Schedule C –

Hybrid Application Information Requirements

FOR THE

ESKAY CREEK REVITALIZATION PROJECT

PROPOSED BY

SKEENA RESOURCES LTD.

ISSUED BY

ENVIRONMENTAL ASSESSMENT OFFICE

APRIL 18, 2023

BRITISH COLUMBIA
EAO | Environmental Assessment Office

PREFACE

The Hybrid Application Information Requirements (Hybrid AIR) specifies the information that the proponent, Skeena Resources Ltd. (Skeena), is required to provide in its Application for an Environmental Assessment Certificate under the British Columbia *Environmental Assessment Act*/Impact Statement under the federal *Impact Assessment Act.* The Hybrid AIR will be a single document that will also list the requirements of the Tahltan Risk Assessment and the assessment of the effects to Nisga'a Nation's Treaty interests.

The proponent is proposing the Eskay Creek Revitalization Project (Eskay Creek or the Project) to restart mining at the past-producing Eskay Creek Mine. The Project would be an open pit gold-silver mine with an estimated total annual production of 3.0 million tonnes in Operating Years 1 to 5 and up to 3.7 million tonnes in Operating Years 6 to 9.

The Project would be located in northwestern British Columbia (BC), within the territory[1] of the Tahltan Nation and the Tsetsaut Skii km Lax Ha (TSKLH) (Figure 1). The southern portion of the concentrate haul route along Highway 37 near Meziadin Junction and westward along Highway 37A to Stewart passes through the territories of the Gitanyow Nation (Gitanyow), as well as through the Nass and Nass Wildlife Areas (as defined in the *Nisga'a Final Agreement*) of the Nisga'a Nation. The closest local Métis chartered community, represented by the Métis Nation British Columbia (MNBC), is in Terrace, BC.

The Project must undergo a review process under the British Columbia *Environmental Assessment Act* (2018). As part of this process, the proponent must develop an Application for an Environmental Assessment Certificate (Application).

The British Columbia Environmental Assessment Office (EAO) requested a substituted federal impact assessment process decision from Canada pursuant to the *Impact Assessment Act* (IAA), which the federal Minister of Environment and Climate Change Strategy approved on November 29, 2022. The Project exceeds the thresholds for designated projects given in the IAA's Physical Activities Regulations, namely the expansion of an existing mine with a total production capacity of over 5,000 tonnes per day, greater than 50% increase in mine operating area, as well as the construction of a new metal mill.

The proponent also seeks approval from the Tahltan Central Government (TCG) as part of the decision-making process associated with the Tahltan Environmental Assessment Strategy Framework, as provided for in the *Declaration Act* Consent Decision-Making Agreement for Eskay Creek Project between TCG and the Province of British Columbia under Section 7 of the *Declaration on the Rights of Indigenous Peoples Act* (known as the Declaration Act Agreement). In addition, the proponent must satisfy the requirements under Chapter 10 of the Nisga'a Treaty between the Nisga'a Lisims Government (NLG), the Government of Canada, and the Province of British Columbia.

List of Reviewers

The following Indigenous Governments and Organizations, provincial and federal government agencies, local government agencies, and the public and southeast Alaska tribe's representatives (SEITC) have had the opportunity to review and comment:

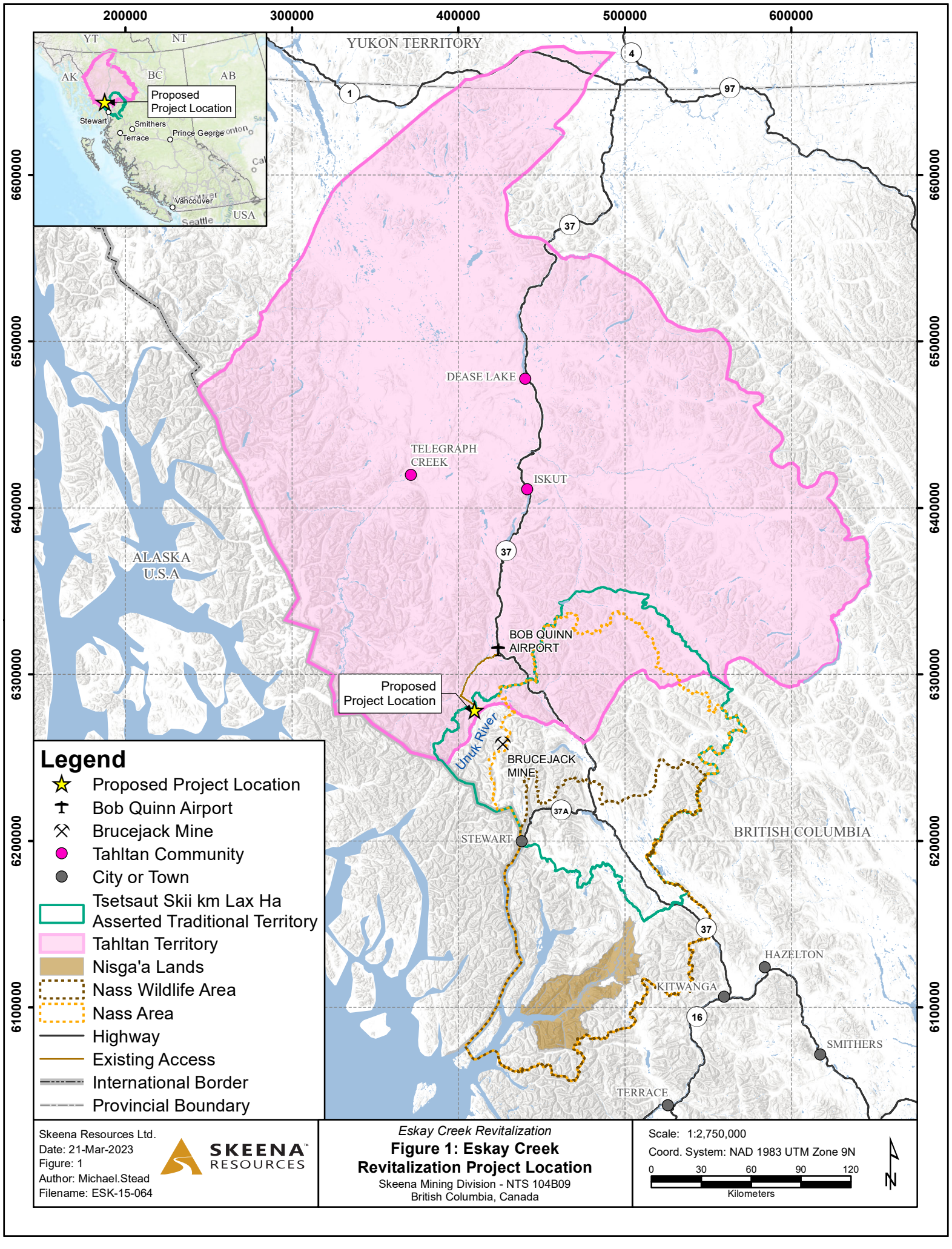
- Indigenous Governments and Organizations:
    - Tahltan Central Government/Tahltan Nation;

[1] For the purposes of this document, "territory" is defined as the established or asserted traditional territories of Indigenous nations, except in relation to Nisga'a Nation, which refers to Nisga'a Lands, the Nass Area, and the Nass Wildlife Area as applicable.

  - Nisg̲a'a Lisims Government/Nisg̲a'a Nation;
  - Tsetsaut Skii km Lax Ha;
  - Gitanyow Nation; and,
  - Métis Nation British Columbia;
- Provincial Government Agencies:
  - British Columbia Environmental Assessment Office;
  - Ministry of Energy, Mines and Low Carbon Innovation (EMLI);
  - Ministry of Environment and Climate Change Strategy (ENV);
  - Ministry of Forests (FOR);
  - Ministry of Transportation and Infrastructure (MOTI); and,
  - Northern Health;
- Federal Government Agencies:
  - Impact Assessment Agency of Canada;
  - Crown Indigenous Relations and Northern Affairs Canada;
  - Environment and Climate Change Canada;
  - Employment and Social Development Canada;
  - Fisheries and Oceans Canada;
  - Health Canada;
  - Indigenous Services Canada;
  - Innovation, Science and Economic Development Canada;
  - Natural Resources Canada;
  - Public Safety Canada;
  - Transport Canada; and,
  - Women and Gender Equality Canada;
- Alaska Tribal Transboundary Advisory Committee (ATTAC)[2]:
  - Southeast Alaska Indigenous Transboundary Commission;
- Local Governments:
  - Dease Lake Community Advisory Commission;
  - District of Stewart;
  - Regional District Kitimat Stikine;
  - Town of Smithers; and,
  - City of Terrace; and,

[2] Further discussed in Section 15.

- U.S. Federal and State Agencies:
  - State of Alaska;
  - U.S. Environmental Protection Agency;
  - U.S. Fish and Wildlife Service;
  - National Marine Fisheries Service; and,
  - U.S. Department of Interior.



Skeena Resources Ltd.
Date: 21-Mar-2023
Figure: 1
Author: Michael.Stead
Filename: ESK-15-064

SKEENA RESOURCES

Eskay Creek Revitalization

Figure 1: Eskay Creek Revitalization Project Location

Skeena Mining Division - NTS 104B09
British Columbia, Canada

Scale: 1:2,750,000
Coord. System: NAD 1983 UTM Zone 9N
0 30 60 90 120
Kilometers
N

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TABLE OF CONCORDANCE

A Table of Concordance must be included in the Application. The Table of Concordance must demonstrate where the requirements in the Hybrid AIR are found in the Application, with volume and section references following the format presented in Table 1. For example:

Table 1: Example Table of Concordance Between Hybrid AIR and Application

Hybrid AIR Section	Hybrid AIR Title	Hybrid AIR Section Language	Application Section Title	Application Volume, Section (or Subsection)	Relevant Appendix
Section 11.8.2	Assessment Boundaries	The Application must define assessment boundaries for the Fish and Fish Habitat Valued Component, including spatial, temporal, and administrative and technical boundaries.	Assessment Boundaries	Volume 2 Section 11.2.2	Volume 6 Appendix K

ABBREVIATIONS AND ACRONYMS

The Application must include a list of acronyms and abbreviations used and their definitions, which must expand on the list presented below.

%HA	Percent highly annoyed
AOI	Areas of Interest
ARD	Acid Rock Drainage
BAT	Best Available Technology
BC	British Columbia
BCEAA 2018	British Columbia *Environmental Assessment Act*
BCR	Bird Conservation Regions
BEC	Biogeoclimatic Ecosystem Classification
BEP	Best Environmental Practices
CAAQS	Canadian Ambient Air Quality Standards
CAC	Criteria Air Contaminant
CDC	Conservation Data Centre
CEA	Cumulative Effects Assessment
CEAA	Cumulative Effects Assessment Area
CFULRTP	Current and Future Use of the Land and Resources for Traditional Purposes
CIS LRMP	Cassiar Iskut-Stikine Land and Resource Management Plan
CMT	Culturally modified tree
CO	Carbon monoxide
COPC	Contaminants of potential concern
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
dBC	C-weighted decibels
dBZ	Z-weighted decibels
DFO	Fisheries and Oceans Canada
DPM	Diesel particulate matter
EA	Environmental assessment
EAO	Environmental Assessment Office
ECCC	Environment and Climate Change Canada
Eskay Creek	Eskay Creek Revitalization Project / the Project
EMLI	British Columbia Ministry of Energy, Mines and Low Carbon Innovation

ENV	British Columbia Ministry of Environment and Climate Change Strategy
ESCIA	Economic, Social, and Cultural Impact Assessment
FIA	Fossil Impact Assessment
FOR	British Columbia Ministry of Forests
FTE	Full-time equivalent
GBA Plus	Gender-Based Analysis Plus[3]
GIS	Geographic information system
Gitanyow	Gitanyow Nation
GHG	Greenhouse gas
HADD	Harmful alteration, disruption, or destruction
HHRA	Human health risk assessment
HHRAP	Human Health Risk Assessment Protocol
Hybrid AIR	Hybrid Application Information Requirements (this document)
IAA	*Impact Assessment Act*
IAAC	Impact Assessment Agency of Canada
IBA	Important Bird Area
KSM	Kerr-Sulphurets Mitchell
LAA	Local Assessment Area
LAmax	Maximum A-weighted sound level
Lday	Daytime sound level
Ldn	Day-night sound level
Leq	Equivalent continuous sound level
LFN	Low frequency noise
Lnight	Night-time sound level
ML	Metal leaching
MNBC	Métis Nation British Columbia
MOTI	British Columbia Ministry of Transportation and Infrastructure

[3] Gender-Based Analysis Plus (GBA Plus) provides a framework to describe the full scope of potential adverse and positive effects under the proposed *Impact Assessment Act* (IAA). GBA Plus is an analytical process that can guide practitioners to identify who is impacted by a project and assess how they may experience impacts differently, in order to develop mitigation measures to address these differential impacts. Where this AIR refers to diverse groups or populations, it is in the context of GBA Plus and the various identity and social factors that need to be considered, including age, economic status, education, ethnicity, gender, geography, language, racialization, religion, sex and sexual orientation. Rigorous GBA Plus requires the generation, collection and use of both quantitative and qualitative data that are disaggregated (e.g., Indigenous, youth, women) and intersected (e.g., Indigenous women, young men) so that possible differential effects are identified, and mitigation measures are planned to address adverse effects.

NAD 83	North American Datum of 1983
NFA	Nisga'a Final Agreement
NLG	Nisga'a Lisims Government
NOC	National Occupation Classification
NOx	Nitrogen oxides
NPAG	Non-potentially acid generating
PAG	Potentially acid generating
PBDEs	Polybrominated diphenyl ethers
PCBs	Polychlorinated biphenyls
PEM	Predictive Ecosystem Mapping
Project	Proposed Eskay Creek Revitalization
PY	Person year
RAA	Regional Assessment Area
RAAD	Remote Access to Archaeological Data
RCMP	Royal Canadian Mounted Police
RISC	Resource Inventory Standards Committee
RSC	Referenced Standards Committee
SACC	Strategic Assessment of Climate Change
SEITC	Southeast Alaska Indigenous Transboundary Commission
SARA	*Species at Risk Act*
Skeena	Skeena Resources Ltd.
TAS	Tahltan Ancestral Study
TCG	Tahltan Central Government
TEK	Traditional Ecological Knowledge
TEM	Terrestrial Ecosystem Mapping
TLUS	Tahltan Land Use Studies
TMSF	Tom MacKay Storage Facility
TSF	Tailings Storage Facility
TSKLH	Tsetsaut Skii km Lax Ha
TSM	Terrain Stability Mapping
VC	Valued Component
VOC	Volatile Organic Compounds

WRSF	Waste Rock Storage Facility
WSAP	Wilp Sustainability Assessment Process

APPLICATION SUMMARY

The Application must include a stand-alone plain language summary, including the following:

- A summary description of the Project;
- A summary description of the assessment scope;
- A brief overview of engagement activities with Indigenous Governments and Nations, the public, local governments[4], provincial and federal government agencies and stakeholders;
- A summary of the key issues raised by Indigenous Governments and nations, the public, local governments, provincial and federal government agencies and stakeholders;
- A summary of key effects, proposed mitigation measures, and predicted residual and cumulative effects and any required follow-up programs;
- A summary of effects within federal jurisdiction;
- A summary of key effects on Indigenous nations and their asserted or Treaty rights, and proposed mitigation measures; and,
- Key maps or figures illustrating the Project location and key Project components.

The Application must be provided in an indexed, unlocked PDF format.

[4] Local government includes municipalities and regional districts.

1.0 PROJECT OVERVIEW

1.1. Project Introduction

The Application must provide a high-level overview of the Project including:

- The type of Project;
- The objective of the Project;
- Key Project components and ancillary activities, including how these relate to existing and underground workings of the historic Eskay Creek Mine;
- A statement of the general Project location and names of the nearest communities; and,
- The relevant history of the Project, including exploratory or investigative history, previous mining activities (including un-remediated areas), existing infrastructure from previous mining and Technical Sample activities.

1.2. Proponent Description

The Application must:

- Describe the proponent, including company history, type of company or organization, affiliations, headquarter location, corporate and management structures, and where applicable, identify the name of the legal entity(ies) that would develop, manage and operate the Project;
- Provide contact information for the proponent representatives for the Project (for example, name, address, phone, fax, email);
- Specify the mechanism used to ensure that corporate policies must be implemented and respected for the Project; and,
- Identify the main contractor/company responsible for the preparation of the Application, including their qualifications (see Section 25.3).

1.3. Project Location

The Project location is provided in Figure 1.

The Application must describe the Project location and access. Descriptions of the following features must be included:

- Project site, including the latitude and longitude coordinates of the main Project site;
- Project footprint, including the proponent lands, properties, or leased lands;
- Surface areas, locations, and spacing of Project components;
- Past development or existing infrastructure;
- Identification of tenures, licenses, permits, or other authorizations (e.g., agriculture, water licenses, mineral, forestry, oil and gas, utilities, trapping, angling, guide outfitting, and commercial recreation activities);
- Current land or aquatic uses in the area;

- Distance of Project components to any Federal lands and the location of any Federal lands within the Regional Assessment Area (RAA);
- Distance of Project components to any lands subject to the *First Nations Land Management Act*, if applicable;
- Primary, secondary and tertiary watersheds;
- Landcover in the area, including important or critical habitats;
- Ecozone, ecoregions, and ecodistricts as per BC's or Canada's Ecological Land Classification;
- All waterbodies and their location on a map;
- Navigable waterways;
- Project access route and transportation corridors, including the use of existing roads;
- Summary of historical environmental characteristics of the area;
- The environmental significance (including landcover) and value of the geographical setting in which the Project must take place and the surrounding area;
- Environmentally sensitive areas, such as national, provincial and regional parks, Indigenous Protected and Conserved Areas, UNESCO World Heritage Sites, ecological reserves, ecologically and biologically sensitive areas, identified wildlife habitat areas, old growth management areas, ungulate winter ranges, wetlands, habitats of federally or provincially listed species at risk (including critical habitat) and other identified sensitive areas;
- Lands subject to conservation agreements;
- Description and location of all potable drinking water sources (that is, municipal or private);
- Description of local and Indigenous communities, including population and distances to these communities, and permanent or seasonal residences (if provided by Indigenous communities);
- Distance to the international or provincial border (i.e., Yukon and the United States);
- Indigenous traditional territories, Tahltan territories, and/or consultation areas, Treaty and/or Title lands, Indian Reserve lands, Indigenous harvesting regions (with permission of Indigenous nations), Métis settlements; and,
- Summary of culturally and locally important features of the landscape (both Indigenous and non-Indigenous).

The following information must be included on maps:

- Project footprint and components;
- All waterbodies, watersheds, and their location;
- All existing and proposed on- and off-site Project components including those that will be constructed and reclaimed for the Technical Sample Program, together with widths of corridors and/or rights-of-way;
- Indigenous traditional territories, Tahltan territories, and/or consultation areas, Treaty and/or Title lands;
- Local and Indigenous communities, including permanent and seasonal residences;
- Areas of significance that have been identified as appropriate for public release by Indigenous nations;
- International, provincial and territorial boundaries, where applicable;
- Parks and protected areas;

- Legally protected wildlife habitat, including designated areas or features such as wildlife management areas or features established under the *Wildlife Act*, and ungulate winter ranges, old growth management areas, and recreation sites and trials established under the *Forest and Range Practices Act* etc. (and areas or features designated federally, or by local or regional governments);
- Important environmental features;
- Geographic coordinates for the centre of the main Project site;
- Major existing infrastructure;
- Proponent lands, properties, or leased lands;
- Adjacent resource lease boundaries; and,
- Adjacent land uses.

The following shapefiles and .kmz files for the Project must be provided, where not previously provided or where updates have been made to the shapefiles submitted with the Initial or Detailed Project Description:

- Project footprint;
- Known or proposed Project components;
- Project access route; and,
- Boundaries of Local Assessment Areas (LAAs) and Regional Assessment Areas (RAAs) for each Valued Component (VC).

1.4. Project Components

The Application must describe the Project components and associated ancillary works, including both on- and off-site facilities and associated activities, past development, and other characteristics to assist in understanding the potential environmental, economic, social, culture, and health effects, as well as effects on Indigenous nations and rights of Indigenous nations, as identified by the Indigenous nations.

Project components must be detailed in the Application and must include the components listed in Table 2 and all other components proposed by the Project. The Application must describe how existing/modified infrastructure (from the Existing Mine and Technical Sample Program, see Table 2) will be used or will interact with the Project.

