how communication was facilitated with the public through accommodating culturally appropriate ways, including but not

limited to the use of regional languages/dialects, not only through translation but through live interpretation at community/public meetings,

- efforts made to distribute project information, including the organizations and individuals to whom the information was distributed,
- a summary of key dialogues, including issues and comments raised during all engagement activities including the potential biological, ecological, physical, health, social, economic, cultural and cumulative impacts should be identified by group.
- how the Proponent intends to address the concerns identified through the life of the project. Rationale for conclusions differing from community views must be provided; and
- plans for public engagement for the life of the proposed project, extending to monitoring and post-closure.

The Impact Statement must discuss the extent to which information from engagement activities contributed to decisions regarding the proposed project, including project design and plans, scoping, development and collection of baseline information, and informed mitigation or accommodating identified effects and in designing monitoring and follow up programs.

10.0 INUIT QAUJIMAJATUQANGIT

The Proponent shall provide background on the methodology used to collect, interpret, analyze, and synthesize this information including, but not limited to:

- Use of previously collected Inuit Qaujimajatuqangit, Indigenous Knowledge, and Community Knowledge from literature, databases or other sources;
- Format and location of meetings;
- Description of background information provided at meetings;
- Level of community participation and composition of participants;
- Design of studies used to collect the knowledge;
- Selection process for participants in such studies, including participants outside the designated area;
- Types of knowledge collected and/or shared; ~~and~~
- **Appropriate protocols acceptable to impacted Inuit communities for repatriation and long-term storage of Inuit Qaujimajatuqangit, Indigenous Knowledge, and Community Knowledge, acknowledging the owners of this data;**
- Roles and responsibilities of all concerned individuals and organizations in collecting, analyzing, interpreting, and synthesizing this data,
- Efforts to made to collect knowledge from Elders, women, special groups, or harvesters familiar with the proposed project area and the regional study area.

In all sections of the Impact Statement, the Proponent shall discuss how it ~~used~~ **incorporated** Inuit Qaujimajatuqangit to inform collection of baseline data, impact prediction, significance assessment, and the development of mitigation and monitoring programs. The Proponent shall explain how it treated and ~~used~~ **incorporated** Inuit Qaujimajatuqangit, used to address gaps in currently available scientific data, noting how variations in knowledge were considered and how discrepancies between two views was reconciled.

For instances where there are variations in knowledge between Inuit Qaujimajatuqangit, Indigenous and Community Knowledge and scientific conclusions, the Proponent must consider its obligation to apply the precautionary principle (as described further in Section 1.3) when reconciling discrepancies. Specifically, in situations where there is a high degree of uncertainty, the Proponent shall defer to the more conservative source of knowledge. A detailed record of decision-making rationale and efforts to collaboratively reconcile different findings between scientific knowledge and Inuit Qaujimajatuqangit, Indigenous Knowledge, and Community Knowledge should be outlined by the Proponent.

11.0 ENVIRONMENTAL MANAGEMENT SYSTEM

For every environmental management plan and monitoring plan, the Proponent will provide evidence of how it has engaged the public and governments in the development of those plans, and how Nunavummiut will be involved in the implementation and review of these management and monitoring plans and activities should the proposed project proceed. In addition, all monitoring plans will specifically identify whether and how Inuit Qaujimajatuqangit, Traditional **Knowledge**, and Community Knowledge will be used to inform the monitoring and management plans.

11.1 Environmental Management Plan

An Environmental Management Plan provides a systematic approach to consistently managing all environmental affairs for the Proponent, addressing concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, with an aim to improving environmental performance through continual improvement of the management system. The Impact Statement should include the Proponent's environmental policy, Environmental Management Plan, operational plans, and associated environmental management system for the proposed project. The Environmental Management Plan shall address how the Proponent proposes to manage potentially adverse environmental effects throughout the life of the proposed project.