Table 2: Summary of Project Components

Project Component	Eskay Creek Mine		Eskay Creek Revitalization Project
	Existing Mine (as of 2021)	Technical Sample[1]	
Eskay Creek Mine Access Road to Project site, which joins Highway 37 at km 293	E	O	O
Tom MacKay Storage Facility (TMSF)	E	C (disposal of PAG rock and tailings in existing waterbody)	C (expanded size due to new embankments)
Open pits	-	-	C

Project Component	Eskay Creek Mine		Eskay Creek Revitalization Project
	Existing Mine (as of 2021)	Technical Sample[1]	
			(North and South Pits)
Rock quarries	E (at km 54 and 55)	C (new locations for TS quarry and NPAG quarries)	C (in footprint of North Pit)
Overburden and topsoil stockpiles	E (beside km 59 camp)	C (new locations)	C (expansion of Technical Sample stockpiles)
Transmission line to mine site (15 km in length)	-	C (right-of-way, clearing, installation of poles and fiber optic)	C (upgraded transmission line)
Substation	-	C	C (upgraded)
Waste Rock Storage Facility (WRSF)	-	C	C (expansion beyond Technical Sample extent)
Surface and diversion water management structures including ponds, sumps, and ditches	E	C	C
Source control and water treatment facilities including: • proposed water treatment plant (if required); • use of existing water treatment buildings and mine water settling ponds (ponds 1-4); and, • D7 discharge location for construction and early operation years.	E	C (if needed)	C (if needed, pending outputs from modelling studies)
Tom MacKay Creek diversion tunnel around the North Pit	-	-	C
Haul roads between the mine, the WRSF, stockpiles, the TMSF, the crusher, and the mine maintenance facilities	-	C	C
Light vehicle roads	E	C	C
Contact water pipeline from Pond 5 to TMSF, reclaim water pipeline from TMSF to process plant	-	C	O
Tailings pipeline from process plant to TMSF following haul road	-	-	C
Run-of-mine and Process Plant ore stockpile pads and stockpiles	-	C	C
Ore stockpile pad	-	C (temporary)	C (expanded footprint)
Processing infrastructure including: • Process Plant; • First aid, assay lab, warehouse, maintenance, and administration;	- - -	- - -	- - -

Project Component	Eskay Creek Mine		Eskay Creek Revitalization Project
	Existing Mine (as of 2021)	Technical Sample[1]	
• Propane tank storage; • Incinerators; • Treatment plants for potable water from new wells and sewage treatment; and, • On-site high voltage main substation connected to new upgraded transmission line (built for Technical Sample).	- - -	- - C	- - C (upgraded)
Eskay Creek Mine Site – existing facilities with temporary camps (58 km and 59 km), including incinerator	E	O	O (decommission during operations)
Laydown pad and temporary crushing plant adjacent to Process Plant	-	C (laydown pad, modular process plant, fuel storage)	C (expanded footprint for Permanent Camp, process plant, truck shop, warehouse, administration, electrical substation)
Hazardous Waste Storage Facility (existing facility will be used until Year 1)	E	C	C
Detonator and explosives magazines and explosives bulk storage	-	C	O
Mine Infrastructure Facility (km 56) including: • Vehicle maintenance, truck parking and wash facilities; • Fuel and lube storage; and, • Mine dry.	-	C (fuel and lube storage)	C (vehicle maintenance and mine dry)
Helipad for emergency situations	E	O	C
Security buildings	E	C	O
Warehouse and laydown areas	E	O	C
Modular worker accommodations in two new camps (Construction/Early Operations Camp and Permanent Camp)	-	-	C
Landfills	E	C	O
2 km laydown area (Bob Quinn)	-	C	O

Notes:

E = Existing components.

C = Components that will be constructed and/or expanded and operated.

O = Components to be operated based on construction in an earlier phase.

[1] Section 3.3 of the Detailed Project Description describes infrastructure remaining at the mine site as of 2021 and the anticipated infrastructure footprint in place by the end of the Technical Sample program, immediately prior to construction of the Revitalization Project.

1.5. Project Activities

The Application must provide a description of the applicable construction, operations, closure, post-closure phases of the Project, including their duration and proposed scheduling. Proposed scheduling must identify the location, the time of year, expected start date, frequency and duration, and magnitude and scale for each Project activities. Any overlapping phases must be described. The Application must identify activities that involve periods of increased disturbance to environmental, economic, social, culture, and health conditions, and effects to Indigenous nations and their asserted or Treaty rights.

The Application must identify a pre-construction phase and describe any activities that are planned to be conducted prior to construction of the full Project (for example, tree clearing or decommissioning/removal of existing infrastructure that is not required for the Project and must be removed before the start of construction). The Application must describe any Project activities that rely on or interact with existing mine facilities, including those built as part of the Technical Sample.

The Application must also provide a summary of the changes that have been made to the Project since submission of the Detailed Project Description, including the rationale for the changes.

The Application must describe whether there is any uncertainty about where Project components or activities are located; uncertainty about how Project components or activities will be undertaken that could be of consequence to effects assessments; and, if any design and engineering has not been completed that could be of consequence to effects assessments.

1.5.1. Site Preparation and Construction

The Application must include a description of the site preparation and construction activities associated with the following:

- Construction staging;
- Site grubbing/clearing and excavation, including tree and vegetation removal;
- Soil management, including soil salvage, stockpiling, and erosion and sediment control;
- Drilling and blasting (frequency, duration, time of year, time of day and methods);
- Explosives manufacture, storage and management;
- Construction of site access roads and linkages to public roadways;
- Installation of towers and transmission lines (including types of wood pole structures, heights of structures, and lengths of spans between structures);
- Installations of site services such as fencing, lighting, and security systems;
- Changes to existing infrastructure;
- Borrow materials requirement (source and quantity);
- Storage areas for material stockpiles (e.g., topsoil, overburden, waste rock);
- Mine waste management including tailings, waste rock, ore, overburden and topsoil;
- Water management and treatment, including mine reopening, water crossings and diversions, dewatering or deposition activities (quantity, treatment requirements, release points, quality at discharge), stormwater management required (location, methods, timing);

- Water management including conceptual information regarding dewatering of the underground works, figures showing proposed open pits and existing workings, water levels and volumes to manage during construction and operation, and how water from the underground workings will be managed.
- Sewage treatment and waste management systems;
- Operation of light duty, heavy-duty, and mobile off-road equipment (type, quantity);
- Construction of temporary and on-site support facilities (e.g., administrative buildings, garages, warehouses) and other ancillary facilities;
- Establishment of worker accommodations (capacity, wastewater treatment);
- Transportation of employees and materials;
- Storage and management of industrial, domestic and hazardous materials, fuels, and residues;
- Open pit mine development;
- Construction of storage areas for the management of site preparation and construction waste; and,
- Construction and operation of any waste management systems.

The Application must describe the maximum physical extent of any tree management zones associated with project components where hazard/danger trees will be removed for safety reasons, such as but not limited to transmission lines, access roads, and worker accommodation. The Application must describe the activities that will take place in tree management zones and identify any locations where stands of trees as opposed to individual trees may need to be removed.

1.5.2. Operation

The Application must include a description of the operation activities associated with the following:

- Supporting infrastructure;
- Product production and stockpiling, product extraction, processing and treatment;
- Drilling and blasting, explosives manufacture, storage and use;
- Operation and maintenance activities such as verification or equipment and systems;
- Soil management, including erosion and sediment control;
- Water management, including hydrotest water, potable water, water use requirements, storm water, process water, wastewater, water recycling, and effluent treatment (quantity, quality at discharge, treatment requirements, source points, release point[s]);
- A water management plan for the site which reflects the contact and non-contact water handling and discharge, including maps that show the direction of water flow, discharges, conveyance channels, diversion ditches and seeps;
- Storage and handling, transport and disposal of reagents, petroleum products, chemical products, of industrial, domestic, hazardous materials, and contaminated waste and residual materials;
- Operation monitoring programs;
- Waste management, optimization, and recycling;
- Workforce management, including transportation, work schedules and lodging;

- Mining of ore deposit and operation of surface infrastructure and support facilities;
- Mine waste management including tailings, waste rock, ore, overburden and topsoil;
- Transport of ore and mine waste; and,
- Site reclamation activities.

The Application must describe the vegetation management activities/regimes that will occur over the life of the Project including but not limited those associated with transmission line and access road rights-of-way. This must include but not be limited to the means used to manage vegetation (e.g., mechanical, chemical, manual), species prescriptions/objectives, minimum and maximum heights to which vegetation will be managed, and the timing and frequency of activities.

The Application must describe the frequency and times of year in which, following construction, transmission line and support structure inspection and maintenance activities will occur and how those will be carried out, including any use of vehicles and aircraft.

The Application must describe temporary Care and Maintenance operations in the event mining operations are halted or suspended before mine production is completed.

1.5.3. Closure and Post-Closure

The Application must include a preliminary outline of closure and post-closure phase associated with the following activities:

- Repurposing and recycling of materials and equipment;
- Reclamation of Project site for alternate use;
- The preliminary outline of a suspension, abandonment, decommission or reclamation plan for any components associated with the Project;
- The ownership, transfer and control of the different Project components;
- Final site restoration;
- Reclamation, recontouring, soil replacement, and revegetating of the site;
- Removal of surface contamination from facilities and equipment;
- Dismantling and removal of equipment and systems;
- Demolition of buildings and ancillary structures;
- Mine water treatment activities, if required;
- Long-term care, monitoring and maintenance of the integrity of the site and any remaining structures, including water management;
- Management and disposal of conventional and other hazardous waste arising from decommissioning; and,
- Suspension, abandonment or decommissioning for temporary or permanent facilities.

1.6. Workforce Requirements

The Application must describe the anticipated labour requirements, employee programs and policies, and workforce development opportunities for the Project, including:

- Opportunities for employment outlining the anticipated number of full-time and part-time positions to be created for each Project phase, the skill levels required for the positions, and working conditions;
- Anticipated workforce region of origin (that is, local and regional, out-of-province or international employees) and demographics disaggregated by various diverse subgroups;
- Workforce requirements in consideration of Gender-Based Analysis Plus (GBA Plus), presented in sufficient detail to analyze how historically excluded or underrepresented groups will be taken into account, including Indigenous nations and other relevant community diverse subgroups (e.g., women, gender-diverse people, youth, seniors);
- Investment in training opportunities (e.g., reskilling or upskilling);
- Expected workforce requirements based on the National Occupational Classification (NOC) system and timelines for employment opportunities;
- Working conditions and anticipated work shifts, work rotation schedules and means to get employees to the Project site for all project phases: construction, operations, closure, and post-closure (for example, hours and days of work, and methods and frequency of transportation and points of pick up and departure);
- Anticipated housing arrangements for the workforce for each Project phase, including whether accommodation will be single occupancy, and if workers on and off-shift or rotation will share accommodation (i.e., if more than one worker will utilize an accommodation unit but only one will be present at a time and, if applicable, workforce interaction with the local communities including the proponent's worker code of conduct while on - and off-shift in the community);
- Anticipated hiring and retention policies including hiring programs to enhance workforce diversity;
- Workplace policies and programs for Indigenous employment and employment of underrepresented groups;
- Employee assistance programs and benefits including career planning, employee counselling, family support, workforce transition planning (at end of Project life), benefit plans; and,
- Hiring and workplace policies and programs and human resource management practices to prevent or minimize negative effects from or within workforces, including codes of conduct, workplace safety programs (e.g., workplace violence prevention, etc.) and cultural training and awareness programs; and policies regarding workers ability to hunt, fish, gather and use personal motorized vehicles while they are off shift at camps.

1.7. Project Purpose, Need, and Alternatives Considered

1.7.1. Purpose of the Project

The Application must classify the Project and outline what is to be achieved by carrying out the Project including:

- The target market (such as international, domestic, local);

- The perspectives of participants (i.e., public, Indigenous nations, governments) in establishing objectives that relate to the intended effect of the Project on society; and,
- Objectives the proponent has in carrying out the Project.

1.7.2. Need for the Project

The Application must describe the underlying opportunity that the Project intends to develop. The Application must provide supporting information that demonstrates the need for the Project. The Application must include a summary of any comments or views of Indigenous nations, the public, and other participants that the proponent received on its 'Need for' statement.

1.7.3. Alternatives to the Project

The Application must:

- Provide a description of the functionally different ways that are technically and economically feasible to meet the Project need and achieve the Project purpose. For these technically and economically feasible alternatives to the Project, the Application must:
  - Provide sufficient information for the selection of alternatives to the Project; and,
  - Demonstrate how the views, information, and knowledge from Indigenous nations, the public, and other participants, as well as how existing studies/reports, and sustainability principles were considered.

The analysis of alternatives to the Project must validate the preferred alternative is a reasonable approach.

1.7.4. Alternative Means of Carrying out the Project

The Application must identify and consider alternative means of carrying out the Project that are technically and economically feasible, including the use of Best Available Technologies (BATs), consideration of sustainability, and the potential environmental, economic, social, culture, and health effects, risks and uncertainties of those alternatives. The alternative means analysis must address all Project components for all Project phases, where relevant to the Project activities and design. Considerations include, but are not limited to, alternative technologies, processes, mitigation and design.

The alternatives to and alternative means assessments must be informed by, but not limited to the following:

- Any regional or strategic assessment;
- Scientific research;
- Any study or plan that is conducted or prepared by a government (including local, provincial, federal or Indigenous nation) in respect to the Project region and that has been provided with respect to the Project;
- Consideration of the Global Industry Standard on Tailings Management (Global Tailings Review 2020);
- Any relevant assessment of the effects of the Project that is conducted by or on behalf of an Indigenous nation and that is provided with respect to the Project;
- Tahltan Knowledge, Indigenous Knowledge, community or local knowledge, comments received from the public, comments received from a jurisdiction; and,

- Other studies or assessment conducted by other proponents.

The alternative means analysis must include:

- Descriptions of all alternative means considered;
- The BATs considered and applied in determining alternative means;
- The methods and criteria used to determine technical and economic feasibility of possible alternative means, the preferred alternative means and the unacceptability of excluded alternative means, including consideration of trade-offs associated with the preferred and alternative means;
- Consideration of potential effects to species at risk as per the *Species at Risk Act* (SARA), including any critical habitat, including a description of how avoidance of effects was considered and how it may be achieved through alternative means of carrying out the Project or alternatives to the Project;
- An identification of alternative means that are technically and economically feasible;
- Criteria to examine the environmental, economic, social, culture, and health effects of each remaining alternative means to identify a preferred alternative;
- Effects to air quality, water quality, all wildlife and associated habitat (including wetlands), and risk from accidents and malfunctions to examine the environmental effects of alternative means in identifying a preferred alternative;
- The elements of each technically and economically feasible alternative means and the associated adverse and positive effects on: environmental, economic, social, culture, and health conditions the rights or interests of Indigenous nations, including those identified by the Indigenous nation(s); greenhouse gas (GHG) emissions; sustainability; accidents and malfunctions (i.e., the environment consequences of failure); influences of climate change; and risks and uncertainties;
- Where alternative means for carrying out the Project result in corresponding changes to the health, social, cultural or economic conditions, GBA Plus (see Acronyms and Definitions section), and the Provincial guidelines on Human and Community Well-Being must be applied to the effects analysis to describe disproportionate effects on diverse subgroups who may be more vulnerable to adverse effects. The proponent must also consider the views or information provided by Indigenous nations, the public and other participants in establishing parameters to compare the alternatives means and predicted effects;
- All Project elements, including, but not limited to, the following Project elements and components, where relevant to the Project activities and design:
    - Project site location;
    - Route or corridor and what methods must be used for transportation and linear Project features (e.g., roads, transmission lines);
    - Access to the Project site;
    - Location of key Project components;
    - Facility layout and design;
    - Waste management strategies for used fuel;
    - Energy sources to power the Project site and other stationary sources to provide heat to the Project;
    - Management of water supply and wastewater;

  - Water management and water treatment structures (i.e., sediment ponds, existing vs. new construction), source control and treatment technologies, and location of the final effluent discharge points; and,
  - Non-point-source discharges of storm water and seepage;
- Fugitive dust abatement and monitoring;
- Construction alternatives;
- Timing options for various components and phases of the Project;
- Location, construction and crossing methods for waterbodies, watercourses, wetlands and other obstacles;
- Management of excavated materials, including those that are potentially acid generating or leachable;
- Mining related activities:
  - Mining operations (open pit, underground);
  - Waste rock/tailings management (including long-term stability and geochemical performance in sub-aerial and sub-aqueous settings, and contingency storage capacity for NPAG and PAG materials) that considers technology, siting, and water management; including identification and consideration of best practices and BATs for waste rock management;
  - Processing facilities location and design (comminution, separation, concentration, and dewatering); and,
  - Suspension, abandonment, or decommissioning options.

2.0 Hybrid Environmental Assessment Process and Application Information Requirements

2.1. Background

The Eskay Creek environmental assessment (EA) process will be a first regulatory review to require consent from the Tahltan Nation under the *Declaration of Rights of Indigenous Peoples Act* and as consent is defined in the BCEAA 2018. To fully achieve these decisions, all parties involved in the Eskay Creek EA are committed to the co-design and implementation of a Hybrid EA process which will reflect the Tahltan specific EA process, requirements, and knowledge sources to support Tahltan Consent requirements and decision-making while being consistent with BCEAA 2018 and IAA legislative, regulations, and policy requirements of the substituted EA process.

Tahltan have developed a Tahltan EA Strategy Framework founded on Tahltan governance, laws, stewardship principles, policies, and knowledge. It is designed to set the Tahltan requirements for the scope, criteria, methods, and assessment standards and practices for measuring effects on Tahltan Values. The outcome of this work is then assessed by Tahltan for both singular and cumulative effects, through a Tahltan Risk Assessment. Finally, the risks will be measured against Tahltan Sustainability Requirements. The risk assessment and sustainability criteria will support Tahltan decision-making on the consent of a project and if approved, the conditions required for the project to proceed.

The information provided in this Hybrid AIR sets out the information requirements that must be met in the Application and effects analysis.

Tahltan will use this information to conduct separate reporting for the Tahltan Risk Assessment and Sustainability Requirements.

2.1.1. Tahltan Risk Assessment

The Tahltan EA Strategy Framework views risk in the context of potential effects to Tahltan and environment from a project design, baseline information, mitigations, and implementation where partial or total failure can occur. Risk also relates to the confidences of the contingencies to the project design, baseline information, mitigations, and implementation, the probability of them failing and the consequences of the failures to Tahltan and the environment.

The Tahltan Risk Assessment will be based on the requirements in the Declaration Act Agreement and Process Order documents, including the Hybrid AIR, reviewed against the Application outcomes in their entirety to support a Tahltan Risk Assessment for Eskay Creek.

In undertaking a risk assessment for a proposed project, the factors that Tahltan will consider include the following:

1. How will the Project affect the following:
    a) Tahltan's Title and Rights and the exercise of Title and Rights;
    b) high sensitivity areas or environmentally sensitive areas within Tahltan Territory;
    c) the quality or quantity of ground water or surface water, or ground and surface water connectivity and aquifers;
    d) sacred areas;
    e) important habitat areas, including birthing, breeding and wintering areas for fish and wildlife, or wildlife migration corridors;

f) ecosystems or species of importance to Tahltan;

g) Tahltan harvesting areas, traditional use areas or other Tahltan land use areas;

h) archaeological sites, burial sites, historical village sites or other site- specific features within Tahltan Territory; and,

i) Tahltan's relationship with the proponent.

2. What are the cumulative effects on the values listed in section 1 above?
3. What is the proximity of the project to Tahltan communities and will the project affect those communities?
4. Will the Project cause irreparable harm to Tahltan Territory?
5. Does the Project align with Tahltan direction on the use of the Project area, including in land use plans?
6. Does the proposed Project in the current design, as a stand-alone project, and as part of a cumulative review meet the Tahltan Sustainability Requirements?
7. Will the Project provide more positive than negative health, social, cultural and economic impacts on Tahltan?
8. What education, employment and training opportunities will the Project provide?
9. What economic opportunities will the Project provide for Tahltan and Tahltan businesses?
10. What is the compliance, regulatory, and operational history of the proponent with Tahltan and other Indigenous nations?
11. Does the proponent have the financial resources to carry the proposed Project to final closure as well as the legacies required by Tahltan?
12. Can the land and water in the Project area be returned to the existing or desired health as directed by Tahltan laws, principles, policies and knowledge?
13. Has a Tahltan land use and occupancy study been completed and used in the design of the Project and incorporated into the EA application?
14. Does baseline information meet the confidences of Tahltan that it accurately and precisely captures the current knowledge for the project area and study areas? If not, do the contingencies meet the confidences of Tahltan?
15. Does the proposed Project design, baseline information, mitigations, monitoring and closure protect the ground and surface water in the area and in downstream land and water areas?
16. Is there independent Tahltan monitoring being funded as part of the Project design?
17. Have the proponent and/or regulatory agencies applied Tahltan Sustainability Requirements and the above risk criteria? Are they following the consent and decision-making requirements for Tahltan? Are they taking actions in relation to any Tahltan risk and sustainability concerns to require changes to the proposed Project, certificate conditions?
18. Has the proponent committed through binding obligations to meet Tahltan Sustainability Requirements?

2.1.2. Tahltan Sustainability Criteria

Tahltan Law and Knowledge is based on the connection of Tahltan with the land and the inclusion of all Tahltan with land, water, and creatures. This foundational principle is a core element of sustainability.

Humans are part of the ecosystems and human actions have to be done where health of the ecosystem is not impaired. Tahltan oral histories, laws, and principles all indicate where these actions are not followed, significant impacts occur and relationships with the land and water are damaged to the detriment to all Tahltan.

In assessing whether a project is sustainable, Tahltan will consider whether the Project:

- Meets the requirements of the 1910 Declaration on Tahltan regarding governance, sovereignty, jurisdiction and authorities;
- Meets the principles of the Tahltan Resource Development Policy;
- Is consistent with applicable Tahltan lands governance policies;
- Is consistent with fundamental Tahltan land and resource principles;
- Allows the land and water to be returned to a level of environmental health to support Tahltan's Title and Rights and land uses across the Tahltan Continuum, with a focus on future land use by Tahltan;
- Does not require mitigations, treatment, or monitoring beyond closure (i.e., will not require treatment of the land and water in perpetuity to maintain them at near normal levels);
- Does not restrict Tahltan from meeting food security needs or conducting social, cultural, and environmental practices;
- Minimizes adverse impacts to Tahltan Values and has Tahltan social, cultural, environmental, and environmental compensation plans in place to support this requirement;
- Does not significantly impact Tahltan Values through residual or cumulative effects; and,
- Contributes, supports, or assists in creating social, cultural, environmental and economic legacies for Tahltan.

2.2. General Guidance for Tahltan EA Requirements and Hybrid AIR

Tahltan, EAO, and Skeena, are developing a Hybrid AIR to capture the full scope of EA requirements as legally required for this EA. It is intended to provide directions from the Tahltan Central Government on scope, criteria, scales, methods, values, and effects assessment (both project and cumulative) to be captured in the overall assessment process, along with assessment requirements for EAO and the Impact Assessment Agency of Canada (IAAC).

It is designed to have all Tahltan requirements in one section, but with linkages in sections where common values and/or information requirements occur. This is being done to reduce duplication in the document.

The Application must summarize the Tahltan regulatory and planning context for the assessment of Tahltan Values, including standards, policies, and assessment frameworks specific to Tahltan Values. The Application must be consistent with decision-making agreements or agreements between parties involved in this EA. These factors are not based on RISC, RSC, or other provincial/federal science standards, but Tahltan Knowledge. Tahltan are committed to work with all parties through the EA process to ensure a clear understanding of Tahltan assessment requirements.

2.3. Government Roles and Decisions within a Hybrid Environmental Assessment Substituted Process

2.3.1. Section 7 Consent, Tahltan Governance Decisions, and Application Information Requirements

On June 6, 2022, Tahltan Nation and BC signed the *Declaration Act Consent Decision-Making Agreement for the Eskay Creek Project* under Section 7 of *DRIPA*, known as the Declaration Act Agreement. The purpose of the Declaration Act Agreement is to:

- Set out a consent-based decision-making process that will be used for the Application pursuant to subsection 7(1)(b) of the *Declaration Act*;
- Provide clarity and transparency for the governments' respective processes for the Assessments and decision-making in relation to the Application;
- Allow each government to engage in cohesive and comprehensive processes for the Assessments that effectively support informed decision-making for both Tahltan and BC in relation to the Application;
- Set out the area that requires Tahltan consent before the Project can proceed in that area pursuant to subsection 7(b) of the BCEAA 2018; and,
- Set out how Skeena will be engaged in the parties' respective processes for the Assessments and decision-making in relation to the Application.

Tahltan also recognize consent (as defined in the BCEAA 2018) is being sought to support decisions related to Detailed Project Description (specifically for the termination or exemption options), Readiness Decision, and subsequently consensus or consent for the Process Order, Assessment Plan, Application Information Requirements, and other process stages under the legislation. Finally, there is an obligation to determine any Tahltan requirements and decisions under Section 19.4, as Participating Indigenous nations, and Understanding of Interests.

These consensus or consent decisions under the BCEAA 2018 are to be considered as independent of each other and independent of the consent decision resulting from the Declaration Act Agreement between Tahltan and BC.

2.3.2. British Columbia Environmental Assessment Office and EA Legislation and Regulations

As identified above, the EAO will be the lead in delivering EA requirements under the BCEAA 2018 legislation, regulations, and policies for this Project. In addition, the EAO will meet federal requirements under the IAA and through the *Impact Assessment Cooperation Agreement Between Canada and British Columbia,* as the Project was substituted on November 29, 2022[5]. The agreement requires BC and Canada to "*take into account any agreements, treaties or arrangements with Indigenous peoples in making and considering a substitution request*[6]."

2.3.3. Impact Assessment Agency of Canada and IAA Legislation and Regulations

IAAC will advise the EAO in delivering the federal requirements under the IAA and the roles and decisions related to a substitution process identified in the above section. The federal Minister of Environment and Climate Change Canada, or

[5] https://www.projects.eao.gov.bc.ca/api/public/document/6387d9101c96ac0022c3f524/download/Eskay%20Creek%20-%20Federal%20Response%20to%20Request%20for%20Substitution%20-%2020221129.pdf
[6] https://www.canada.ca/en/impact-assessment-agency/corporate/acts-regulations/legislation-regulations/canada-british-columbia-impact-assessment-cooperation/canada-bc-cooperation-agreement.html

the federal Governor in Council, retain the responsibility to make a decision on whether the project may proceed, and IAAC will be one of the regulators/governments making a decision on the Project.

2.4. Proponent Participation

The proponent must work with Tahltan as a decision-maker to ensure Hybrid AIR, effects analysis, and assessment outcomes are being met to the satisfaction of Tahltan. In addition, the proponent must ensure the requirements for Participating Indigenous Nations are being delivered as identified by BCEAA 2018.

Tahltan are committed to work with the proponent to ensure Tahltan information, interpretations, and engagement are being met to support the Tahltan Risk Assessment as part of the Eskay Creek Application, Tahltan Risk Assessment(s), Sustainability Requirements, and consent decisions.

2.5. Participating Indigenous Nations

For those Indigenous nations identified as Participating Indigenous Nations, the process is expected to be followed as identified by EAO and the BCEAA 2018. For Tahltan, the role will be as a decision-maker through the consent agreement and as a Participating Indigenous Nation with the same opportunities, expectations, engagements, and decisions as other Indigenous nations.

2.6. Public and Stakeholder Participation

No additional requirements are currently expected for public and stakeholder participation component of this EA.

2.7. Interpreting and Applying Hybrid Application Information Requirements

2.7.1. Tahltan Nation

2.7.1.1. Knowledge Protection

To successfully interpret the application of Tahltan assessment requirements, requires the work to be done with Tahltan Knowledge and through the lens of Tahltan laws, stewardship principles, governance, and assessment outcomes. Tahltan Knowledge is a critical component of this work, and to ensure the protection of this knowledge will require agreements between parties on the use, distribution, ownership, and protection. This will result in the careful management of knowledge to ensure only relevant and public domain information is being included in public EA documents and decision-making outcomes.

For a number of Tahltan Values, it will not be possible to share knowledge or expect a proponent to conduct the analysis to the satisfaction of Tahltan. For those values, Tahltan will conduct the analysis and will provide the estimated outcomes to the proponent for inclusion in the Application and Effects Assessment. Tahltan will then determine their own assessment outcomes consistent with Tahltan Risk and Sustainability Requirements.

2.7.2. Hyperlinking of Common Themes in the Hybrid Application Information Requirements Document

As identified to increase efficient use of this document, hyperlinks between common requirements will be identified in other sections so as to support the understanding in the differences in the assessment requirements. Each hyperlink will be situated at the start of a section to follow a standard approach.

2.7.3. Reporting Requirements

Tahltan will be assessing the Eskay Creek EA through a risk assessment and the ability of Eskay Creek to meet Tahltan Sustainability Requirements. Reporting on the potential effects of Eskay Creek will need to be completed in a manner to support Tahltan assessments. The reporting requirements are not based on RISC, RSC, or other provincial/federal science standards, but Tahltan Knowledge. Tahltan are committed to work with Skeena, EAO, and IAAC through the EA to ensure a clear understanding of Tahltan reporting requirements.

Reporting requirements will be detailed in the Effects Assessment for each Tahltan Value and in the sections related to the risk and suitability assessments.

3.0 REGULATORY FRAMEWORK

3.1. Assessment Process

The Application must identify where the Project has met, or been deemed to meet, the definition of a reviewable Project, with reference to the appropriate section of the Reviewable Projects Regulation, and provide a high-level overview of the assessment process, including the application of the '*Declaration Act* Consent Decision-Making Agreement for Eskay Creek Project' to that process. It must also state if there is a federal review and, if so, what physical activity is listed in the *Physical Activities Regulations.* It must indicate whether the federal assessment is substituted with the provincial assessment, and whether there is an Indigenous-led assessment. The Application must provide a reference to the Assessment Plan produced by the EAO, which presents details of the process.

3.2. Relevant Policies, Initiatives, and Assessments

The Application must identify and take into account government policies, resource management plans, planning or study initiatives, and regional studies and strategic assessments relevant to the Project and/or assessment and their implications.

3.2.1. Gender-Based Analysis Plus

For consideration of the intersection of sex and gender with other identity factors (Section 22(1)(s) of the IAA and Section 25(2)(d) of the BC EAA), the Application must refer to GBA Plus and must consider disproportionate effects on various population groups. Guidance documents with relevance to GBA Plus include:

- *Guidance: Gender-Based Analysis Plus in Impact Assessment* (IAAC 2022);
- *Tool - Assessing the Quality of a GBA Plus in the Impact Statement* (IAAC 2023); and,
- Human and Community Well-Being (EAO 2020).

To support GBA Plus, the information provided in the Application must:

- Be sufficiently disaggregated to support the analysis of disproportionate effects;
- As much as possible, be disaggregated (e.g., by sex, gender, age, ethnicity, Indigeneity, ability, and any other community-relevant identify factors) and intersected by multiple identity and social factors to better understand how people can often be disadvantaged or privileged by multiple factors and systems that interact to create different access to project opportunities or benefits;
- Describe how community and Indigenous knowledge from populations potentially affected by the Project, including community developed indicators and locally collected data, was used in establishing baseline conditions and informing effects assessments;
- Describe how diverse sub-groups differ in access to resources, opportunities and services;
- Describe the circumstances in which diverse subgroups could experience more adverse effects or receive fewer benefits related to the Project than others, and how they may respond differently to potential effects;
- Describe mitigation or enhancement measures to address these differential effects; and,
- Complement quantitative information, including gender sensitive data, with qualitative insights from studies or consultations, and other sources.

The description of effects should be based on both data collected and concerns expressed through engaging with Indigenous nations and diverse sub-groups potentially affected by the Project.

3.3. Land Use Plans

The Application must:

- Summarize any land use plans (including Indigenous land use plans), land zoning of a government (municipal, provincial, federal, or Indigenous) that may be relevant to the Project area including whether the Project is consistent with the identified plans. This includes land and resource management plans and sustainable resources management plans.
- Include information on land lease agreement or land tenure.

3.4. Indigenous Nation Arrangements

The Application must identify and describe how the assessment has considered the following arrangements:

- Any applicable arrangements between federal or provincial governments and Indigenous governments or nations that are pertinent to the Project and/or EA (i.e., the *Declaration Act* Consent Decision-Making Agreement for the Eskay Creek Project as which well as any treaty, self-government, land claims); and,
- Any agreements between the proponent and Indigenous governments or nations applicable to the assessment of the Project.

3.5. Permits and Authorizations

The Application must provide an update to the information provided on permits and authorizations needed for the Project in the Detailed Project Description, and must:

- Describe all existing licenses, permits, approvals or tenures held by Skeena for the Project area and the date received (see Table 3);
- Describe anticipated Federal, Provincial, Regional, and Municipal authorizations and permits required by Skeena for the Project area, their expected submission dates, and an indication of whether they would be submitted during the assessment; and
- Identify federal or provincial greenhouse gas (GHG) legislation, policies or regulations that will apply to the Project, in accordance with the Strategic Assessment of Climate Change (SACC).

Table 3: Authorization Table

Name of Authorization	Statute and Authorizing Agency	Description / Need for Authorization	Anticipated Submission Timing
[Name]	[Statute, Level of Government]	[Description]	[Date]

4.0 TAHLTAN APPLICATION INFORMATION REQUIREMENTS

The information provided in this section is under the authorship of the Tahltan Central Government to provide information, description, and directions on the Application Information Requirements the proponent must follow in preparing the Application. References contained within this Section and are found in Section 4.9.

4.1. Tahltan Application Information and Effects Assessment Requirements

Sustainability and stewardship are difficult and complex terms to define within Tahltan Nation as it can mean many things to citizens. It is recognized that understanding what is meant by these concepts is one of the key directions sought from community review of this strategy. To aid in the initial application and development of Tahltan Risk Assessment requirements, the following understandings of sustainability and stewardship are being used.

4.1.1. Laws and Stewardship Principles

4.1.1.1. Connection and Hierarchy of Sustainability

Tahltan Law and Knowledge is based on the connection of Tahltan with the land and the inclusion of all Tahltan with land, water, and creatures. This foundational principle is a core element of sustainability (Jones et al. 2021).

> *"All animals were originally born of a woman called Atsentmā', meaning "meat mother" or "game mother" (Teit 1919: 231–32). This woman assigned each animal with its own appropriate habit and food source. The Meat-Mother was thought to live far in the north. Showing disrespect to animals or failing to make full use of them as food, would cause the Meat-Mother to call her children "home." While the punishment lasted, there would be a scarcity of game."*

Tahltan law allows rights of access and use to non-Tahltan on Tahltan territory, but does not allow for rights of exclusive management or exclusion. Land alienation is not an option under a proprietorship model of ownership, which sees ownership in terms of belonging over generations.

In relation to stewardship, some of the key principles to be aware of include 1) oneness or interconnectedness of all things; 2) respect; 3) Ah'ī (Tahltan concept that refers to the bad consequences that follow when the right order has been violated – somewhat similar as the Precautionary Principle in western science); and 4) sharing or generosity (reciprocity between all things).

Humans are part of the ecosystems and human actions have to be done in a way where the health of the ecosystems are not impaired. Tahltan oral histories, laws, and principles all indicate where these actions are not followed, significant impacts occur and relationships with the land and water are damaged to the detriment to all Tahltan.

The interconnection occurs across the Nation, across the clan, a Chief or Head of Family area, and a family area as evident of the Tahltan Stewardship Principles (Jones et al. 2021).

> *"The earth is animate and the same as our mother; for, if there were no earth, there would be no people. The latter are her children, and the animals also. She looks after them all, and provides food for all. The rocks are her bones, and water her milk. A child cannot live without sucking its mother's milk, and people cannot live without water" (Teit 1919: 227).*

"Sometimes the grounds of a clan got in bad shape, needed rest, for game and fur were getting scarce. Then they let part or all of it rest until the game became plentiful again, maybe from 2 to 5 years, and the clan hunted on the grounds of other people. This was always arranged in a friendly way without trouble. The Indians looked well after the fur and the game of the country so that they should not get scarce." (Teit n.d.)

"…snares were kept in place until catch the yearlings (the one that walks around with mother) in the springtime, indicates that the mother caribou had chased the yearling away because she is going to have a calf. — the chief made a decision, a chief for the game, just like a game warden. — never set snare until the fall time when the calves are weaned, the young ones get big. Then they just live on fish." (Carlick n.d.)

4.1.1.2. Ownership and Generosity

The land is not owned but shared with all living and non-living beings; stewardship requires the balance of providing for all while setting the rules for allowable uses for accessing the land. In addition, accessing the land is based on the principle of sharing and sharing in way which provides for today and future generations.

"In the Tahltan cycle of stories dealing with Big Raven in his role as transformer or shaper, a recurring theme is how Raven, travelling along the coast in the post-Flood world, destroys the monopoly control that certain powerful figures have over many of the goods and resources necessary to life, such as water, light, fire and knowledge. Raven steals these goods and resources and distributes them among all the people, so that their benefits can be enjoyed by all. The story which explains the origin of the tides (controlled by a man who refused to allow the tides to recede, thus blocking access to tidal foods), begins by describing a world of scarcity: "Now the people in many parts of the country had no food. Game and all kinds of food were in the possession of a few persons (or families), who alone controlled these things. Thus many people were constantly starving" (Teit 1919: 201). Scarcity and the hoarding of food and resources are the realities that define the world as it was before Raven set to work transforming it.

In the words of Carolyn Doody (Thompson 2012: 121), the connection between the Tahltan language and the land points to the reality of "interdependency, the land provides for us and in turn we take care of it." The reciprocity involved in respecting the land shows itself also in what it means to belong to the land. Ownership carries with it obligations, not only to other human beings, but to the land itself and how it is used." (Jones and McLaren 2020).

Finally, the principles can be summarized as *"…ownership cannot be separated from belonging; in fact, ownership is belonging. To claim possession of a piece of land is to assert not only that the land belongs to you but that you belong to the land.*" (Jones and McLaren 2021).

4.2. Tahltan Knowledge and Application in Regulatory Reviews

As reported in the Klappan Strategic Initiative (2015), "*Tahltan oral data provides a link to the voices of our ancestors; voices which have provided valuable and insightful knowledge of our sophisticated past. Our knowledge showed that Tahltans extensively used every inch of our territory, every resource provided by the land and that we did so with the utmost connection and respect for the land. Tahltan territory encompasses rugged wilderness; forests, mountains, canyons, glaciers and rushing rivers. Tahltan people inherited the skills to thrive in these landscapes, including the abilities to engineer and build bridges across steep and dangerous canyons. This land and these resources have shaped Tahltans and provided us with a high-quality life*."

Tahltan Knowledge is currently defined as:

- "**Tahltan Knowledge**" means cultural heritage, traditional knowledge and traditional cultural expressions of the Tahltan, and knowledge of traditional Tahltan lifeways and systems, whether embodied in tangible or intangible form, and from ancient and contemporary time, transmitted from generation to generation, and includes:
    - The manifestations of Tahltan sciences, technologies and cultures, including environmental knowledge, use of natural resources, land use and occupation, systems of land tenure and self-management;
    - Governance and laws, including intra- and inter-societal relations;
    - Spiritual knowledge;
    - Immovable cultural property (including sacred and culturally significant sites and burial grounds);
    - Human and genetic resources and remains;
    - Knowledge of fauna and flora, seeds, medicines, water, soils, weather, solar and lunar effects, processes and cycles;
    - Oral traditions, literatures, and visual and performing arts (including songs, dances, music, stories, ceremonies, symbols and designs);
    - Sports and traditional games;
    - Any documentation of Tahltan heritage, including in archives, film, photographs, videotape, audiotape and all forms of media; and,
    - In whatever form or media, including all analysis, compilations, studies, reports or other materials in a variety of media containing or generating from, in whole or in part, Tahltan knowledge;
- "**Tahltan Knowledge Documentation**" means the Inventory, TK Studies and associated maps, including all versions, editions and drafts thereof, generated for and from studies conducted under this Agreement; and,
- "**Tahltan Knowledge–holders**" means Tahltan Members that have been given the responsibility by the Tahltan Nation to act as custodians of particular Tahltan Knowledge to ensure the preservation of such Tahltan Knowledge for future generations.

4.2.1. Application of Indigenous Knowledge and components of Tahltan Knowledge

Application of Tahltan Knowledge requires the fundamental value of oneness or interconnectedness of all things means that it is necessary to understand Tahltan Knowledge cumulatively and at site specific, landscape, and regionally across time. A holistic approach as opposed to a piecemeal approach. Likewise, recognition of ah'ī means that long-term future consequences have to be taken into account.

Jones et al. (2021) in a review for TCG of Indigenous knowledge in environmental assessments identifies the following on the subject based on the work of Usher (2000):

> *"…four categories of Traditional Ecological Knowledge (TEK): (1) Knowledge about the environment; (2) Knowledge about the use of the environment; (3) Values about the environment; and (4) The knowledge system.*
>
> *"Category 1: Factual/rational knowledge about the environment. … In practical terms, this broad category of TEK is largely about what works, and sometimes about how and why it works. It also includes, for example,*

indicators of ecosystem health, such as the appearance or behaviour of animals, the taste and texture of country food, or unusual occurrences or conditions. Category 1 TEK thus ranges from specific observations to explanatory inferences, constituting explanations of what people observe and the relations and connections among them, or more broadly, an understanding of why things are as they are."

"Category 2: Factual knowledge about past and current use of the environment (e.g., patterns of land use and occupancy, or harvest levels), or other matters of social or historical interest that bear on the traditional use of environment and hence the rights and interests of the local aboriginal population in the regional environment. Statements of fact are based on a range of knowledge from personal experience and observation to oral history."

"Category 3: Culturally based value statements about how things should be, and what is fitting and proper to do, including moral or ethical statements about how to behave with respect to animals and the environment, and about human health and well-being in a holistic sense."

"Category 4: Underlying the first three categories is a culturally based cosmology—the foundation of the knowledge system—by which information derived from observation, experience, and instruction is organized to provide explanations and guidance. It is the framework with which people construct knowledge from facts. … While this category is the least articulated and hence the least accessible to outsiders, some understanding of it may be needed to interpret or understand the other three categories of knowledge."