The Proponent shall discuss the flexibility of the proposed plan to respond to changes in the development plan, the regulatory regime, the ecosystemic and socio-economic environments, technology, research results, and on-going understanding of Inuit **Qaujimajatuqangit including how it engaged and will continue to engage Inuit in the development and implementation of its Environmental Management Plan**. The Impact Statement should include discussion of how the results from the Environmental Management Plan will be used to support adaptive environmental management throughout all phases of the proposed project and identify threshold/criteria and indicators to trigger management actions in each sub plan.

The Environmental Management Plan shall be comprised of individual monitoring and mitigation plans, specific to various aspects, components, activities, and phases of the proposed project.

Although the information requirements of the following sections are intended to be as comprehensive as possible, it is recognized that various items depend on the Proponent's development plans for the proposed project, which will continue to be refined throughout the Review. While some information required under these plans might not be available for the Proponent's initial Impact Statement submission, the Proponent shall include a scheduled timeline relating to stages of the NIRB's review process or the later licensing/regulatory processes when this information will become available (i.e., Technical Meeting, *Final* Impact Statement, Final Hearing, and Water Licensing). In addition, the NIRB recognizes that flexibility in the arrangement of the information requested in the following sections may be required and the Proponent may use its judgement in consolidating or arranging the information in the most effective fashion.

11.2 Environmental Protection Plan

The Proponent shall, based on its impact predictions for identified valued components, prepare an Environmental Protection Plan in accordance with its Environmental Management Plan prior to commencement of all phases of the proposed project [site preparation/pre-construction, construction, operation (including reduced operation), maintenance, any potential modifications, temporary closure, final closure (decommission and reclamation) and post-closure].

The Environmental Protection Plan shall be integrated into procedure documents for all phases of the proposed project that target the site management staff, the Proponent's occupational health, safety and environmental compliance staff, as well as government departments and agencies tasked with environmental and regulatory compliance monitoring/surveillance. If appropriate, a table of contents and an annotated outline for the Environmental Protection Plan should be presented in the Impact Statement which addresses the major project activities, permit requirements, mitigation measures and contingency planning in combination with other management plans. **The Proponent shall also discuss how it engaged and will continue to engage Inuit in the development and implementation of its Environmental Protection Plan.**

11.3 Monitoring and Mitigation Plans

In accordance with the Environmental Management Plan, the Proponent shall present individual monitoring and mitigation plans specific to various aspects of the proposed project and the environment and to be incorporated into all applicable phases of the proposed project. It is important to have a monitoring program that is designed appropriately to verify the accuracy of the predicted impacts and the effectiveness of mitigation measures based on agreed upon thresholds. This information should be used to determine whether additional actions are necessary (adaptive management) to address unanticipated outcomes. Further, the Proponent shall provide a risk assessment of those economic (e.g., the global economy and international markets), **possible changes to the technology or engineering design as proposed in the project description (e.g., size and capability of aircraft, terrestrial vehicles, marine vessels, etc.),** or other conditions (e.g., ownership transfer, global pandemic) that might also impair the implementation or effectiveness of proposed mitigation measures or management. In these plans, the Proponent is required to outline how results from monitoring and from continued engagement with communities and residents, Inuit, and other stakeholders **and lessons from other projects operating in similar**

environments will be used to refine or modify the design and implementation of mitigation measures and management plans.

In the Impact Statement, the Proponent should demonstrate how these plans will ensure that:

- The project is conducted as proposed;
- The predicted adverse ecosystemic and socio-economic impacts are monitored and promptly mitigated at the earliest possible time and that adaptive measures are used to amend mitigation efforts if identified as not effective or strong enough;
- The regulatory requirements applicable to the proposed project will be met; and
- The works, equipment, and facilities connected to the proposed project are operating properly.

In its monitoring and mitigation plans, the Proponent should specify proposed criteria or thresholds to trigger additional mitigation measures if monitoring results warrant and identify what next steps will be taken and how the effectiveness of these mitigation steps will be monitored. These plans should also identify the position of the person responsible for the implementation of mitigation measures, the system of accountability and the phase and component of the proposed project to which the mitigation measure applies.