Usher points to the importance of Category 1 (and to a lesser extent Category 2) TEK for establishing baselines, given the historical depth captured, ranging from "living memory" to the memory of several generations preserved as oral history.

…The Mackenzie Valley Review Board (Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment, July 2005) follows this model. The guidelines "do not provide a comprehensive definition of traditional knowledge" because it "is not static wisdom and it is difficult to define due to its dynamic nature," but they do note three important elements of TK that can contribute to the EA process as set out in the Mackenzie Valley Resource Management Act*: 1) Knowledge about the environment; 2) Knowledge about use and management of the environment; and 3) Values about the environment. The definitions of the first two components follow Usher closely; the third description expands on Usher in a helpful way:*

This knowledge consists of peoples' values and preferences, and what they consider "significant" or valued components of the environment, and what they feel is the "significance" of impacts on those valued components. Aboriginal spirituality and culture play a strong role in determining such values. This element of traditional knowledge includes moral and ethical statements about the environment and about the relationships between humans, animals, and the environment; the "right way" to do things.

4.2.2. Tahltan Ancestral Study (TAS)

Tahltan Knowledge is both spatial and non-spatial with linkages between knowledge sources. It provides strong information on ecological themes within ancient, historic, current, and future settings.

TAS is a study based on map-based interviews with Tahltan elders carried out over a number of years, beginning in the early 1980s and is confidential. Tahltan Knowledge Agreements with legal protections on its use and ownership, are required by all parties to be able to access the information. The information contained in these interviews is now available in a geographic information system (GIS) database, supplemented with data from an ethnographic/historical literature review.

TAS provides a solid basis for the land use and occupancy component of Tahltan Knowledge; and also has good information relating to Tahltan Knowledge about the environment.

It is a complex source of knowledge and the Tahltan are in a good position to use this complex information to support land and resource management in the Nation.

4.2.3. Tahltan Land Use Studies (TLUS)

To date, the Tahltan contribution to EAs has been focussed on TLUS reports that provide detailed information about ancient, historic, and current use and occupancy of Tahltan territory, along with relevant archaeological data. The studies also provide an ethnographic/historical context for this information for the Project area.

These studies are important for informing on Tahltan rights and title. Tahltan Land Use and Occupancy Studies are being used to capture the key elements of the TLUS and the items listed above to support Tahltan regulatory reviews and EAs. In addition, where TLUS have been developed for a project area, additional interviews to detail current and future uses are being used (see below sections).

4.2.4. Tahltan Ecological Knowledge

Tahltan Knowledge Is both spatial and non-spatial with linkages between knowledge sources. It provides strong information on ecological themes within an ancient, historic, current, and future setting.

TAS is most frequently used by TCG to provide ecological information when assessing operational, strategic, and regional land and resource matters such as EAs, referrals, or land use plans. TAS ecological themes can be modified into Tahltan surrogates (e.g., Tahltan Wildlife Habitat Mapping). This information can be used with governments, proponents, and public to provide land use directions but without sharing any sensitive information.

4.2.5. Archaeology

Archaeological sites provide physical, on-the-ground evidence for land use and occupation and time depth. As such, they an important part of Indigenous Knowledge.

The BC Archaeology and Yukon Heritage Branches maintain databases of archaeology sites and archaeologists working under permit must register all identified archaeology sites with these branches. However, most archaeological sites are unrecorded as only a fraction of the Territory has been surveyed under permit.

Archaeological evidence can have significant time depth and provide additional physical evidence of Tahltan land uses and occupancy for the past generations over the Tahltan Continuum.

4.2.6. Current Use and Management of Tahltan Territory

Tahltan Knowledge is not static and needs updating on current uses to support Tahltan governance as elaborated on below. For EA processes, this is required to add to the knowledge set and support identifying additional current and future uses for the area.

This can be accomplished under additional knowledge collection through Tahltan Knowledge processes, or as part of socio-cultural assessments.

4.2.6.1. Ancient and Historic Knowledge

Existing Tahltan Knowledge data sources, including additional elder interviews, will be used for Eskay Creek to collate the existing Tahltan Knowledge for the Areas of Interest (AOI), review existing information, and summarize main themes for the Eskay Creek Hybrid AIR.

4.2.6.2. Current and Future Uses Knowledge

As part of the collection and application of Tahltan Knowledge, is the importance of community interviews and data collection for current and future Tahltan values and uses. This information will be collected through Tahltan Land Use and Occupancy Study, additional community interviews, or as part of the Tahltan Socio-cultural assessments for Eskay Creek.

4.2.7. Synthesis of Tahltan Knowledge for Areas of Interest (AOI)

The review and synthesis of Tahltan Knowledge, gap analysis, summarizing of key themes and stewardship principles, all provide directions on the establishment of:

- Tahltan Values;
  - Synthesis of key values and importance of values across the Tahltan Continuum;
  - includes archaeological sites, environmentally or culturally sensitive areas, wildlife, fish, plants, rivers, waterbodies, other features important to the area and the Tahltan connection and stewardship principles related to them; and,
  - Current and future socio-cultural and stewardship requirements for identified values;
- Scales of Assessments;
  - Scales of Assessments are focusing on appropriate scale (site specific, landscape, and regional) and appropriate level of significance to assess effects. This is achieved by:
    - Defining AOIs into more defined areas/zones across scales;
    - Summarizing the knowledge at each scale for Tahltan Values; and,
    - Summarizing the sensitivities and concerns with values at each scale both singularly and together;
- Sacred or sensitive areas across scales;
- Connectivity features across scales and values; and,
- Summarizing Tahltan management directions for the identified areas and values based on the directions, law and stewardship rules, Tahltan land use plans, and community directions.

The outcome of this work supports the sequencing of determining the sustainability, risk, and assessment approaches for Tahltan to consider in making decisions on Eskay Creek.

4.2.8. Tahltan High Sensitivity Areas

These sensitivities must be applied in conducting the assessment in relation to Eskay Creek:

- Tahltan Policy and Governance Positions as they relate land and resource development in the project footprint, and Tahltan AOI for Eskay Creek;
- Tahltan High Sensitivity Areas: for Eskay Creek;

- Site specific features such as gravesites, sacred sites, villages, assembly areas, harvesting sites;
- Landscape areas such as natal/spawning areas for fish and wildlife, family areas, sacred areas, gathering, celebration and assembly areas; and,
- Regional areas such as core areas in the Nation, clan areas, Chief/Head of Family areas, headwaters or source watersheds, large river corridors, upper elevation harvesting areas/plateaus.

The distribution, overall numbers, sensitivity, and density of the Tahltan Values within the areas must guide the assessment process.

4.2.9. Areas of Interest (AOI) / Assessment Boundaries

The AOI/Assessment Boundaries are captured as AOIs in a technical sense, but in application, Tahltan language will be applied to capture the significance of the areas for Eskay Creek. Whenever applicable in EAs and regulatory reviews, Tahltan language will be captured for communicating these key features.

> *"Tahltan place names do more than identify landmarks. They record a history of relationship to the land, provide a map of how to interact with the land, and memorialize a cultural identity that is tied to the land. …placenames tell a story, how a boy drowned in a lake, or a smokehouse collapsed, or a porcupine escaped in a rockpile. Other placenames indicate a point of navigational importance, such as Kiniskan (Kinaskan Lake), which means "raft crossing." Many names demonstrate an intimate knowledge of the flora and fauna of the country.*
>
> *Many of the elders interviewed for the Tahltan Ancestral Study make it clear that the placenames known to them only represent a small fraction of the placenames known by Tahltan in their parents' and grandparents' generation. Some of the elders know only the English names for certain creeks and mountains. What is lost in this transition from Tahltan to English placenames is about more than just language. Names embody the Tahltan relationship with the land. Language itself is a form of belonging." (Jones and McLaren 2020).*

As Jones and McLaren (2020) report:

> *"…governance within Tahltan society operated on three distinct but interacting levels: the tribal group, the clan, and the domestic group. Territorial rights corresponded to each of these levels. At the highest level, there was the collective interest of the Tahltan Nation to the whole of the tribal territory. At the lowest level, there was the ownership of discrete resource patches by households or domestic groups."*

Within the clans, each clan was responsible for the stewardship of their clan area while supporting access and use for all Tahltan and with permissions, non-Tahltans. Stewardship at this scale is the implementation of the principles and supporting communications between families and amongst clans on regional stewardship requirements and permissions.

Chiefs and heads of families set localized or specific stewardship rules within the clan by setting areas aside for recovery; setting fishing and hunting agreements; settling disputes between families and individuals on land use and harvesting; setting management rules for harvesting by sex, age, or by area to promote population health; and setting permissions for allowance to harvest, sharing requirements, and restrictions on commercial aspects of resources.

The AOIs for Eskay Creek have been developed through confidential Tahltan Knowledge and tools like the confidential Land Use and Occupancy Studies based on features such as:

- Regional;
  - Clan Area(s);
  - Head Family Territories;
  - Sacred Area(s);
  - Place Names; and,
  - Ethnographic and Tahltan History;
- Landscape and Site Specific;
  - Head Family Territories;
  - Family Areas;
  - Tahltan High Sensitivity Areas;
  - Ethnographic and Tahltan History;
  - Cultural Area(s);
  - Sacred Area(s);
  - Place Names;
  - Settlement and Assembly Area(s);
  - Harvesting and Gathering Area(s);
  - Environmentally Sensitive Areas;
  - Trade Area(s); and,
  - Warfare/Boundary Area(s); and,
- Project footprint - this must include the access corridor(s), power infrastructure, and general Project area.

Tahltan Knowledge is sensitive and confidential and is not part of the public domain, like the Hybrid AIR. Knowledge is being shared with the proponent through information sharing agreements and Tahltan and the EAO will share knowledge as identified in Part 11 of the Declaration Act Agreement.

The draft Regional and Cumulative Effects AOIs are identified for the Hybrid AIR (see Map 1 and Map 2).

The landscape AOIs are identified by general description and will be adjusted through community review and input during the Application Development and Review stage. Final boundaries will be available digitally during the Application Development and Review and Effects Assessment phases of the EA. The landscape AOIs include the following areas within Tahltan Nation Territory:

- Eskay Creek consent area as defined in the Declaration Act Agreement;
- Lower elevation river valleys of Iskut and Nigunsaw Rivers north and south of the consent area, including tributaries;
- Unuk River lower elevation valley from the mouth of Ketchum Creek and downstream to the Nation's border;
- Lower elevation river valleys of the Bell Irving River, including tributaries; and,

- Upper elevation areas of the Oweegee and Snowslide Ranges, Bell Irving headwaters, Skeena Mountain Ranges east of Bob Quin, Upper More and Forrest Kerr creeks drainages, Jekili River, and Zippa Mountain Range.

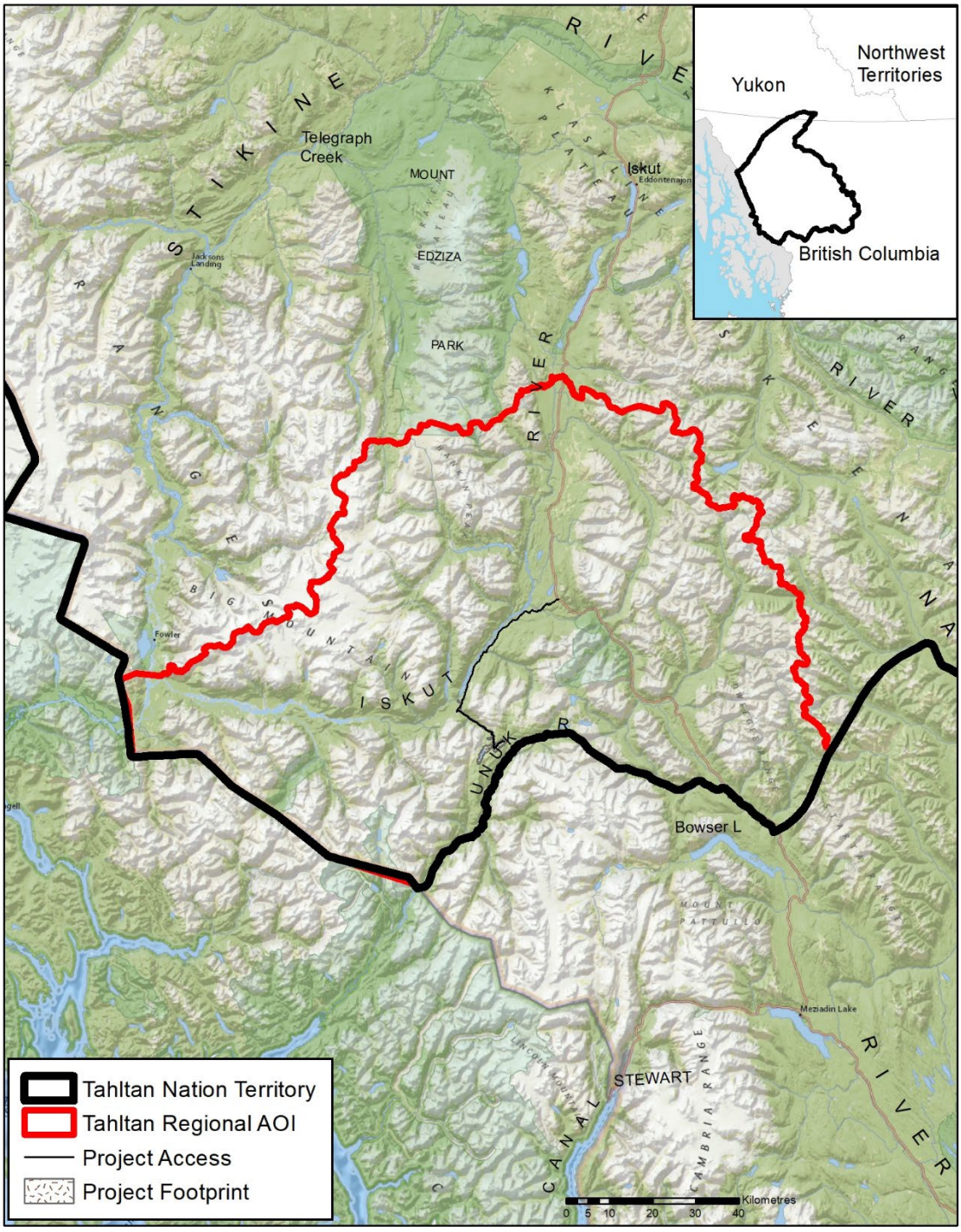
The site-specific AOIs are situated within the landscape AOIs, include sensitive confidential information, and the AOIs will be adjusted through community review and input. A similar approach for sharing information with the proponent and the EAO as identified above will be followed. Final boundaries may be available digitally during the Application Development and Review and Effects Assessment phases of the EA. In addition, the project footprint and infrastructure as defined in the Process Order documents will be considered as site-specific AOIs. Some of the general areas outside the sites situated within the landscape AOIs include:

- Mountain pass from the mouth of Ketchum Creek north to Iskut River (within the consent area);
- Sites identified within the consent area; and,
- Sites identified within the transportation corridor in Tahltan Nation Territory.

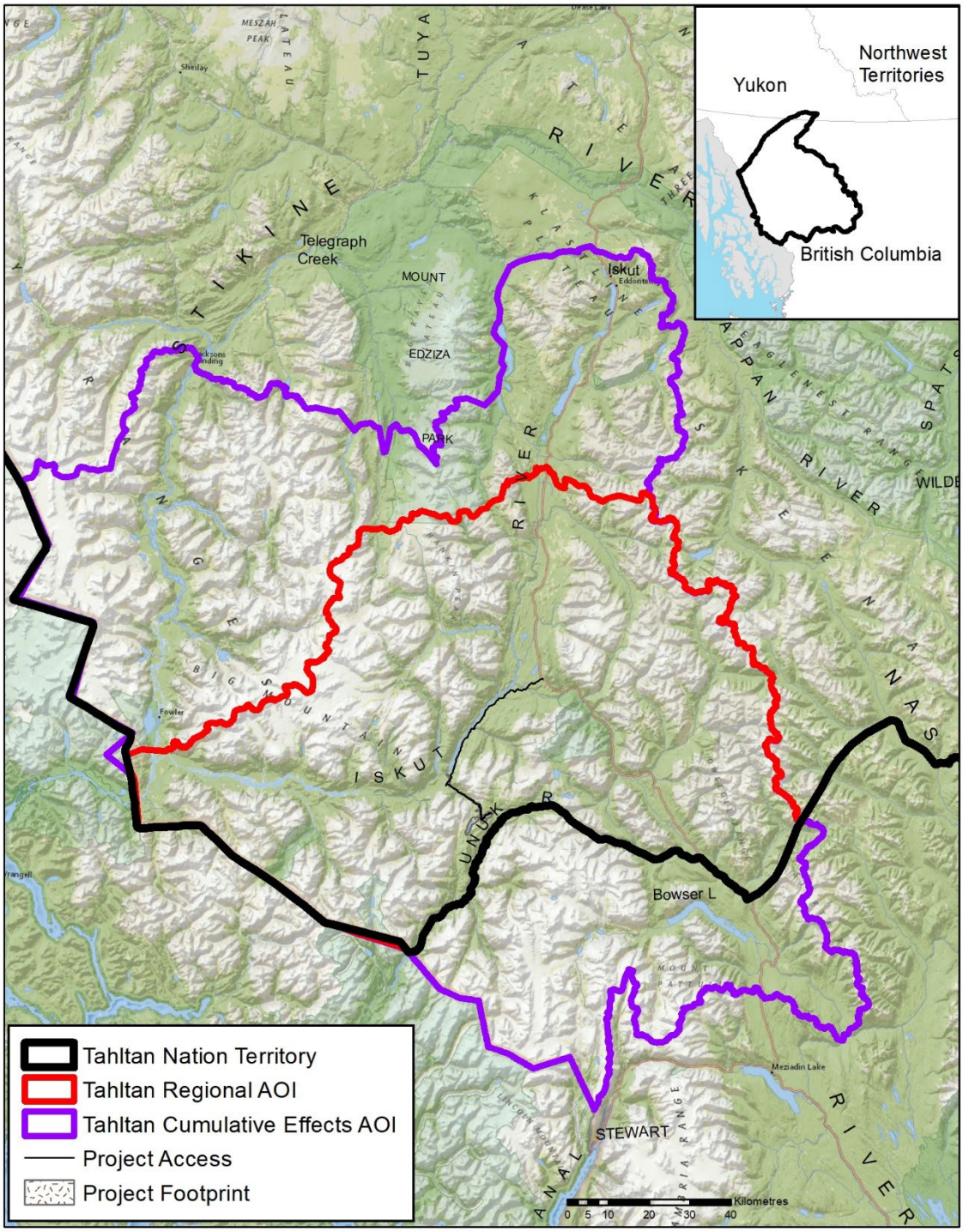
4.3. Tahltan Values

Tahltan Values include social, temporal, seasonal, cultural, environmental and cumulative values to be included in both Tahltan and scientific assessments. Tahltan using a holistic approach through grouping of values and moving away from single value assessments. For Eskay Creek, Tahltan will conduct internal work to identify Tahltan Values and the grouping of Values to be used in the EA. Tahltan will provide the information to the proponent and the EAO for the delivery of the of the Application Development and Review and Effects Assessment phases of the EA. The values to be grouped and assessed will be based on:

- Sacred areas such as Sheslay, Ice Mountain, and Klappan;
- High density areas of Tahltan Knowledge;
    - Head Family Territories;
    - Family Areas; Tahltan High Sensitivity Areas;
    - Ethnographic and Tahltan History;
    - Cultural Area(s);
    - Sacred Area(s);
    - Place Names;
    - Settlement and Assembly Area(s);
    - Harvesting and Gathering Area(s);
    - Environmentally Sensitive Areas;



Map 1. Tahltan Draft Regional Area of Interest



Map 2. Tahltan Draft Cumulative Effects Area of Interest

  - Settlement and Assembly Area(s);
  - Harvesting and Gathering Area(s);
  - Environmentally Sensitive Areas;
  - Trade Area(s); and,
  - Warfare/Boundary Area(s);
- Climate Change Refugia;
- Archaeology and Ethnographic Features;
- High elevation alpine and subalpine areas, plateaus;
- Enduring or Static features;
- Birthing, breeding, and wintering areas for fish and wildlife – spawning, overwintering, juvenile rearing, winter ranges, calving-lambing-kidding, and rut areas;
- Fish and wildlife movement and migration corridors;
- Wetland and wetland complexes, headwater watersheds;
- Large river corridors which capture valley bottoms and alluvial floodplains;
- Seral stage features like ancient and old forests across BEC;
- Site specific features like dens, south facing slopes, birch forests, mineral licks, wetland complexes, old forests, culturally modified trees (CMTs), high elevation areas or plateaus;
- Tahltan site specific features such as travel corridors, villages, gravesites, bridges, and other features;
- Water quality and quantity for ground and surface water;
- Ground and surface water connectivity, aquifers; and,
- Ecosystem communities and species important to Tahltan - for the Eskay Creek area, this must include those communities and key species listed below, in Section 4.3.1, and found within the draft Tahltan Regional Area of Interest (Map 1).
  - Fish and Fish Habitat;
  - Salmon;
  - Steelhead;
  - Freshwater Fish;
  - Wildlife and Wildlife Habitat;
  - Moose;
  - Mountain Goat;
  - Furbearers (grizzly bears, black bears, hoary marmot, wolverine, American marten);
  - Ground Squirrels, Hoary Marmot;
  - Raptors;
  - Upland Breeding Birds;
  - Waterbirds;

- Culturally Important Species to be identified;
- Vegetation and Ecosystems;
- Plant species of importance;
- Plant communities;
- Culturally important plants and plant communities;
- Culturally unique communities or ecological complexes; and,
- Common Tahltan and Eskay Creek Values also include Heritage Resources, Surface and Ground Water Resources, Aquatic and Terrestrial Ecosystems, Terrain and Soils, Human Health, Current and Future Uses, and Quiet Enjoyment of the Land.

Tahltan will be reviewing all Values identified for the Eskay Creek EA and identifying potential effects singularly and cumulative. All will be considered in the Tahltan Risk Assessment and Sustainability Assessment.

4.3.1. Tahltan Ecosystem Communities and Species of Importance

The Tahltan ecosystem communities and species of importance are described by biogeoclimatic ecosystem classification zone in Table 4.

Table 4: Tahltan Ecosystem Communities and Species of Interest

Biogeoclimatic Ecosystem Classification Zone[7]	Tahltan (Names will be updated in subsequent versions)	Resource	Tahltan Use
Alpine Tundra (includes both Boreal Altai Fescue Alpine, and Coastal Mountain-heather Alpine BEC Zones)		Cinquefoil	The stem and leaves of the plant were used to make yellow flower tea, good for relieving acid reflux or indigestion (Carlick and Carlick 2005).
		Caribou lichen	Boiled to make a tea and used for treating arthritis (Edzerza 2005). The lichen could also be chewed to treat a cough and sore throat (Carlick and Carlick 2005).
	Dih chō	Blue grouse	Hunted in the fall and winter (Carlick 2005; Marion 1983).
	Dih	Ptarmigan (willow and white-tailed)	Hunted opportunistically (Carlick 2005).
	Dediye, tseli	Groundhog (hoary marmot); ground squirrel (gopher)	Hunted in August and September, when they were fattest just prior to hibernation. They were split and dried for storage (Albright 1984: 185-186).
	Isbā, debēhe	Mountain goat, Stone sheep,	Hunted mostly in the fall. Smoked, dried and stored for winter (Carlick 2005).
Spruce-Willow-Birch and Boreal White and Black Spruce are combined here as there is significant overlap in floral and	Ts'ōstsiye	Balsam (sub-alpine fir)	Pitch used for healing cuts, wounds, eczema, rashes, bug bites and infections (Hamlin 2005).
	Gāẓa	Lodgepole pine	Pitch used as a poultice to treat cuts and sores. The pitch was chewed, and the juice swallowed to treat a sore throat (Hamlin 2005). The dark-coloured pitch also used to treat blood poisoning and to soothe toothache pain (Quock and Quock 2005).

[7] https://www.for.gov.bc.ca/hre/becweb/resources/codes-standards/index.html

Biogeoclimatic Ecosystem Classification Zone[7]	Tahltan (Names will be updated in subsequent versions)	Resource	Tahltan Use
faunal species utilized by the Tahltan.	Ts'ū	White spruce	The shoots of new growth boiled and drunk as a tea to treat a cold (Edzerza 2005).
		Stinging nettle	The leaves were eaten as a vegetable. Whole plant was boiled to make a good tea (Carlick and Carlick 2005).
		Cow-parsnip (wild rhubarb)	The inner stem was eaten in the spring before flowering. Plant cannot be eaten after June (Hamlin 2005; Quock and Quock 2005).
		Juniper	Leaves and berries used to treat heart problems and kidney and bladder infections (Carlick and Carlick 2005).
	Jije	Black huckleberry	A good source of nutrition. Most berries dried and stored with animal fat. Dried berries by themselves were soaked in water and eaten (Carlick and Carlick 2005).
	Echishchō	Blueberry	A good source of nutrition. Most berries dried and stored with animal fat. Dried berries by themselves were soaked in water and eaten (Carlick and Carlick 2005).
	Itl'et	Low bush cranberry	(Simonsen and Diaz 2005b).
	ishghohje	Soap berry	Unspecified medicinal purpose (Simonsen and Diaz 2005b).
		Fireweed	The leaves are good for treating burns. They were crushed and applied to the affected area. They could be dried and stored for later use (Edzerza 2005).
		Devil's club	Used to treat stomach pains and cancer. The roots were boiled and drank as tea (Callbreath 2005). Also used for swelling. The bark is boiled in water, which is then used for soaking or bathing as a treatment for rheumatic fever (Quock and Quock 2005).
	Khoh, sas, Isbā, debēhe, kedā, kuwegānh	Large mammals: grizzly bear, black bear, mountain goats, Stone sheep, moose, mule deer	Bears only eaten when their diet consists entirely of vegetation (Hamlin 2005). Moose, sheep, goat and bear were smoked and dried for winter use. Moose hunted all year. The fat of animals such as moose and goat were stored in the hide or in containers made from birch bark (Edzerza 2005).
	Tsa', naghā, dediye, ibā'e, dech'uwe, gah, tseli	Smaller mammals: beaver, marten, wolverine, groundhog, ground squirrel (or gopher), hoary marmot (or groundhog), porcupine, lynx, rabbits	Beaver is eaten in the spring and fall. Sometimes trapped and eaten during winter (Edzerza 2005). Rabbits were hunted in the winter (Carlick 2005).
		Labrador tea	Leaves used for making tea, which was good for treating arthritis (Hamlin 2005).
	Dih chō, dih	Blue grouse; Ruffed grouse; Spruce grouse	Grouse hunted in the fall (Carlick 2005).
	Tsabā'e	Rainbow trout	Fished opportunistically throughout the year.

Biogeoclimatic Ecosystem Classification Zone[7]	Tahltan (Names will be updated in subsequent versions)	Resource	Tahltan Use
Engelmann Spruce – Subalpine Fir	ts'ū	Engelmann Spruce	Pitch used as a poultice. Pitch was softened and applied to the cut or sore. Pitch was also chewed, and the juice swallowed to treat laryngitis, sore throat or a cold (Hamlin 2005).
	Ts'ōstsiye	Balsam (sub-alpine fir)	Pitch used for healing cuts, wounds, eczema, rashes, bug bites and infections (Hamlin 2005).
	Gāẓa	Lodgepole pine	Pitch used as a poultice to treat cuts and sores. The pitch was chewed, and the juice swallowed to treat a sore throat (Hamlin 2005). The dark-coloured pitch also used to treat blood poisoning and to soothe toothache pain (Quock and Quock 2005).
	Ts'ū	White spruce	The shoots of new growth can be boiled and drunk as a tea to treat a cold (Edzerza 2005).
		Stinging nettle	The leaves were eaten as a vegetable. Whole plant was boiled to make a good tea (Carlick and Carlick 2005).
		Cow-parsnip (wild rhubarb)	The inner stem was eaten in the spring before flowering. Plant cannot be eaten after June (Hamlin 2005; Quock and Quock 2005).
		Juniper	Leaves and berries used to treat heart problems and kidney and bladder infections (Carlick and Carlick 2005).
	Jije	Black huckleberry	A good source of nutrition. Most berries dried and stored with animal fat. Dried berries by themselves were soaked in water and eaten (Carlick and Carlick 2005).
	Echishchō	Blueberry	A good source of nutrition. Most berries dried and stored with animal fat. Dried berries by themselves were soaked in water and eaten (Carlick and Carlick 2005).
		Fireweed	The leaves are good for treating burns. They were crushed and applied to the affected area. They could be dried and stored for later use (Edzerza 2005).
		Devil's club	Used to treat stomach pains and cancer. The roots were boiled and drank as tea (Callbreath 2005). Also used to for swelling. The bark is boiled, and the water used for soaking or bathing in to treat rheumatic fever (Quock and Quock 2005).
	Khoh, sas, Isbā, kedā, kuwegānh	Large mammals: grizzly bear, black bear, mountain goats, moose, mule deer	Bears only eaten when their diet consists entirely of vegetation (Hamlin 2005). Moose, goat and bear were smoked and dried for winter use. Moose hunted all year. The fat of animals such as moose and goat were stored in the hide or in containers made from birch bark (Edzerza 2005).
	Tsa', naghā, dediye, ibā'e, dech'uwe, gah, tseli	Smaller mammals: beaver, marten, wolverine, groundhog, ground squirrel (or gopher), hoary marmot (or groundhog), porcupine, lynx, rabbits	Beaver is eaten in the spring and fall. Sometimes trapped and eaten during winter (Edzerza 2005). Rabbits were hunted in the winter (Carlick 2005).

Biogeoclimatic Ecosystem Classification Zone[7]	Tahltan (Names will be updated in subsequent versions)	Resource	Tahltan Use
Coastal Western Hemlock and Mountain Hemlock Zones		Red alder	Bark is used to make a tea for treating cold sores (Quock and Quock 2005).
		Paper birch	Bark and leaves used to make a tea that is good for high blood pressure (Carlick and Carlick 2005).
		Choke cherry	The berries are boiled and squeezed. The juice that is collected is used to make a jam, jelly or syrup (Quock and Quock 2005).
	Ishghohje	Soapberry or soopolallie	The bark used as a laxative. The inner green bark was soaked in hot water and drunk to treat constipation. The leaves can be mashed and applied to a bee sting to relieve irritation (Carlick and Carlick 2005).
		Prickly rose	Rosehips are used for vitamins. The berries are eaten without the seeds (Quock and Quock 2005).
	Gokhē', ideni	Salmonberry; highbush cranberry; black and red currant; thimbleberry; Kinnikinnick	A good source of nutrition. Most berries dried and stored with animal fat. Dried berries by themselves were soaked in water and eaten (Carlick and Carlick 2005).
		Deer fern; lady fern	Rhizomes gathered in spring or fall. Roasted and eaten with bear grease (Albright 1984).
		Caribou weed or Aleutian mugwort	Leaves used for many different ailments: colds, flu, headache, stomach problems, sore throat and cold sores. Boil the leaves to soften and place on cuts or open wounds. (Callbreath 2005).
		Lambsquarters or pigweed	Leaves were eaten as a vegetable, either boiled or eaten raw (Hamlin 2005).
		Shrubby cinquefoil	Stem and leaves made into a tea and used for indigestion (Carlick and Carlick 2005).
	Khoh, sas, Isbā, kedā, kuwegānh	Large mammals: grizzly bear, black bear, mountain goats, moose, mule deer	Bears only eaten when their diet consists entirely of vegetation (Hamlin 2005). Moose, goat and bear were smoked and dried for winter use. Moose hunted all year. The fat of animals such as moose and goat were stored in the hide or in containers made from birch bark (Edzerza 2005).
	Tsa', naghā, dediye, ibā'e, dech'uwe, gah, tseli	Smaller mammals: beaver, marten, wolverine, groundhog, ground squirrel (or gopher), hoary marmot (or groundhog), porcupine, lynx, rabbits	Beaver is eaten in the spring and fall. Sometimes trapped and eaten during winter (Edzerza 2005). Rabbits were hunted in the winter (Carlick 2005).
	Āseda, tsabā'e, łuwe, dēk'āne, gēs	Steelhead; rainbow trout; Dolly Varden; chinook, coho, sockeye, pink, chum; lingcod; and grayling.	The intestine, heart, head, sperm and eggs of sockeye and chinook were eaten (Carlick and Carlick 2005).

Biogeoclimatic Ecosystem Classification Zone[7]	Tahltan (Names will be updated in subsequent versions)	Resource	Tahltan Use
Interior Cedar – Hemlock	ts'ū	White spruce	The shoots of new growth can be boiled and drunk as a tea to treat a cold (Edzerza 2005).
	Chabā'e	Poplar (trembling aspen)	The bark is boiled with caribou weed leaves to make a tea. Burls from fungus growing on the tree were burned to make a smudge that kept insects away (Quock and Quock 2005).
	Ładadūz̲	Black cottonwood	The roots of this tree were broken up and boiled to make a tea. Only the finest roots were used. The tea was drunk to treat rheumatism and coughs (Quock and Quock 2005).
	Ts'ōstsiye	Balsam (sub-alpine fir)	The pitch used to treat a sore throat. Soften the pitch by heating, dip a grouse feather in the pitch and brush into the throat. Balsam sap was also used for treating sexually transmitted diseases and for general nutrition (Quock and Quock 2005).
		Yarrow	Used for pain and insect bites (Quock and Quock 2005). Flowers are boiled and used to treat fevers (Carlick and Carlick 2005).
		Labrador tea	Leaves used for making tea, which was good for treating arthritis (Hamlin 2005).
	Dih chō, dih	Blue grouse; Ruffed grouse; Spruce Grouse	Grouse hunted in the fall (Carlick 2005)
	khoh, sas, Isbā, kedā, kuwegānh	Large mammals: grizzly bear, black bear, mountain goats, moose, mule deer	Bears only eaten when their diet consists entirely of vegetation (Hamlin 2005). Moose, goat and bear were smoked and dried for winter use. Moose hunted all year. The fat of animals such as moose and goat were stored in the hide or in containers made from birch bark (Edzerza 2005).
	Tsa', naghā, dediye, ibā'e, dech'uwe, gah, tseli	Smaller mammals: beaver, marten, wolverine, groundhog, ground squirrel (or gopher), hoary marmot (or groundhog), porcupine, lynx, rabbits	Beaver is eaten in the spring and fall. Sometimes trapped and eaten during winter (Edzerza 2005). Rabbits were hunted in the winter (Carlick 2005).
	Dēk'āne, gēs̲	Salmon species	A major part of the Tahltan people's diet. Caught in late summer and dried and stored for winter use (Hamlin 2005). Rotten fish heads roasted in the fire and eaten (Carlick 2005).

4.3.2. Common Tahltan Values Requirements with Eskay Creek for Effects Assessment

This section provides an overview of the Tahltan Values in common with Section 11.0 that provides an understanding of Tahltan Risk Assessment requirements, including where standards and measurements of significance must be applied. In relation to application of Tahltan standards and significance measurements, where provincial or federal criteria exist in statute, the approach is not to be in conflict with the statute but meet or beat the legal requirement. Where they exist in policy or guidelines then the approach may be based on Tahltan policy or guidelines.

In relation to provincial or federal statutes, the information is found in Section 11.0.

4.3.2.1. Ground Water

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local groundwater conditions based on Tahltan Knowledge;
- Provide groundwater information used to support development or inform water balance and water quality models;
- Provide groundwater water balance and water quality models information and effects for Tahltan AOI;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value; and,
- Describe available Tahltan Knowledge and/or local knowledge related to groundwater.

The description of existing conditions for the Groundwater Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Groundwater that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.2. Surface Water

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local surface water conditions based on Tahltan Knowledge;
- Provide surface water information used to support development or inform water balance and water quality models, if required for the assessment;
- Provide surface water balance and water quality models information and effects for Tahltan AOI;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value; and,
- Describe available Tahltan Knowledge and/or local knowledge related to surface water.

The description of existing conditions for the Surface Water Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Surface Water that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.3. Terrain and Soils

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local terrain and soil conditions based on Tahltan Knowledge, where applicable;
- Provide relative technical terrain and soil information generated from Section 11.7.3 used to support development or inform the assessment and/or Tahltan AOI;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to terrain and soils.

The description of existing conditions for the Terrain and Soils Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Terrain and Soils that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.4. Aquatic Resources

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local aquatic resources conditions based on Tahltan Knowledge, where applicable;
- Provide aquatic resources information used to support development or inform the assessment;
- Provide relative technical information generated from Section 11.8.3 used to support development or inform the assessment and/or Tahltan AOI;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to aquatic resources.

The description of existing conditions for the Aquatic Resources Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Aquatic Resources that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.5. Fish and Fish Habitat

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local fish and fish habitat conditions based on Tahltan Knowledge, where applicable;
- Provide fish and fish habitat information used to support development or inform the assessment;
- Provide relative technical information generated from Section 11.8.3 used to support development or inform the assessment and/or Tahltan AOI;
- Provide maps showing key watercourses and waterbodies;
- Describe and provide maps of relevant fish habitats, including critical habitat or sensitive habitat areas; habitat information; and life stages for Tahltan Values;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to fish and fish habitat.

The description of existing conditions for the Fish and Fish Habitat Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Fish and Fish Habitat that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.6. Vegetation and Ecosystems

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local vegetation and ecosystem conditions based on Tahltan Knowledge, where applicable;
- Provide vegetation and ecosystem information used to support development or inform the assessment;
- Provide relative technical information generated from Section 11.9.3 used to support development or inform the assessment and/or Tahltan AOI;
- Provide maps showing key vegetation and ecosystems;
- Describe and provide maps of relevant fish habitats, including critical ecosystems/vegetation communities or sensitive ecosystems/vegetation communities; ecosystems/vegetation communities information; and life stages for Tahltan Values;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to vegetation and ecosystems.

The description of existing conditions for the Vegetation and Ecosystems Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Vegetation and Ecosystems that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.7. Wildlife and Wildlife Habitat

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local wildlife and wildlife habitat conditions based on Tahltan Knowledge, where applicable;
- Provide wildlife and wildlife habitat information used to support development or inform the assessment;
- Provide relative technical information generated from Section 11.10.3 used to support development or inform the assessment and/or Tahltan AOI;
- Provide maps showing key vegetation and ecosystems;
- Describe and provide maps of relevant wildlife and wildlife habitat, including critical wildlife and wildlife habitat or sensitive wildlife and wildlife habitat; wildlife and wildlife habitat information; and life stages for Tahltan Values;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to wildlife and wildlife habitat.

The description of existing conditions for the Wildlife and Wildlife Habitat Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Wildlife and Wildlife Habitat that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.8. Human Health

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local human health conditions based on Tahltan Knowledge, where applicable;
- Provide human health information, including Tahltan traditional foods, water, land, and cultural requirements used to support development or inform the assessment;

- Describe the status of food security for Tahltan;
- Provide relative technical information generated from Section 11.11.3 used to support development or inform the assessment and/or Tahltan AOI;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to human health requirements.

The description of existing conditions for the Human Health Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Human Health that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.9. Heritage Resources

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local Tahltan cultural and archaeological conditions based on Tahltan Knowledge, where applicable;
- Describe the archaeological, paleontological, and historic site conditions in the Eskay Creek area;
- Describe the Tahltan Continuum conditions in the Eskay Creek area;
- Provide Tahltan cultural and archaeological, including Tahltan heritage and cultural requirements used to support development or inform the assessment;
- Describe the status of cultural security for Tahltan;
- Provide relative technical information generated from Section 11.15.3 used to support development or inform the assessment and/or Tahltan AOI;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to heritage requirements.

The description of existing conditions for the Heritage Resources Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Heritage Resources that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.10. Current and Projections of Future Use of Land and Resources for Traditional Purposes

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local Tahltan current and projections of future land and resource conditions based on Tahltan Knowledge, where applicable;
- Describe the Tahltan land uses and occupancy in the Eskay Creek area including governance and stewardship systems, and other relevant materials;
- Provide relative technical information generated from Section 11.16.3 used to support development or inform the assessment and/or Tahltan AOI;
- Describe the socio-cultural environment, identifying Tahltan current and future land and resource uses, demographic characteristics and major socio-cultural concerns of the Nation;
- Describe the status of cultural security for Tahltan for current and futures uses of the area;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to current and future land and resources use for traditional purposes.

The description of existing conditions for the Current and Future Uses Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Current and Future Uses that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.3.2.11. Quiet Enjoyment of Land

The Application must identify the spatial, temporal, and boundaries, as applicable to the Tahltan Value, including maps, in a manner consistent with Section 4.2.9.

As applicable, the Application must:

- Describe the regional and local Tahltan current and future land and resource conditions based on Tahltan Knowledge, where applicable;
- Describe the Tahltan land uses and occupancy in the Eskay Creek area including governance and stewardship systems, and other relevant materials;
- Describe the socio-cultural environment, identifying Tahltan quiet enjoyment of the land, demographic characteristics and major socio-cultural concerns of the Nation;
- Provide relative technical information generated from Section 11.17.3 used to support development or inform the assessment and/or Tahltan AOI;

- Describe the status of quiet enjoyment of the land for Tahltan;
- Provide Tahltan Standards and Significance Measurements for the assessment of this value, if applicable; and,
- Describe available Tahltan Knowledge and/or local knowledge related to quiet enjoyment of the land for traditional purposes.

The description of existing conditions for the Quiet Enjoyment of the Land Value must explain if and how other past and present Project and activities have affected or are affecting Tahltan Values, and to support the consideration of Eskay Creek effects and cumulative effects.