Each of the monitoring and mitigation plans shall include:

- Objectives of the monitoring program;
- Identification of any applicable laws, regulations, and/or Acts;
- The valued components to be monitored, with associated parameters and indicators, controls, and selection criteria/thresholds to be compliant with;
- Description of the frequency, duration, and geographic extent of monitoring with justification for each, and identification of the personnel or positions who will conduct the monitoring, collect, analyze, and interpret data;
- Description of measures taken to protect infrastructure from climate change and potential major climate events (e.g., extreme flows);
- Proposed adaptive management actions, durations of actions and thresholds for action levels in the event that observed results (impacts) differ from those predicted, including a discussion of actions to be taken for observed non-compliance with the law or regulations, performance targets and thresholds or with the obligations imposed on contractors by the environmental provisions of their contracts;
- Discussion of research programs to address novel techniques or optimization of mitigation measures;
- Discussion on how data will be compared temporally for the longevity of the proposed project to monitor trends, effects of events, potential change in background data (e.g., from climate change) and transitions through project phases **including how its monitoring plans relate to and enhance closure goals, objectives, criteria, and the final state;**

- Proposed reporting scheme for monitoring results, including format (e.g., written, community meetings), reporting intervals, inclusion of reporting to potentially affected communities, residents, public and knowledge holders, local organizations, designated Inuit organizations, Indigenous groups, other governments or organizations, and interested individuals;
- Evaluation of the efficiency of mitigation measures **including the degree of certainty of the evaluation**, and the compliance with project authorizations;
- Plans for integration of monitoring results with other aspects of the proposed project, including adjustments for operating procedures and refinement of mitigation measures;
- Procedures/mechanism to assess the effectiveness of monitoring programs, mitigation measures, and adaptive programs for areas disturbed by the proposed project;
- Discussion of the relationship between monitoring plans and the Environmental Management Plan;
- Quality assurance and quality control measures to be applied to monitoring programs; and
- Discussion of how Inuit Qaujimajatuqangit, Indigenous Knowledge, scientific research, community, and regulator feedback informed the specific monitoring and mitigation plans and proposed actions. **The Proponent shall also discuss how it engaged and will continue to engage Inuit in the development and implementation of its monitoring and mitigation plans, and what Inuit Qaujimajatuqangit-informed and Inuit-led monitoring it is committed to in relation to the project.**

As described in [Section 7.3](#), the Proponent shall consider the design of all biophysical and socio-economic environmental monitoring programs to ensure that the baseline data required is useful in understanding the relationship between the natural biological and ecological conditions and the potential project impacts on these conditions. The Proponent shall also consider the physical, well-being, social, economic, and cultural conditions, and the potential project impacts on these conditions.

In addition, all monitoring plans should be designed so that results from these programs can be coordinated with ongoing regional initiatives or programs with relevant government organizations, local organizations, or regional authorities.

11.3.1 Follow-Up and Adaptive Management Plans

A follow-up plan is a formal, ongoing process to verify the accuracy of the impacts predicted in the assessment and permitting stage of the proposed project, and to determine the effectiveness of proposed mitigation measures. To minimize the likelihood of mitigation failures and to limit the potential severity of consequences if there is such a failure, the Proponent must discuss how information related to the effectiveness of mitigation measures will be analyzed, and how associated adaptive measures will be employed in the environmental management system to address any such failures. Environmental assessment effects predictions, assumptions and mitigation actions that are to be tested in the follow-up program must be converted into field-testable monitoring objectives. The monitoring design must include a statistical evaluation of the adequacy of the historical background and current baseline data to provide a benchmark for testing

project effects, and the need for any additional pre-construction or pre-operational monitoring to establish a firmer project baseline. The Impact Statement should include, at a minimum, the following information about the Proponent's follow-up and adaptive management plans:

- The need for such a follow-up and adaptive plan and its objectives;
- How this plan will be structured, including enforcement and penalties for non-compliance;
- Which elements of the monitoring program described in [Section 11.3](#) would be incorporated;
- The mechanisms through which monitoring results will be analysed and mitigation measures or adaptive plans will be adjusted if necessary;
- How the effectiveness of any mitigation measures will be assessed and verified;
- How unforeseen effects would be captured through contingency planning or other adaptive management provisions, or for correcting non-compliance issues as to comply with benchmarks, regulatory standards or guidelines;
- Plans to involve Inuit and local communities **will be involved in adaptive management planning and implementation, including through the development of management objectives, indicators, thresholds (or triggers) and responses in monitoring**;
- The roles to be played by the Proponent, regulatory agencies, and others in each plan, and possible involvement of independent researchers;
- Proposed reporting scheme for when adaptive management strategies would be implemented;
- The sources of funding for planning and reporting;
- Identification of the quantitative triggers or thresholds that would indicate the need to alter or vary the management plan or mitigation measures; and
- If applicable, identifications of tiers of triggers or thresholds that would result in increasing or varied adaptive management strategies, **including the need for operational reductions or shutdowns during sensitive timing windows**.

11.3.2 Ecosystemic Environmental Plans

The Proponent shall present environmental monitoring and management plans developed to eliminate or mitigate potential negative impacts of the proposed project on the ecosystemic environment (see [Section 8.1](#) for a discussion on the ecosystemic environment). The Proponent shall also identify any residual effects after appropriate mitigation measures have been implemented and the significance of those effects. The plans should be developed to reflect the complete life span of the proposed project and contain appropriate monitoring and evaluation techniques (e.g., indicators or thresholds) that will allow regulators to intervene in a timely and constructive manner.

11.3.3 Socio-Economic Environmental Plans

The Proponent shall present plans, policies, and programs to minimize potential negative health, social, economic, and cultural impacts and to optimize potential positive impacts of the proposed project (see [Section 8.2](#) for a discussion on the socio-economic environment). These plans should be developed **prior to preconstruction** to reflect the complete life span of the proposed project and contain appropriate monitoring and evaluation techniques (e.g., indicators or thresholds) that will allow regulators to intervene in a timely and constructive manner.

The Proponent shall describe its socio-economic monitoring plans and mitigation programs, including how it will identify, manage, and mitigate potentially adverse socio-economic impacts and augment positive socio-economic impacts. In consultation with the applicable Regional Socio-Economic Monitoring Committee, the Proponent should clearly identify the role it will take in regional monitoring initiatives, including how its monitoring plans will align with those of the Regional Socio-Economic Monitoring Committee.

In general, it is expected that the Proponent's socio-economic monitoring plans and programs will include human resources, occupational health and safety, community and public involvement, implementation of Inuit impact and benefit agreements (IIBA), and if applicable, development partnership agreements with government departments, designated Inuit organizations and provincial, territorial and non-Inuit Indigenous governments for transboundary impacts. The focus of the socio-economic monitoring plans and program should be on the health, culture, wellbeing, and food security of the communities potentially to be affected by the proposed project. The Proponent shall outline how the predominant language/dialect in the Regional Study Area will be incorporated into each respective plan.

11.4 Closure and Reclamation Plan

The Proponent shall develop a preliminary Closure and Reclamation Plan for the proposed project, which outlines how the various components set out in [Section 6.0](#) will be designed for closure and how they will be decommissioned, reclaimed, and closed following project facilities closure. The Closure and Reclamation Plan shall include measures to restore the ecosystemic integrity after permanent closure of the proposed project. While this plan can be preliminary with key issues addressed for the environmental assessment in the NIRB's Review, greater detail is expected in the Nunavut Water Board Type "A" Water Licence Application. At a minimum, the plan submitted within the Impact Statement should include the following:

- Demonstration that environmental issues associated with the effective closure and reclamation of all proposed project components have been considered at the earliest possible stage in the project development process, including influencing the proposed project design;
- Identifying the Proponent's goals for reclamation of lands potentially affected by the proposed project;
- Description of reclamation methods, time frames, and schedules, including proposed progressive reclamation, research programs, and notice periods to employees and public;

- Description of temporary closure measures and a discussion of at what point a temporary closure should be considered permanent for the purposes of triggering the implementation of the Closure and Reclamation Plan;
- Discussion of research programs to address challenges to reclamation, given the local conditions;
- Considerations for the protection of public health and safety;
- Description of closure and post-closure monitoring of valued ecosystemic components including, but not limited to, wildlife, vegetation, air quality, landform stability and water quality **and quantity**;
- Discussion about the long-term monitoring and maintenance that may be required once physical and chemical stability of reclaimed areas has been established;
- Discussion of how environmental effects will be reduced or eliminated once the proposed project ceases operation;
- Discussion regarding re-establishing conditions that will permit the land to return to a similar pre-project land use;
- Identification on how the Proponent's plans reflect considerations associated with potential acid rock drainage and/or metal leaching potential of rocks, in association with related waste rock and waste management strategies;
- **The Proponent shall discuss how it engaged and will continue to engage communities in the development and implementation of its Closure and Reclamation Plans** and plans on how communities and residents of the **impacted area** can be involved in the reclamation research and decisions on how best to close the proposed project;
- Evidence that the Proponent engaged meaningfully with potentially affected members of the public and governments in the identification of desired end land use objectives for project affected areas, and how these were integrated into the Proponent's reclamation plans and land restoration standards; and
- Any considerations for the restoration of the natural aesthetics of the proposed project.

This plan is to be considered a “living” document, with the level of detail to be revised to reflect the progress of the proposed project as well as changes in technology and/or standards or legislation. Future revisions should also consider input from engagements with communities and other stakeholders on methods to be used, and potential uses for project infrastructure, etc. which specifically state how these inputs are incorporated.

11.4.1 Care and Maintenance Plan

A preliminary Care and Maintenance Plan shall be developed for the proposed project in conjunction with the Closure and Reclamation Plan, which outlines how the various components set out in [Section 6.0](#) will be treated in the event of a *temporary closure* or *unplanned closure* of the proposed project. The plan can be preliminary with key issues addressed for the environmental assessment in the Review and should include a discussion of the items listed previously in [Section 11.4](#).

The preliminary Care and Maintenance Plan shall also include information on how the various components set out in [Section 6.0](#) will be treated in the event of *reduced operations* of the proposed project such as during a pandemic, a labour strike, or partial closure.

11.5 Significance of Residual Impacts

The Impact Statement shall include an assessment of the residual impacts of the proposed project and the significance of those impacts on the components of the ecosystemic and socio-economic environments after the mitigation measures proposed by the Proponent have been implemented. This analysis of the potential residual impacts on the Valued Components, should enable readers of the Impact Statement to clearly understand the Proponent's perspective on the consequences of the proposed project, the degree to which effects on the Valued Components can be mitigated with the mitigation measures proposed, identifying those impacts which cannot be mitigated or compensated for and the significance of those impacts.

The Proponent should include a summary table in this section of its Impact Statement, which presents the effects before and after mitigation on the Valued Components, the mitigation measures applied, and the residual impacts that have been assessed.

The determination of significance of residual impact shall consider the attributes of each impact in accordance with the criteria established in [Section 7.4.6](#).

12.0 CONCLUSION

The Impact Statement shall end with a conclusion presenting a summary analysis of the overall projected biological, ecological, physical, health, social, economic and cultural impacts, anticipated transboundary and cumulative effects, proposed mitigation measures, and residual impacts. While highlighting the impacts on the region where the project is being proposed, this conclusion shall clearly present the importance of the Impact Statement findings to the designated area specifically and Canada more generally.

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- UN (United Nations). 1987. *Report of the World Commission on Environment and Development*. General Assembly Resolution 42/187, 11 December 1987. Retrieved April 12, 2007.