The Application must provide a detailed description of the methods used to assess positive, negative, and cumulative effects to Quiet Enjoyment of the Land that are anticipated as a result of Eskay Creek and present the results of this assessment, after taking Tahltan mitigation and follow up strategy into account following information requirements described in Section 4.6.

4.4. Tahltan Socio-Cultural Assessments

Information from these assessments must be included to assist in capturing the current context for lands in the AOIs as well as guide the assessments of future states of the land for generations to come.

The Application must include socio-cultural assessments generated for this project or relevant information sources. The information must be used to support assessing past, current, and future effects assessments for this EA. Tahltan will work with the proponent on consolidating of relevant socio-cultural assessments and will include this information collaboratively during the Application Development and Review stage of the EA.

4.5. Effects

The methods and approaches identified in this section must be considered for the scope of Tahltan Values identified for Eskay Creek. A final detailed list of values will be developed and provided to the proponent and EAO during the Application Development and Review stage of the EA and will include the Values and groupings listed in the introduction to Section 4.3, as well as the common environmental and socio-cultural Values described in Sections 4.3.2 and 4.4, respectively.

4.5.1. Assessment Boundaries

The Application must describe the spatial, temporal, administrative, and technical boundaries of each Tahltan Value included in assessing the potential adverse and positive effects of Eskay Creek and must be based on the criteria identified in Section 4.2.9.

The AOI must be based primarily on Tahltan Knowledge sources for the same value, with each having unique stand-alone assessment requirements that will be defined by Tahltan. A Regional AOI has been identified for Eskay Creek (Map 1). However, Information on landscape or site specific AOI boundaries for each Tahltan Value must be included in the appropriate Tahltan Value sections of the Application.

The following spatial boundaries must be used in the Effects Assessment:

- **Project Footprint** is the area of land or water associated with the proposed sites for all physical structures and activities that comprise the Project;

- **Site Specific AOI** refers to an area within effects are expected to occur at a scale or magnitude specific to the sensitivity of the value. Multiple AOI can be found within the Regional AOI;
- **Landscape AOI** refers to an area defined at a broader scale but still with effects expected to occur at a scale or magnitude specific to the sensitivity of the value. Multiple AOI's can be found within the Regional AOI; and,
- **Regional AOI** is the broadest spatial extent over which project specific related effects of Eskay Creek are to be assessed against Tahltan Values (Map 1). However, when considering cumulative effects, the AOI may expand to capture all the relevant Tahltan Values and resource development pressures.

4.5.2. Existing Conditions

Existing conditions in the AOI must be assessed based on the ancient, historic, and current Tahltan social, cultural, environmental, and economic values. At the defined Tahltan Regional, Landscape, Site Specific scales, the current distribution, density, sensitivity, abundance, and status of Tahltan Values must be assessed using a back casting approach of 1-3 generations (Short-Term), 7-15 generations (Long-Term), and today's current conditions, as possible, based on the availability of relevant Tahltan Knowledge. Existing conditions are identified by the human/anthropogenic footprint represented by:

- Distribution, and density of roads (including non-status roads);
- Permanent loss of forest cover (mine sites, housing);
- Orphan mine sites;
- Current mining projects (including placer);
- Other industrial activities, and reclaimed sites;
- Percentage of forest cover removal and seral classes;
- Current tenures related to human footprint including;
    - Timber supply volumes and rate of cut, forestry tenures, cutting permits, special use permits;
    - Notice of Work Permits, mineral leases, and tenures;
    - *Lands Act* tenures, licences, grants, leases, and fee simple lands;
    - Commercial tenures, concessions, licences, and permits;
    - *Water Act* tenures, licences, grants, leases, and Water Sustainability Plans; and,
    - Range or agriculture tenures or concessions; and,
- Percentage of forest cover removal and seral classes.

4.5.3. Potential Effects

Potential effects must be measured using a forecasting approach of 1-3 generations (Short-Term) and 7-15 generations (Long-Term) against the Existing Conditions identified in the above section.

4.5.4. Effects Management and Scales for Significance

Each Tahltan Value must be designated with at least one scale of significance to be assessed under Effects Management. It is expected that there will be groupings of most items at the scales identified; however due to the significance of some

Tahltan Values, additional specific scales and significance may be required to be included to be assessed along with the groups.

For example, natal, breeding, spawning or overwintering areas for a Tahltan Value may be assessed as having significance at a local effect with high magnitude of effects if lost based on Tahltan Knowledge, and risk factors. This is likely to be in conflict with western science which has a bias of measuring the importance of these features at a landscape or population scale.

It is possible that measuring effects, and the scales of significance between western science and Tahltan Knowledge will have competing outcomes.

In assessing positive, negative, and cumulative effects, any mitigation measures proposed in the hierarchy to protect, buffer, avoid, mitigations, compensate, or restore from the potential effects of the Project; the proposed mitigation measures and offsetting must include the detail and assessment to achieve restitution for any damage caused by those effects through replacement, restoration, compensation or other means.

Methods for assessing both the positive and negative effects for significance will be finalized through community review and directions through the Application Development and Review stage of the EA. Significance will be based on the features identified in Sections 4.5.5 and 4.5.6 and will be framed on the following approaches for regional, landscape, and site-specific scales:

- Declaration Act Agreement requirements, including Schedule C and D;
- Tahltan Impact Assessment Policy;
- The health of the land as a whole, including all parts of the land (e.g., earth, water, air, living beings and spirits) and the connections between those parts. Potential effects and significance of effects on the overall health of the land and water is included;
- Cover all of Tahltan land and water, including areas that have already been designated through other processes;
- Be grounded in Tahltan's relationship to the land including social, cultural, environmental, and economic dimensions of that relationship. Potential effects to Tahltan way-of-life and Tahltan Rights are included in assessing significance;
- Consider conditions and potential effects backwards and forwards in time using generational cycles to the health of the land and Tahltan way-of-life; and,
- Consider the future and current potential effects on current and future land use objectives and conditions.

4.5.5. Assessing Positive Effects

Through the back and forecasting approaches against the existing conditions for Eskay Creek, the Application must for each Tahltan Value assess, to Tahltan Standards, the rate and outcome of estimated effects. Positive effects are defined as maintaining or increasing the value into the future from the existing conditions, and the Application must:

- Identify and assess predicted positive effect;
- Describe how long-term trends have been considered;
- Characterize the positive effect;
- Identify the risk and confidence with the interpreted positive trends; and,

- Describe how the positive effect may be monitored and adaptively managed.

Tahltan will provide the criteria/terms used to characterize each residual effect (Tahltan Value specific definitions will be described if required):

- Magnitude;
- Extent;
- Duration;
- Reversibility;
- Frequency;
- Affected populations;
- Confidence in information and contingencies; and,
- Risk and uncertainty.

Prior to the assessment, Tahltan will review and determine the analytical methods used to assess negative residual effects, including modelling approaches and the assumptions used in analytical methods.

4.5.6. Assessing Negative Effects

Through the back and forecasting approaches against the existing conditions for Eskay Creek, the Application must, for each Tahltan Value assess, to Tahltan Standards, the rate and outcome of estimated effects. Negative effects are defined as decreasing the value into the future from the existing conditions, and the Application must:

- Identify and assess predicted negative effect;
- Describe how long-term trends have been considered;
- Characterize the negative effect;
- Identify the risk and confidence with the interpreted negative trends; and,
- Describe how the negative effect may be monitored and adaptively managed.

Tahltan will provide the criteria/terms used to characterize each residual effect (Tahltan Value specific definitions will be described if required):

- Magnitude;
- Extent;
- Duration;
- Reversibility;
- Frequency;
- Affected populations;
- Confidence in information and contingencies; and,
- Risk and uncertainty.

Prior to the assessment, Tahltan will review and determine the analytical methods used to assess negative residual effects, including modelling approaches and the assumptions used in analytical methods.

4.5.7. Cumulative Effects Assessment

With cumulative effects assessment, Tahltan are aware of the recent British Columbia Supreme Court Decision (*Yahey v. British Columbia – 2021 BCSC 1287*) related to cumulative impacts and the diminishing of Blueberry First Nation's ability to exercise their rights in their traditional territory. The information from the decision must be used to provide directions on the application of the assessments. This will be further defined during the Application Development and Review stage.

Similar to Tahltan Effects Assessment approaches, including the approaches for determining significance, a back and forecasting of changes in the identified AOIs is required with the inclusion of the additional potential projects jointly identified within the Eskay Creek regional, landscape, and site-specific study areas.

The determination of relevant projects, areas to be measured, downstream and lateral effects is a shared responsibility of all parties. Tahltan require to be involved in the final decision on this matter to ensure consistency using Tahltan and western science requirements between project specific and cumulative effects assessments in the Eskay Creek Application.

Tahltan have identified the general description for AOIs, identified an area for the cumulative effects assessment (Map 2) and will finalize the detailed rationales for the Values to be included in the cumulative effects assessment during the Application Development and Review stage of the EA. In addition, Tahltan have indicated the requirements for the:

- Spatial and temporal boundaries; and,
- Methods used to determine potential cumulative effects, including data sources and collection methods, data analysis, and any other relevant assessment information.

The Application must meet the below requirements to the satisfaction of Tahltan:

- Identify potential cumulative effects to each Tahltan Value selected by comparing the existing and future conditions. The effects of past and existing activities (activities that have been carried out) are to be used to contextualize the current state of Tahltan Values. Climate change is to be considered as part of future conditions or provide a rationale to justify the exclusion of climate change impacts on Tahltan Values;
- Describe the mitigation measures that are technically feasible to eliminate or reduce adverse cumulative effects, including:
    - The criteria or rationale used to determine technically feasible mitigation measures and their relation to Tahltan sustainability and risk criteria;
    - An assessment of the effectiveness of the measures and adaptive management measures applied to mitigate the cumulative effects;
    - What are the risks associated with both the ability and the inability to manage or mitigate these effects; and,
    - Quantify, and evaluate residual cumulative effects using the project specific effects as described above.

4.6. Monitoring, Mitigations, and Contingencies

Each Tahltan Value, Socio-cultural feature, and High Sensitivity Area, the Application must:

- Identify Existing, Short-Term, Long-Term potential future effects conditions which will result from Eskay Creek, and the rate of change by scale type;
- Identify the baseline information, level of confidence with the information, and risk;
- Apply the mitigation hierarchy of protect, buffer, avoid, mitigations, compensation, and restoration;
- Where spatial and temporal mitigations are being applied, identify the confidence in the outcomes, risk associated with the application, contingencies with the application, and outcomes if the application is not achieved; and,
- Where compensation approaches are being considered, a similar requirement as above is required, and compensation approaches include Tahltan requirements for values not currently considered by other jurisdictions, such as wildlife (Tahltan wildlife compensation draft policy available upon request).

4.6.1. Follow-up Strategy

Where a positive or negative effect and/or cumulative effect has been identified for a Tahltan Value, the Application must include a description, where appropriate, of a follow-up strategy that:

- Identifies the measures to evaluate the accuracy, precision, and confidences of the predicted effects;
- Identifies the uncertainties, risks and confidence in the contingencies the proposed measures will have the required outcomes;
- Identifies the monitoring requirements to ensure the mitigation measures are implemented as planned and evaluate the effectiveness of proposed mitigation measures to meet Tahltan requirements;
- Identifies the regulatory instruments from all governments that include a monitoring requirement for the Tahltan Value;
- Identifies the requirements for Tahltan directions on the design, implementation, evaluation of the follow-up results, as well as any updates, of any monitoring or mitigation strategies resulting from the effects assessment; and,
- Identifies funding, obligations, and duration for Tahltan monitoring and assessment of follow-up activities with other governments and the proponent.

4.7. Summary of Effects on Current and Future Generations

The Application must summarize the analysis and conclusions for Tahltan environmental, economic, social, cultural and health Values that contribute to Eskay Creek's positive or negative effects on current and future generations (Short-Term and Long-Term).

The Application must:

- Describe how Tahltan input and directions related to effects on current and future generations was delivered and how Eskay Creek has changed as a result;
- Demonstrate how any strategic direction from Tahltan was considered in the overall assessment of Eskay Creek;

- Provide any mitigation measures proposed to distribute positive and negative effects more equitably over time (e.g., across generations);
- Discuss the potential outcome that residual effects to Tahltan Values will have on both current and future generations;
- Discuss the type(s) of economic growth that would be generated by Eskay Creek, potential legacies and benefits to Tahltan, and how this growth would be distributed over time; and,
- Identify how the Project is or is not aligned with Tahltan Sustainability Requirements.

4.8. Summary of Eskay Creek's Ability to Meet Tahltan Sustainability Requirements

The Application must identify how the short- and long-term effects, mitigations, monitoring, and management strategies identified under a Tahltan Assessment is consistent with Tahltan Sustainability Requirements and does not pose a risk to the Nation.

The Application must report on the Tahltan Sustainability Requirements; delivery of the assessment to the satisfaction of Tahltan; issues of importance to Tahltan; the analysis on potential effects of Eskay Creek with the identified mitigations, contingencies, uncertainties, and confidences; and the estimated positive, neutral, or negative effects with their related levels of significance.

4.9. References

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5.0 NISG̲A'A NATION

5.1. Overview

The Application must include an assessment of the effects on Nisg̲a'a Nation, as identified in the Process Order.

This assessment in the Application must be informed by engagement with Nisg̲a'a Nation, as required in the Assessment Plan and in Section 25.4.

5.2. Nisg̲a'a Nation Context

The Application must include:

- Background information about Nisg̲a'a Nation's cultural and political context, including information regarding the Nisg̲a'a Final Agreement (NFA);
- A description of the Nisg̲a'a Nation Treaty Rights, including background information on ethnography, language, governance, economy, population, communities, Reserves, Indigenous land use plans (as required under Section 3.3), health and social conditions and any other contextual information Nisg̲a'a Nation views as important to understanding the impacts of the Project on the Nation; and,
- A map that identifies Nisg̲a'a Lands, the Nass Area, and the Nass Wildlife Area under the NFA, as well as the Project location.

5.3. Summary of Engagement

The Application must:

- Provide a summary of past and planned engagement activities that describes the efforts taken to seek the views of Nisg̲a'a Nation with respect to the Project including:
  - The engagement activities undertaken with Nisg̲a'a Nation including the timeframe, means, and results of engagement;
  - Efforts to engage diverse populations of the Nisg̲a'a Nation community[8], in culturally appropriate ways, including groups identified by gender, age, or other community relevant factors;
  - How engagement activities by the proponent support Nisg̲a'a Nation to understand the Project and its effects on the Nation and its rights; and,
  - Nisg̲a'a Nation's views on the proponent's engagement approach and resolution of issues raised, including a summary of changes implemented or proposed to the Nisg̲a'a Consultation Plan resulting from Nisg̲a'a Nation feedback or experience from consultation to date; and,
- Provide an analysis of the input received from Nisg̲a'a Nation with respect to the project including:
  - Description of how the proponent responded to questions, comments and issues raised by Nisg̲a'a Nation, the Nation's perspective on the resolution of issues, how unresolved input has been addressed in the

[8] Any direct engagement with Nisg̲a'a Nation community members must be coordinated and approved by NLG

Application, and/or how unresolved input will be addressed through the EA or another regulatory process or government initiative;

- Where and how Nisg̲a'a Nation perspectives were integrated into or contributed to decisions regarding the project, including:
  - Development and collection of existing conditions information;
  - Plans for construction, operation, closure and post-closure or decommissioning;
  - Identification of VCs;
  - Describe any publicly available arrangement or agreement between the proponent and the Nisg̲a'a Nation for collaboration on the development of the Application or delivery of the proposed project. This includes agreements related to the delivery of studies and capacity funding agreements; and
  - Efforts to engage diverse populations of the Nisg̲a'a Nation community[9] in culturally appropriate ways, including groups identified by gender, age, or other community relevant factors to support the collection of information needed to complete analysis as per GBA Plus.

5.4. Information Sources

The Application must clearly identify sources of all information used in preparing the assessment of effects on Nisg̲a'a Nation, noting where information represents the views of Nisg̲a'a Nation, the proponent or otherwise. Information sources that include Indigenous knowledge must be clearly labeled as such.

5.4.1. Indigenous Knowledge

Regarding the collection and use of Indigenous knowledge, the Application must:

- Provide an outline of the steps taken by the proponent to work with Nisg̲a'a Nation to incorporate Nisg̲a'a Nation knowledge including a summary of any arrangements with Nisg̲a'a Nation regarding the use and application of Nisg̲a'a Nation knowledge;
- Provide a statement indicating that Nisg̲a'a Nation supports the characterization and application of any Indigenous knowledge contained within the Application and gives permission for its public disclosure;
- Describe how Nisg̲a'a Nation knowledge informed project design, the assessment, and proposed mitigation measures; and,
- If applicable, provide a plan for future cooperation between the proponent and Nisg̲a'a Nation to further incorporate Nisg̲a'a Nation knowledge into project implementation (for example, monitoring and management plans).

If additional information is required to conduct the analysis and assessment of effects on topics identified in paragraph 8(e) or (f) of the NFA, the proponent will, subject to any direction from EAO, consult with NLG and seek to reach agreement on terms of reference for the collection and integration of additional data.

[9] Any direct engagement with Nisg̲a'a Nation community members must be coordinated and approved by NLG

5.5. Environmental Effects Assessment (Pursuant to Chapter 10 Paragraph 8(e) of the Nisga'a Final Agreement)

5.5.1. Introduction

The Application must:

- List Nisga'a Nation Treaty interests identified in Table 5, as well as through engagement with Nisga'a Nation or otherwise;
- Summarize the VCs used in the assessment of effects on Nisga'a Nation and whether they were carried forward from the assessment of Section 25(2) assessment matters presented in Section 11.0 or developed specifically for the assessment of Nisga'a Nation Treaty interests;
- Describe any other assessment methods and analysis used to undertake the assessment of effects to Nisga'a Nation Treaty interests;
- Provide the proponent's analysis of whether or not the Project can reasonably be expected to have an adverse environmental effect on the residents of Nisga'a Lands, Nisga'a Lands, or Nisga'a Nation Treaty interests, as set out in the NFA, and the measures proposed by the proponent to prevent or mitigate those effects; and,
- Describe linkages with other Indigenous interests.

Table 5 outlines the relevant Chapter 10 Paragraph 8(e) Nisga'a Nation Treaty interests to be analyzed in the Application.

Table 5: Nisga'a Nation NFA Chapter 10 Paragraph 8(e) Concordance Table

NFA Reference	Nisga'a Nation Treaty Interest Identified in NFA Chapter 10 Paragraph 8(e)[1]	Valued Components Identified in Nisga'a Nation Guidance[2]	Related Section of Hybrid AIR
Chapter 8	Nisga'a Treaty right to manage and harvest Fish, including, specific allocations for: • Nass salmon (i.e., sockeye, pink, chinook, coho, and chum salmon originating in the Nass Area); • Nass steelhead (i.e., winter run and summer run steelhead originating in the Nass Area); and, • Eulachon (also known as Oolichan) within the Nass Area.	• Salmon (i.e., sockeye, pink, Chinook, coho, and chum); • Steelhead (winter run and summer run steelhead); and, • Eulachon.	• 3.4 (Indigenous Nation Arrangements); • 11.8 (Fish and Fish Habitat); • 11.13 (Non-traditional Land and Resource Use); • 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); and, • 13 (Malfunctions and Accidents).
Chapter 8	Nisga'a Treaty right to harvest non-salmon species of fish and aquatic plants, including marine mammals, for domestic purposes in the Nass Area.	• Non-salmon species (i.e., Rainbow Trout, Dolly Varden, Bull trout, Cutthroat trout and Pacific lamprey); • Freshwater aquatic plants (e.g., yellow pond lily, common cattail, peat moss); • Marine Mammals (i.e., Harbour Seal and Steller Sea Lion);	• 3.4 (Indigenous Nation Arrangements); • 11.5 (Groundwater); • 11.6 (Surface Water); • 11.8 (Fish and Fish Habitat); • 11.9 (Vegetation and Ecosystems); • 11.13 (Non-traditional Land and Resource Use);

NFA Reference	Nisga'a Nation Treaty Interest Identified in NFA Chapter 10 Paragraph 8(e)[1]	Valued Components Identified in Nisga'a Nation Guidance[2]	Related Section of Hybrid AIR
		• Marine Plants (Kelp beds, sub-tidal and intertidal seaweeds, sea asparagus, sea (marsh) grasses etc.); • Water Quality and Sediment Quality; and, • Water Quantity and Sediment Quantity.	• 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); and, • 13 (Malfunctions and Accidents).
Chapter 9	Nisga'a Treaty right to manage and harvest wildlife, including wildlife for domestic purposes in the Nass Wildlife Area, with specific allocations for: • Grizzly bear; • Moose; • Mountain goats; and, • Other species as designated through annual management plans.	• Moose; • Mountain Goat; • Grizzly Bear; • American Marten; • Fisher; • Wolverine; • Black Bear; and, • Grouse.	• 3.4 (Indigenous Nation Arrangements); • 11.10 (Wildlife and Wildlife Habitat); • 11.13 (Non-traditional Land and Resource Use); • 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); and, • 13 (Malfunctions and Accidents).
Chapter 9	Nisga'a Treaty right to manage and harvest migratory birds for domestic purposes in the Nass Area.	• Canada Goose; • Dabbling Ducks; and, • Diving Ducks (including Mergansers).	• 3.4 (Indigenous Nation Arrangements); • 11.10 (Wildlife and Wildlife Habitat); • 11.13 (Non-traditional Land and Resource Use); • 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); and, • 13 (Malfunctions and Accidents).
n/a	Botanical Forest Products	• Western Red Cedar; • Yellow Cedar; • Pine Mushroom; • Devil's Club; • Indian Hellebore; • Soopolallie; • Labrador Tea; and, • Black Huckleberry.	• 3.4 (Indigenous Nation Arrangements); • 11.9 (Vegetation and Ecosystems); • 11.13 (Non-traditional Land and Resource Use); • 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); and, • 13 (Malfunctions and Accidents).
Chapter 6	Nisga'a Treaty right to access to other lands:	• Visual Quality (from viewpoints on the Nisga'a Memorial Lava Bed Park, Nisga'a Lands, Nisga'a fee simple properties, and the Nisga'a Highway);	• 3.4 (Indigenous Nation Arrangements); • 11.3 (Air Quality); • 11.5 (Groundwater); • 11.6 (Surface Water);

NFA Reference	Nisga'a Nation Treaty Interest Identified in NFA Chapter 10 Paragraph 8(e)[1]	Valued Components Identified in Nisga'a Nation Guidance[2]	Related Section of Hybrid AIR
	• Agents, employees, and contractors of Nisga'a Nation, Nisga'a' Villages, Nisga'a Corporations and members of the Nisga'a Police Service and Nisga'a Institutions access to Nass Wildlife Area to carry out their responsibilities; and, • Nisga'a citizens reasonable access to Crown lands to allow for the exercise of Nisga'a Treaty rights and for the normal use and enjoyment of Nisga'a interests set out in the NFA.	• Air quality, aesthetic quality, quality and quantity of potable water and access for Nisga'a Lands and Nisga'a fee simple properties; • Other land related interests in the Nisga'a Treaty (Nisga'a Memorial Lava Bed Park and other provincially protected areas within the Nass Area); commercial recreation areas; guide outfitting territory; angling guide licences; traplines; water reservation for domestic, industrial and agricultural uses; water reservation for potential hydro power; intertidal bivalve harvesting areas; and, • Nisga'a citizens' access to other lands.	• 11.13 (Non-traditional Land and Resource Use); • 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); and, • 13 (Malfunctions and Accidents).

Notes:

[1] Nisga'a Final Agreement, April 27, 1999.

[2] Nisga'a Nation and Province of British Columbia. 2018. *Guidance for Assessment of Impacts on Nisga'a Interests*. Draft V2.10. November 2018.

5.5.2. Assessment Boundaries

The Application must define the assessment boundaries for the effects on Nisga'a Nation Treaty interests, including spatial and temporal boundaries. Spatial and temporal boundaries will be consistent, as appropriate, with the related section of the Hybrid AIR as noted in Table 5. Where relevant, administrative and technical boundaries should also be identified.

5.5.3. Existing Conditions

As applicable, the Application must:

- Describe historic and current use of the project area by Indigenous people over time and practices in the Project area regarding Nisga'a Nation Treaty interests (include reference to specific sites and species of interests, where applicable);
- Describe the relative importance of the project area and its surroundings, including any special characteristics or unique features, to the Indigenous interest; and,
- Describe how the Nisga'a Nation interest has been affected by cumulative effects to date.

5.5.4. Potential Effects

The Application must include an assessment of the effects to Nisga'a Nation Treaty interests. The Application must summarize effects assessments described in Section 11.0 and link them to the relevant Nisga'a Nation Treaty interests.

For each Nisga'a Nation Treaty interest listed in Table 5, the Application must consider in the following parameters:

- Ecological Effects: The extent that a given component of the ecosystem could be altered by the Project so as to cause an adverse effect on that component of the ecosystem;
- Treaty Right to Use: The extent that a given component of the ecosystem which is currently used or could be used in the future by Nisga'a citizens (regardless of actual levels of past or current use) could be altered by the Project so as to cause an adverse effect on the use of that component of the ecosystem by Nisga'a citizens (or Nisga'a entity); and,
- Human Health: The extent that a given component of the ecosystem could be altered by the Project so as to cause an adverse effect to the health of Nisga'a citizens and other residents of Nisga'a Lands who use that component of the ecosystem:

Only those Treaty rights that are identified as having an interaction with the Project will be carried forward.

In conjunction with the consideration of ecological effects, effects on Treaty right to use, and on human health, the proponent must carry out the following steps in support of the 8(e) assessment:

- Identify the geographic extent of the Treaty right as set out in the NFA and establish whether the geographic extent of the Treaty right differs in any way from the spatial boundaries applicable to any related VC or indicator discussed elsewhere in the Application. If a difference is identified, determine the relevance to assessing potential adverse environmental effects to the Nisga'a Nation Treaty right;
- Provide a narrative that clearly describes assumptions and limitations in understanding the full extent of potential adverse environmental effects on residents of Nisga'a Lands, Nisga'a Lands, and Nisga'a Nation Treaty interests, as set out in the NFA, and identifies any empirical evidence or professional opinion that has been relied upon;
- Identify any additional information being used to inform the assessment of potential adverse environmental effects on the Nisga'a Nation Treaty right; and,
- Determine whether there is the potential for an adverse environmental effect on the Nisga'a Nation Treaty right.

5.5.5. Effects Management

The Application must:

- Provide project design and mitigations identified for the relevant VCs that are proposed to mitigate effects on Nisga'a Nation Treaty interests;
- Provide additional mitigations that are specific to Nisga'a Nation or Nisga'a Nation Treaty interests; and,
- Provide proposed monitoring initiatives or review processes related to the effect on Nisga'a Nation Treaty interests.

Nisga'a Nation perspectives on the effectiveness of the mitigation options must be presented as well as the relative level of uncertainty or risk associated with the mitigation option.

5.5.6. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to Nisga'a Nation Treaty interests that are anticipated as a result of the Project, and present the results of this assessment, after taking mitigation into account.

5.5.7. Potential Residual Effects

The Application must provide a characterization of negative residual effects of the Project to Nisga'a Nation Treaty interests.

5.5.8. Cumulative Effects

The Application must include an assessment of cumulative effects on Nisga'a Nation Treaty interests as it relates to this Project and identify any additional mitigation measures. This assessment will include, at a minimum, those projects listed in Section 10.10 which are within the Nass Area which have transportation routes that overlap with those of the Project. The Application must describe the likelihood of any adverse residual cumulative effects on Nisga'a Nation and provide a summary of the results of the cumulative effects assessment.

5.5.9. Views of Nisga'a Nation

The Application must describe how the proponent engaged with the Nisga'a Nation, including any collaboration with the Nisga'a Nation, or integrated the Nisga'a Nation's perspectives into, the assessment of effects on Nisga'a Nation. The Application should clearly state any views of the Nisga'a Nation on the potential effects identified, approach to effects management, residual effects and conclusions.

5.6. Economic, Social, and Cultural Effects Assessment (Pursuant to Chapter 10 Paragraph 8(f) of the Nisga'a Final Agreement)

5.6.1. Introduction

The Application must:

- List Nisga'a Nation Treaty interests identified in Table 6, as well as through engagement with Nisga'a Nation or otherwise;
- Summarize the VCs used in the assessment of effects on Nisga'a Nation and whether they were carried forward from the assessment of Section 25(2) assessment matters presented in Section 11.0 or developed specifically for the assessment of Nisga'a Nation Treaty interests;
- Describe any other assessment methods and analysis used to undertake the assessment of effects to Nisga'a Nation Treaty interests;
- Provide the proponent's analysis of the effects of the proposed Project on the existing and future economic, social, and cultural well-being of Nisga'a citizens, in accordance with paragraph 8(f) of Chapter 10 of the NFA.

The analysis of the potential effects will be based on the Nisga'a Economic, Social, and Cultural Impact Assessment (ESCIA) conducted for the proposed project; and,

- Describe linkages with other Indigenous interests.

Table 6 outlines the relevant Chapter 10 Paragraph 8(f) Nisga'a Nation Treaty interests to be analyzed in the Application, as stated in the Nisga'a Economic, Social, and Cultural Impact Assessment Guidelines (2010).

5.6.2. Assessment Boundaries

The spatial boundary that will be used for the 8(f) assessment is the Nass Area plus consideration of the Nisga'a Urban Locals in Terrace, Prince Rupert/Port Edward, and Vancouver. Temporal boundaries will consider the life of the Project (construction, operations, reclamation, and post-closure) to the extent to which those effects may persist into the future.

Table 6: Nisga'a Nation NFA Chapter 10 Paragraph 8(f) Concordance Table

Nisga'a Nation Treaty Interest Identified in NFA Chapter 10 Paragraph 8(f)[1]	Valued Components Identified in Nisga'a Nation Guidance[2]	Related Section of Hybrid AIR
Economic: • Nisga'a citizens' employment and income; • Nisga'a citizens' business activities; • Natural resource activities and related earnings or values; and, • Future Nisga'a citizens' economic opportunities and economic development.	• Employment opportunities and income for Nisga'a Citizens; • Contracting opportunities and earnings for Nisga'a businesses; • Natural resource activities: economic impacts; • Future Nisga'a Nation economic opportunities and economic development; and, • NLG revenues and expenditures.	• 3.4 (Indigenous Nation Arrangements); • 11.13 (Non-traditional Land and Resource Use); • 11.14 (Employment and Economy); • 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); • 13 (Malfunctions and Accidents); and, • 20 (Summary of Effects on Current and Future Generations).
Social: • Migration and population effects in Nisga'a Nation communities; • Infrastructure and services in the Nisga'a Nation communities; • Occupational and non-occupational health and accident risks; • Crime; and, • Family and community well-being.	• Migration and population; • Infrastructure and services in Nisga'a communities; • Occupational health and accident risks; • Family and community well-being; and, • Human health and well-being.	• 3.4 (Indigenous Nation Arrangements); • 11.11 (Human Health); • 11.12 (Infrastructure and Services); • 11.13 (Non-traditional Land and Resource Use); • 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); • 13 (Malfunctions and Accidents); and, • 19 (Summary of Human and Community Well-being).

Nisga'a Nation Treaty Interest Identified in NFA Chapter 10 Paragraph 8(f)[1]	Valued Components Identified in Nisga'a Nation Guidance[2]	Related Section of Hybrid AIR
Cultural: • Effects of environmental impacts (including those resulting from accidents and malfunctions) on the cultural activities and practices of Nisga'a citizens; • Effects of changing work patterns on Nisga'a cultural activities and practices; and, • Effects on Nisga'a language.	• Nisga'a cultural sites and artifacts (including Culturally Modified Trees, spiritual sites, current and historical cultural sites, provincial heritage sites etc.); • Effects of changing work patterns on cultural activities and practices; • Natural resource activities: cultural impacts; and, • Nisga'a language.	• 3.4 (Indigenous Nation Arrangements); • 11.16 (Current and Future Use of Land and Resources for Traditional Purposes); • 11.17 (Quiet Enjoyment of Land); and, • 13 (Malfunctions and Accidents).

Note:

[1] Nisga'a Final Agreement, April 27, 1999.

[2] Nisga'a Nation and Province of British Columbia. 2018. *Guidance for Assessment of Impacts on Nisga'a Interests*. Draft V2.10. November 2018.

5.6.3. Existing Conditions

As applicable, the Application must:

- Describe historic and current use of the Project area by Indigenous people over time and practices in the Project area regarding Nisga'a Nation Treaty interests (include reference to specific sites and species of interests, where applicable);
- Describe the relative importance of the project area and its surroundings, including any special characteristics or unique features, to the Indigenous interest; and,
- Describe how the Nisga'a Nation interest has been affected by cumulative effects to date.

Information will be collected as part of the ESCIA and will be drawn from Section 11.0 of the Application. Sources include, but are not limited to:

- Consultation with Nisga'a Nation;
- ESCIA conducted by the proponent for the proposed Project;
- Similar regulatory applications and project effects assessments for other major projects;
- Provincial and federal databases; and,
- Land use plans and sustainable resource management plans.

If additional information is required to conduct the analysis and assessment of effects on topics identified in paragraph 8(f) of the NFA, the proponent will, subject to any direction from EAO, consult with NLG, and seek to reach agreement on terms of reference for the collection and integration of additional data.

5.6.4. Potential Effects

The Application must include an assessment of the effects to Nisga'a Nation Treaty interests. The Application must summarize effects assessments described in Section 11.0 and link them to the Nisga'a Nation Treaty interests relevant to the ESCIA, as identified in Table 6. A scoping exercise within the ESCIA must review and assess the potential for interaction between the proposed Project's activities and components and aforementioned Nisga'a Nation Treaty interests. Where an interaction is not identified to be relevant to the effects assessment of the proposed Project due to lack of interaction with Project components, the Treaty interest will not be brought forward. The proponent must present a rationale for any interest that is not brought forward through the ESCIA.

To assess the potential economic, social, and cultural effects carried forward for further consideration, the proponent must:

- Meet with NLG staff and other interested parties to discuss the 8(f) assessment approach;
- Review relevant Nisga'a Nation reports and previous 8(f) reports to support the current assessment process and conclusions; and,
- Solicit feedback from Nisga'a Nation citizens through community open houses and social media on the interest in employment, training, and business opportunities related to the Project, and how they think it would affect their economic, social, and cultural well-being.

5.6.5. Effects Management

The Application must:

- Provide project design and mitigations identified for the relevant VCs that are proposed to mitigate effects on Nisga'a Nation Treaty interests;
- Provide additional mitigations and avoidance strategies that are specific to Nisga'a Nation or Nisga'a Nation Treaty interests that have been developed in consultation with NLG and other interested Nisga'a organizations and citizens; and,
- Provide proposed monitoring initiatives or review processes related to the effect on Nisga'a Nation Treaty interests.

Nisga'a Nation perspectives on the effectiveness of the mitigation options must be presented as well as the relative level of uncertainty or risk associated with the mitigation option.

5.6.6. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to Nisga'a Nation Treaty interests that are anticipated as a result of the Project, and present the results of this assessment, after taking mitigation into account.

5.6.7. Potential Residual Effects

The Application must provide a characterization of negative residual effects of the Project to Nisga'a Nation Treaty interests.

5.6.8. Cumulative Effects

The Application must include an assessment of cumulative effects on Nisg̲a'a Nation Treaty interests as it relates to the Project and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects on Nisg̲a'a Nation and provide a summary of the results of the cumulative effects assessment.

5.6.9. Views of Nisg̲a'a Nation

The Application must describe how the proponent engaged with the Nisg̲a'a Nation, including any collaboration with the Nisg̲a'a Nation, or integrated the Nisg̲a'a Nation's perspectives into, the assessment of effects on Nisg̲a'a Nation. The Application should clearly state any views of the Nisg̲a'a Nation on the potential effects identified, approach to effects management, residual effects and conclusions.

5.7. Positive Effects

The Application must describe any positive effects to individual Nisg̲a'a Nation Treaty interests or to Nisg̲a'a Nation overall that are anticipated as a result of the Project and its associated effects management approaches. The Application must describe how the proponent engaged with the Nisg̲a'a Nation, including any collaboration with the Nisg̲a'a Nation, or integrated the Nisg̲a'a nation perspectives into, the assessment of positive effects on Nisg̲a'a Nation. The Application must clearly state any views of the Nisg̲a'a Nation on the potential positive effects identified.

5.8. Summary

The Application must include a summary of the assessment for Nisg̲a'a Nation outlining:

- The residual effects on Indigenous interests for the EAO to consider when determining the overall seriousness of impact to the Indigenous interests;
- Any major points of agreement or disagreement with Nisg̲a'a Nation; and,
- Efforts taken to address any points of disagreement.

6.0 GITANYOW NATION

6.1. Overview

As outlined in the Process Order and the Assessment Plan, Gitanyow Nation (Gitanyow) will work directly with Skeena to conduct an independent but parallel assessment of Eskay Creek, the Wilp Sustainability Assessment Process (WSAP).

Gitanyow indicated that key materials and outcomes developed during the WSAP (including the initial project information drafted by Skeena, the Wilp Sustainability Assessment Report, and the Project Decision Statement) would be provided to the EAO. Gitanyow indicated that, to the extent practicable, they would be aligning the timelines of the WSAP with the Eskay Creek EA and requested to be kept apprised of timelines.

6.2. Scope of the WSAP

Gitanyow provided the WSAP Direction document to the EAO on January 17, 2023, outlining the following scope of the WSAP:

- Project-related transportation that would occur in Gitanyow territory or otherwise could impact Gitanyow territory or Gitanyow Huwilp (peoples);
- Regional socio-cultural impacts and benefits related to Eskay Creek;
- Greenhouse gas emissions associated with Eskay Creek, inclusive of industrial vehicle traffic;
- Hydro-electric power development, as it pertains to potential partnerships with Gitanyow green energy projects; and,
- Bonding for catastrophic events (environmental) that could impact Eskay Creek.

For clarity, the scope of the WSAP will not include development at the mine site itself.

6.3. Summary of Engagement and Collaboration

In addition to the studies and information required of Skeena by Gitanyow, the Application must include a summary of Skeena's work with Gitanyow on the WSAP, outlining:

- How Skeena has identified and considered Gitanyow's Indigenous interests in Eskay Creek;
- How Skeena has engaged with Gitanyow in supporting the implementation of the WSAP to the Eskay Creek EA process;
- An assessment of the effects of the Project on Gitanyow's Indigenous interests; and,
- A summary of any non-confidential arrangement or agreement between the Skeena and Gitanyow. This includes agreements related to the delivery of studies and capacity funding agreements.

7.0 TSETSAUT SKII KM LAX HA

7.1. Overview

The Application must include an assessment of the effects of the Project on the Tsetsaut Skii km Lax Ha (TSKLH) that may be impacted by the Project, as identified in the Process Order.

This assessment in the Application must be informed by engagement with the TSKLH, as required in the Assessment Plan and in Section 25.4.

7.2. Tsetsaut Skii km Lax Ha Context

The Application must include background information on the TSKLH including ethnography, language, governance, economy, population, communities, Reserves, Indigenous land use plans (as required under Section 3.3), health and social conditions and any other contextual information the Indigenous nation views as important to understanding the impacts of the Project on their Nation.

The assessment for the TSKLH must include an overview of the understanding of Indigenous interests in the area that could be affected by the Project. Information in this section must be developed through engagement with the Nation. The Application must:

- Provide an overview of the TSKLH's governance context of the area affected by the Project including information regarding, where available:
    - How any Indigenous laws, governance, philosophies or customs have historically applied and currently apply to this area, including how those may have evolved over time, how those processes should be used to review the potential impacts of the Project on Indigenous interests and what information the Nation may need or processes that are required to support its decision making in the area;
    - Any laws, customs, or requirements for the area including any existing Indigenous land use plans; and,
    - Any agreements with other nations regarding governance of areas of territory overlap, as relevant to the Project;
- Provide a list of the Indigenous interests that may be impacted by the Project;
- Summarize how the identified Indigenous interests have been affected by cumulative effects to date; and,
- Summarize any past, present and anticipated future use of the Project area by Indigenous people over time and practices in the Project area regarding the Indigenous interests identified. This summary must include any site-specific use VCs present in the LAA and RAA, which are areas identified and/or mapped by Indigenous nations as having environmental, cultural, spiritual, transportation, subsistence and habitation value.

7.3. Summary of Engagement

The Application must:

- Provide a summary of past and planned engagement activities that describes the efforts taken to seek the views of the TSKLH with respect to the Project including:
    - The engagement activities undertaken with the TSKLH including the timeframe, means, and results of engagement;
    - Efforts to engage diverse populations of the TSKLH community in culturally appropriate ways, including groups identified by gender, age, or other community relevant factors to support the collection of information needed to complete analysis as per GBA Plus;
    - How engagement activities by the proponent support the TSKLH to understand the Project and its effects on the Nation and its rights; and,
    - the TSKLH views on the proponent's engagement approach and resolution of issues raised;
- Provide an analysis of the input received from TSKLH with respect to the Project including:
    - Description of how the proponent responded to questions, comments and issues raised by the TSKLH, the Nation's perspective on the resolution of issues, how unresolved input has been addressed in the Application, and/or how unresolved input must be addressed through the EA or another regulatory process or government initiative; and,
    - Where and how the TSKLH's perspectives were integrated into or contributed to decisions regarding the Project, including:
        - Development and collection of baseline information;
        - Plans for construction, operation, closure and post-closure; and,
        - Identification of VCs; and,
- Describe any arrangement or agreement between the proponent and the TSKLH for collaboration on the development of the Application or delivery of the Project. This includes agreements related to the delivery of studies and capacity funding agreements.