Appendix A: Sample concordance table for NIRB IS Guidelines information requirements (see [Section 3.2](#))

Reference to Applicable Section in IS Guidelines or NuPPAA	Description	Applicable Section in IS	
		Volume/Appendix	Section
4.1 Executive Summary	Available as a separate document that contains sufficient details for the reader to learn and understand the proposed project, potential ecosystemic and socio-economic impacts, mitigation measures, significance of residual impacts and follow-up program (Presented in English, French, and Inuktitut ¹²).		
4.2 Popular Summary	Non-technical summary for public review that provides an overview of the project being proposed and highlights information in the IS.		
Introductory Sections			
<i>NuPPAA</i> ss. 103(1)(n); 5.1 Proponent Information	Interests, management structures, operational experience, record of compliance, corporate policies, etc. The posting of performance bonds.		
<i>NuPPAA</i> ss. 103(1)(l); 5.2 Project Overview ; 5.3 Project Location ;	Proposed project components, scheduling details, project phases, key features, location and geographical setting. The interests in land and waters that the Proponent has acquired or seeks to acquire.		
5.4 Regulatory Regime	Identification of requirements of all relevant environmental and socio-economic standards, laws, regulations, policies, guidelines, resource management plans, land use plans, any relevant regional studies or strategic assessments relating to project approval and all phases of the proposed project.		
Project Components and Activities			
6.1 Project Design	Explanation of how the proposed project design has been influenced by the biophysical environment, climate change, impacts to humans and communities, impacts to wildlife, socio-economic conditions, archaeological resources, public engagement, etc., and show how the proposed project has been designed to contribute to ecosystemic integrity and sustainability.		

¹² “Inuktitut” or “Inuktitut” means the forms of Inuit language in current usage in Nunavut, including Inuinnaqtun within the Kitikmeot Region of Nunavut

Reference to Applicable Section in IS Guidelines or NuPPAA	Description	Applicable Section in IS	
		Volume/Appendix	Section
<i>NuPPAA</i> ss. 103(1)(a); 6.2 Project Purpose, Need, and Alternatives ;	The purpose of the proposed project and the need for the proposed project.		
<i>NuPPAA</i> ss. 103(1)(m); 6.2.1 Alternatives	The options for carrying out the proposed project that are technically and economically feasible and the anticipated ecosystemic and socio-economic impacts of such options.		
6.3 Scope of the Project	Detailed project description and project phases.		
6.4 Future Development	Conceptual design of foreseeable development to ensure no "project splitting".		
6.5 Economic and Employment Information	Proposed project development and closure costs, employment opportunities, contracting, employment benefits and programs, communities of hire and commuting arrangements.		
Impact Assessment Methodology			
7.2.1 Valued Ecosystemic and Socio-Economic Components	Identification of valued components (VCs), processes and interactions that are likely to be affected by the proposed project. Description of method of selection and assessment of adverse impacts of the proposed project on the VCs.		
7.2.2 Assessment Boundaries	Identification of defined study (temporal and spatial) and issues scope boundaries.		
7.3 Description of the Ecosystemic and Socio-Economic Environments and Baseline Information	Description of historical background and current baseline environment and environmental and socio-economic trends within the proposed project area.		
Error! Reference source not found. and 10.0: Error!	Explain how scientific data, <i>Inuit Qaujimajatuqangit</i> , Traditional Knowledge etc., was used to reach IS conclusions.		

Reference to Applicable Section in IS Guidelines or NuPPAA	Description	Applicable Section in IS	
		Volume/Appendix	Section
Reference source not found.			
NuPPAA ss. 103(1)(d); 7.4.2 Impacts of the Environment on the Project	The anticipated effects of the environment on the proposed project, including effects associated with natural phenomena, such as meteorological and seismological activity, and climate change.		
NuPPAA ss. 103(1)(f); 7.4.3 Cumulative Effects Assessment	The cumulative ecosystemic and socio-economic impacts that could result from the impacts of the proposed project combined with those of any other project that has been carried out, is being carried out or is likely to be carried out.		
NuPPAA ss. 103(1)(b); 7.4.4 Transboundary Impacts	Consideration for impacts of the proposed project which may occur outside the designated area.		
Project Environment and Impact Assessment			
NuPPAA ss. 103(1)(e); 7.4.1 Impact Prediction , 8.1 Ecosystemic Environment and Impact Assessment ; 8.2 Socio-Economic Environment and Impact Assessment ; 8.3 Human Health and Environmental Risk Assessment ; 8.4 Accident and Malfunctions Assessment	The anticipated ecosystemic and socio-economic impacts of the proposed project, including those arising from the effects of the environment on the proposed project.		
NuPPAA ss. 103(1)(g); 7.4.5 Indicators and Criteria ; 7.4.6 Significance Determination ;	Whether the anticipated ecosystemic and socio-economic impacts of the proposed project, including cumulative impacts, would unduly prejudice the ecosystemic integrity of the designated area.		

Reference to Applicable Section in IS Guidelines or NuPPAA	Description	Applicable Section in IS	
		Volume/Appendix	Section
11.5 Significance of Residual Impacts			
<i>NuPPAA</i> ss. 103(1)(i); 7.4.6 Significance Determination ; 11.5 Significance of Residual Impacts	The significance of the ecosystemic and socio-economic impacts of the proposed project, including cumulative impacts, taking into account the mitigation measures proposed by the Proponent. Includes an analysis of the potential residual impacts on the valued components.		
<i>NuPPAA</i> ss. 103(1)(b); Error! Reference source not found. Error! Reference source not found. ; 6.5 Economic and Employment Information ; 7.4.5 Indicators and Criteria ; 7.4.6 Significance Determination ; 9.0 Public Engagement ; 11.5 Significance of Residual Impacts	Whether, and to what extent, the proposed project would protect and enhance the existing and future well-being of the residents and communities of the designated area, taking into account the interests of other Canadians.		
Public Engagement			
<i>NuPPAA</i> ss. 103(1)(c); Error! Reference source not found. and 9.0 Public Engagement	Highlights of public engagement with relevant communities and organizations conducted prior to IS development. Must include a summary of key dialogues and identified concerns from public engagement, as well as any Proponent commitments to the communities. Whether the proposed project reflects the priorities and values of the residents of the designated area.		
Environmental Management System			
<i>NuPPAA</i> ss. 103(1)(h); 11.1 Environmental Management Plan ;	The measures, including those proposed by the Proponent, that should be taken to: i) avoid and mitigate adverse ecosystemic and socio-economic impacts,		

Reference to Applicable Section in IS Guidelines or NuPPAA	Description	Applicable Section in IS	
		Volume/Appendix	Section
11.2 Environmental Protection Plan ; 11.3 Monitoring and Mitigation Plans ; 11.3.3 Socio-Economic Environmental Plans ; 11.4 Closure and Reclamation Plan	including contingency plans; ii) optimize the benefits of the project, with specific consideration given to expressed community and regional preferences in regard to benefits; iii) compensate persons whose interests are adversely affected by the project; and iv) restore ecosystemic integrity after the permanent closure of the project.		
NuPPAA ss. 103(1)(k); 11.0 Environmental Management System	Any monitoring program of the proposed project's ecosystemic and socio-economic impacts that should be established, including one proposed by the Proponent;		
NuPPAA ss. 103(1)(j); 1.4 Sustainability or Sustainable Development ; 11.5 Significance of Residual Impacts	The capacity of renewable resources that are likely to be significantly affected by the proposed project to meet the existing and future needs of the residents of the designated area;		
Other			
NuPPAA ss. 103(1)(o);	Particular issues or concerns identified by the responsible Minister(s) in referring a proposal to the Board for Review.		
NuPPAA ss. 103(1)(p);	Any other matter within the Board's jurisdiction that, in its opinion, should be considered.		