7.4. Information Sources

The Application must clearly identify sources of all information used in preparing the assessment of effects on the TSKLH, noting where information represents the views of TSKLH, the proponent or otherwise. Information sources that include Indigenous knowledge must be clearly labeled as such.

Regarding the collection and use of TSKLH Knowledge, the Application must:

- Provide an outline of the steps taken by the proponent to work with the TSKLH to incorporate TSKLH Knowledge including a summary of any arrangements with the Indigenous nation regarding the use and application of Indigenous knowledge;
- Provide a statement indicating that TSKLH supports the characterization and application of any Indigenous knowledge contained within the Application and gives permission for its public disclosure;

- Describe how Indigenous knowledge informed Project design, the assessment, and proposed mitigation measures; and,
- If applicable, provide a plan for future cooperation between the proponent and TSKLH to further incorporate TSKLH Knowledge into Project implementation (for example, monitoring and management plans).

7.5. Assessing Effects on TSKLH Interests

7.5.1. Introduction

The Application must:

- Describe how the TSKLH interest was identified, through engagement with the TSKLH or otherwise;
- Summarize the VCs used in the assessment of effects on TSKLH interests and whether they were carried forward from the assessment of Section 25(2) assessment matters presented in Section 11.0 or developed specifically for the assessment of TSKLH interests;
- Describe any other assessment methods and analysis used to undertake the assessment of effects to TSKLH interests; and,
- Describe linkages with other TSKLH interests.

7.5.2. Assessment Boundaries

The Application must define the assessment boundaries for the effects on TSKLH interests, including spatial and temporal boundaries. Where relevant, administrative and technical boundaries should also be identified.

7.5.3. Existing Conditions

As applicable, the Application must:

- Describe historic and current use of the Project area by TSKLH people over time and practices in the Project area regarding TSKLH interests (include reference to specific sites and species of interests, where applicable);
- Describe the relative importance of the Project area and its surroundings, including any special characteristics or unique features, to the TSKLH interest; and,
- Describe how the TSKLH interests has been affected by cumulative effects to date.

7.5.4. Potential Effects

The Application must include an assessment of the effects to TSKLH interests. The Application must:

- Describe potential pathways by which the Project components and activities could impact TSKLH interests;
- Identify effects to be carried forward from pathways determined to be consequential or requiring mitigation; and,
- Describe the VCs and indicators used to assess effects carried forward.

7.5.4.1. Potential Effects under Federal Jurisdiction

The Application must include an assessment of the effects to TSKLH interests under Federal jurisdiction. The Application must:

- Identify and describe the Treaty and Aboriginal rights of the TSKLH that are potentially affected by the Project, including historic, regional, and community context, the geographic extent of TSKLH territory, the purpose and importance of the rights to the rights-bearing communities (e.g., the practices, customs, beliefs, worldviews and livelihoods), and information on how rights have already been affected. The description must include maps, when available and permitted by TSKLH, to illustrate the location of TSKLH territory;
- Document the nature and extent of the exercise of rights potentially impacted by the Project; and,
- Consider how the information requirements related to cumulative effects support the exercise of rights.

7.5.5. Effects Management

The Application must:

- Provide Project design and mitigations identified for the relevant VCs that are proposed to mitigate effects on TSKLH interests;
- Provide additional mitigations that are specific to TSKLH or TSKLH interests;
- Provide proposed monitoring initiatives or review processes related to the effect on TSKLH interests; and,
- TSKLH perspectives on the effectiveness of the mitigation options must be presented as well as the relative level of uncertainty or risk associated with the mitigation option.

7.5.6. Assessing Positive Effects

The Application must describe any positive effects to individual TSKLH interests or the TSKLH overall that are anticipated as a result of the Project and its associated effects management approaches. The Application must describe how the proponent engaged with the TSKLH, or integrated the TSKLH's perspectives into, the assessment of positive effects on TSKLH interests. The Application must clearly state any views of the TSKLH on the potential positive effects identified.

7.5.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to TSKLH interests that are anticipated as a result of the Project, and present the results of this assessment, after taking mitigation into account.

7.5.8. Characterization of Residual Effects

The Application must provide a characterization of negative residual effects of the Project to TSKLH interests.

7.5.9. Cumulative Effects

The Application must include an assessment of cumulative effects on TSKLH interests as it relates to this Project and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects on TSKLH interests and provide a summary of the results of the cumulative effects assessment.

7.5.10. Views of the TSKLH

The Application must describe how the proponent engaged with the TSKLH, including any collaboration with the TSKLH, or integrated the TSKLH's perspectives into, the assessment of effects on TSKLH interests. The Application should clearly state any views of the TSKLH on the potential effects identified, approach to effects management, residual effects and conclusions.

7.6. Summary

The Application must include a summary of the assessment for the TSKLH outlining:

- The residual effects on TSKLH interests for the EAO to consider when determining the overall seriousness of impact to the Indigenous interests;
- Any major points of agreement or disagreement with the TSKLH; and
- Efforts taken to address any points of disagreement.

8.0 MÉTIS NATION BRITISH COLUMBIA

8.1. Overview

The Application must include an assessment of the effects of the Project on the Métis Nation British Columbia (MNBC) that may be impacted by the Project, as identified in the Process Order.

This assessment in the Application must be informed by engagement with the MNBC, as required in the Assessment Plan and in Section 25.4.

8.2. MNBC Context

The Application must include background information on the MNBC including ethnography, language, governance, economy, population, communities, Reserves, MNBC land use plans (as required under Section 3.3), health and social conditions and any other contextual information the MNBC views as important to understanding the impacts of the Project on their Nation.

The assessment for the MNBC must include an overview of the understanding of MNBC interests in the area that could be affected by the Project. Information in this section must be developed through engagement with the Nation.
The Application must:

- Provide an overview of the MNBC's governance context of the area affected by the Project including information regarding, where available:
    - How any MNBC laws, governance, philosophies or customs have historically applied and currently apply to this area, including how those may have evolved over time, how those processes should be used to review the potential impacts of the Project on MNBC interests and what information the Nation may need or processes that are required to support its decision making in the area;
    - Any laws, customs, or requirements for the area including any existing MNBC land use plans; and,
    - Any agreements with other nations regarding governance of areas of territory overlap, as relevant to the Project;
- Provide a list of the MNBC interests that may be impacted by the Project;
- Summarize how the identified MNBC interests have been affected by cumulative effects to date; and,
- Summarize any past, present and anticipated future use of the Project area by MNBC people over time and practices in the Project area regarding the MNBC interests identified. This summary must include any site-specific use VCs present in the LAA and RAA, which are areas identified and/or mapped by MNBC as having environmental, cultural, spiritual, transportation, subsistence and habitation value.

8.3. Summary of Engagement

The Application must:

- Provide a summary of past and planned engagement activities that describes the efforts taken to seek the views of the MNBC with respect to the Project including:
    - The engagement activities undertaken with the MNBC including the timeframe, means, and results of engagement;
    - Efforts to engage diverse populations of the MNBC community in culturally appropriate ways, including groups identified by gender, age, or other community relevant factors to support the collection of information needed to complete analysis as per GBA Plus;
    - How engagement activities by the proponent support the MNBC to understand the Project and its effects on the Nation and its rights; and,
    - the MNBC views on the proponent's engagement approach and resolution of issues raised;
- Provide an analysis of the input received from MNBC with respect to the Project including:
    - Description of how the proponent responded to questions, comments and issues raised by the MNBC, the Nation's perspective on the resolution of issues, how unresolved input has been addressed in the Application, and/or how unresolved input must be addressed through the EA or another regulatory process or government initiative; and,
    - Where and how the MNBC's perspectives were integrated into or contributed to decisions regarding the Project, including:
        - Development and collection of existing conditions information;
        - Plans for construction, operation, closure and post-closure; and,
        - Identification of VCs; and,
- Describe any arrangement or agreement between the proponent and the MNBC for collaboration on the development of the Application or delivery of the Project. This includes agreements related to the delivery of studies and capacity funding agreements.

8.4. Information Sources

The Application must clearly identify sources of all information used in preparing the assessment of effects on the MNBC, noting where information represents the views of MNBC, the proponent or otherwise. Information sources that include MNBC Knowledge must be clearly labeled as such.

Regarding the collection and use of MNBC Knowledge, the Application must:

- Provide an outline of the steps taken by the proponent to work with the MNBC to incorporate MNBC including a summary of any arrangements with the MNBC regarding the use and application of MNBC Knowledge;
- Provide a statement indicating that the MNBC Nation supports the characterization and application of any MNBC Knowledge contained within the Application and gives permission for its public disclosure;

- Describe how MNBC Knowledge informed Project design, the assessment, and proposed mitigation measures; and,
- If applicable, provide a plan for future cooperation between the proponent and the MNBC to further incorporate MNBC Knowledge into Project implementation (for example, monitoring and management plans).

8.5. Assessing Effects on MNBC Interests

8.5.1. Introduction

The Application must:

- Describe how the MNBC interests were identified, through engagement with the MNBC or otherwise;
- Summarize the VCs used in the assessment of effects on MNBC interests and whether they were carried forward from the assessment of Section 25(2) assessment matters presented in Section 11.0 or developed specifically for the assessment of MNBC interests;
- Describe any other assessment methods and analysis used to undertake the assessment of effects to MNBC interests; and,
- Describe linkages with other MNBC interests.

8.5.2. Assessment Boundaries

The Application must define the assessment boundaries for the effects on MNBC interests, including spatial and temporal boundaries. Where relevant, administrative and technical boundaries should also be identified.

8.5.3. Existing Conditions

As applicable, the Application must:

- Describe historic and current use of the Project area by MNBC people over time and practices in the Project area regarding MNBC interests (include reference to specific sites and species of interests, where applicable);
- Describe the relative importance of the Project area and its surroundings, including any special characteristics or unique features, to the MNBC interest; and,
- Describe how the MNBC interests has been affected by cumulative effects to date.

8.5.4. Potential Effects

The Application must include an assessment of the effects to MNBC interests. The Application must:

- Describe potential pathways by which the Project components and activities could impact MNBC interests;
- Identify effects to be carried forward from pathways determined to be consequential or requiring mitigation; and,
- Describe the VCs and indicators used to assess effects carried forward.

8.5.4.1. Potential Effects under Federal Jurisdiction

The Application must include an assessment of the effects to MNBC interests under Federal jurisdiction. The Application must:

- Identify and describe the Treaty and Aboriginal rights of the MNBC that are potentially affected by the Project, including historic, regional, and community context, the geographic extent of MNBC territory, the purpose and importance of the rights to the rights-bearing communities (e.g., the practices, customs, beliefs, worldviews and livelihoods), and information on how rights have already been affected. The description must include maps, when available and permitted by the MNBC, to illustrate the location of MNBC territory;
- Document the nature and extent of the exercise of rights potentially impacted by the Project; and,
- Consider how the information requirements related to cumulative effects support the exercise of rights.

8.5.5. Effects Management

The Application must:

- Provide Project design and mitigations identified for the relevant VCs that are proposed to mitigate effects on MNBC interests;
- Provide additional mitigations that are specific to MNBC or MNBC interests; and,
- Provide proposed monitoring initiatives or review processes related to the effect on MNBC interests.

MNBC perspectives on the effectiveness of the mitigation options must be presented as well as the relative level of uncertainty or risk associated with the mitigation option.

8.5.6. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to MNBC interests that are anticipated as a result of the Project, and present the results of this assessment, after taking mitigation into account.

8.5.7. Positive Effects

The Application must describe any positive effects to individual MNBC interests or the MNBC overall that are anticipated as a result of the Project and its associated effects management approaches. The Application must describe how the proponent engaged with the MNBC, or integrated the MNBC's perspectives into, the assessment of positive effects on MNBC interests. The Application must clearly state any views of the MNBC on the potential positive effects identified.

8.5.8. Characterization of Residual Effects

The Application must provide a characterization of negative residual effects of the Project to MNBC interests.

8.5.9. Cumulative Effects

The Application must include an assessment of cumulative effects on MNBC interests as it relates to this Project and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects on MNBC interests and provide a summary of the results of the cumulative effects assessment.

8.5.10. Views of the MNBC

The Application must describe how the proponent engaged with the MNBC, including any collaboration with the MNBC, or integrated the MNBC's perspectives into, the assessment of effects on MNBC interests. The Application should clearly state any views of the MNBC on the potential effects identified, approach to effects management, residual effects and conclusions.

8.6. Summary

The Application must include a summary of the assessment for the MNBC outlining:

- The residual effects on MNBC interests for the EAO to consider when determining the overall seriousness of impact to the MNBC interests;
- Any major points of agreement or disagreement with the MNBC; and,
- Efforts taken to address any points of disagreement.

9.0 VALUED COMPONENT SELECTION

The Application must:

- Provide a list of the VCs considered in the Effects Assessment (see Table 7);
- Provide the methods and rationale for the selection of VCs, sub-VCs, and indicators in sufficient detail to allow the reviewer to understand their relevance to the assessment;
- Indicate the source and reasons for concerns or interests considered in the selection of VCs, including from the public, provincial or federal authorities, Indigenous groups, and other participants; and,
- Describe how community and Indigenous knowledge and perspectives were considered in selecting VCs.

The selection of VCs must demonstrate a consideration of, and fully assess the potential effects of the Project on all Section 25 assessment matters outlined in the BC EAA, as well as the factors in Section 22 and the areas of federal jurisdiction in Section 2 of the IAA. This includes the effects to Indigenous peoples' physical and cultural heritage, current use of lands and resources for traditional purposes, any structure, site, or thing that is of historical, archaeological, paleontological or architectural significance, and any change occurring in Canada to the health, social or economic conditions of the Indigenous peoples of Canada. The overall effects assessment methodology must also consider the Project's potential interference with the exercise of rights of the Indigenous peoples of Canada as detailed in Sections 4 through 8.

Table 7: Valued Components Proposed for Consideration in the Effects Assessment

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
Environmental Valued Components					
Air Quality		• Criteria Air Contaminants (CACs), Volatile Organic Compounds (VOCs), and other air pollutants from mobile, stationary, or fugitive sources (e.g., total particulate matter, PM_{10}, $PM_{2.5}$, sulphur dioxide, nitrogen oxides, CO, metals, polycyclic hydrocarbons [PAH], and diesel particulate matter [DPM]).	• Changes in measurable parameters for ambient concentrations of CACs, VOCs, PAHs, and DPM.	• Surface Water Quality; • Terrain and Soils; • Vegetation and Ecosystems; • Wildlife and Wildlife Habitat; • Human Health; • Non-traditional Land and Resource Use; and, • Summary of Biophysical Factors that Support Ecosystem Function.	• Equipment emissions and dust from Project activities have the potential to interact with air quality and traditional foods (e.g., through deposition and uptake); • Air quality and its link with human health are regulated by the federal *Canadian Environmental Protection Act*, 1999; and, • Air quality was identified as an important value for Tahltan Nation and is important to Indigenous Groups and the public.
Noise and Vibration		• Audible noise levels; • Low-frequency noise levels; • Long-term sleep disturbance; • Interference with speech comprehension; and, • Vibration.	• Change in noise levels; • Change in vibration levels; • Day-night sound level (Ldn), which includes a 10 dB adjustment for night-time noise (typically 22:00-07:00 or 23:00-07:00 depending on the jurisdiction); • Daytime sound level (Lday); • Night-time sound level (Lnight); • Equivalent continuous sound level (Leq), which should identify the duration (e.g., 24-hour Leq);	• Wildlife and Wildlife Habitat; • Human Health; • Non-traditional Land and Resource Use; • Current and Future Use of the Land and Resources for Traditional Purposes; • Quiet Enjoyment of Land; and, • Summary of Biophysical Factors that Support Ecosystem Function.	• Activities associated with the construction and operation of the Project will generate noise and vibration, potentially impacting human health and terrestrial wildlife; • Noise and vibration levels for mine workers are regulated by the Health, Safety, and Reclamation Code for Mines in British Columbia and in the workplace in general by the regulations of the *Workers Compensation Act*; and, • Noise generation could also impair quiet enjoyment of the land (a value identified by Tahltan Nation).

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
			• Low frequency noise (LFN); • Maximum A-weighted sound level (LAmax); • C-weighted decibels (dBC); • Z-weighted decibels (dBZ); • Peak Particle Velocity – PPV (mm/s); • Air Overpressure (dBL); and, • Percent highly annoyed (%HA).		
Groundwater	Groundwater Quantity	• Groundwater quantity; and, • Interactions with surface water.	• Changes to groundwater flow volume and movement.	• Surface Water; • Vegetation and Ecosystems; • Human Health; • Current and Future Use of the Land and Resources for Traditional Purposes; and, • Summary of Biophysical Factors that Support Ecosystem Function.	• The Project's open pit, waste rock storage facilities, water management systems, and other infrastructure and activities have potential to impact groundwater quantity and quality, which are regulated both provincially and federal (e.g., under the *Water Sustainability Act* and its associated regulations); and, • Water abundance and quality are identified as important values to Tahltan Nation.
	Groundwater Quality	• Groundwater contamination (drilling fluids, seepage, acid mine drainage, neutral rock drainage, metal leaching).	• Changes to concentrations of total and dissolved metals, nutrients, turbidity, total suspended solids, groundwater temperature, and organic compounds.		

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
Surface Water	Surface Water Quantity	• In-stream flow; and, • Runoff dynamics and patterns.	• Changes in surface water flow rates and movement.	• Air Quality; • Groundwater; • Fish and Fish Habitat; • Wildlife and Wildlife Habitat; • Human Health; • Non-traditional Land Use; • Current and Future Use of the Land and Resources for Traditional Purposes; • Summary of Biophysical Factors that Support Ecosystem Function; and, • Summary of Impacts to Current and Future Generations.	• Mining activities have potential to affect surface water quantity and quality within the Unuk and Volcano Creek Watersheds; • Surface water quantity and quality are regulated under the *Water Sustainability Act* and its associated regulations; and, • Water abundance and quality are identified as important values to Tahltan.
	Surface Water Quality	• Metal leaching; • Acid rock drainage; • Neutral rock drainage; • Nutrients; • Metal concentrations; and, • Sedimentation.	• Changes to concentrations of contaminants of potential concern (COPCs) and other water quality parameters (e.g., temperature, pH, salinity, dissolved oxygen, turbidity, redox, hardness, total suspended solids, total dissolved solids) and chemical constituents (e.g., major and minor ions, metals (total and dissolved), nutrients, organic compounds).		
Terrain and Soil	Terrain Stability	• Changes to terrain from Project activities.	• Changes to terrain stability and morphology.	• Vegetation and Ecosystems; • Human Health; and, • Summary of Biophysical Factors that Support Ecosystem Function.	• The Project has the potential to affect terrain stability and increase of geohazards and may affect soil quantity and quality in the process of mine development, which may in tern impact vegetation; and, • A number of legislated requirements pertain to terrain and surface soil at mining projects, including the *Mines Act* and the Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health.
	Soil Quantity	• Soil disturbance; and, • Soil alteration and removal.	• Changes to soil volume.		
	Soil Quality	• Acidification; • Eutrophication; • Contamination; • Erosion; and, • Dust accumulation.	• Changes to physical and chemical properties of soil.		
Fish and Fish Habitat	Fish[1] (including salmon and hooligan [eulachon])	• Fish tissue; • Fish communities; • Species at risk;	• Changes in fish health (e.g., from exposure to elevated levels of COPCs);	• Surface Water; • Groundwater;	

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
		• Traditional use species; and, • Other aquatic species of management concern.	• Changes in fish distribution and abundance; and, • Project-related mortality.	• Wildlife and Wildlife Habitat; • Human Health; • Non-traditional Land and Resource Use; • Current and Future Use of the Land and Resources for Traditional Purposes; and, • Summary of Biophysical Factors that Support Ecosystem Function.	• The Project has potential to affect fish and fish habitat due to building and operation of mine infrastructure, alteration of stream flows, and erosion or other disturbance from construction of other infrastructure; • Impacts to fish are regulated under the *Fisheries Act* and other instruments; • Fish, and in particular salmon, are uniquely linked to Tahltan culture, identity and history; • Changes to water quantity or quality produced by Project components or activities have the potential to impact aquatic resources (e.g., benthic invertebrates); and, • Applicable provincial and federal guidance and legislation include British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture - Guideline Summary (ENV 2021a), the *Water Sustainability Act*, and the *Canada Water Act*.
	Aquatic Resources	• Benthic invertebrates; • Periphyton; and, • Bioaccumulation.	• Changes in composition, abundance, or diversity of periphyton and benthic invertebrates; and, • Changes in concentrations of COPCs relative to relevant benchmarks.		
	Fish Habitat	• Riparian ecosystems; and, • In-stream flow.	• Aerial extent (m^2) of harmful alteration, disruption, or destruction (HADD) of fish habitat.		
Vegetation and Ecosystems	Plant Species of Interest	• Listed plants[2]; • Culturally valued plants; and, • Invasive plants[3].	• Loss or alteration of SARA-listed, red-listed (i.e., rare) or blue-listed (i.e., of special concern) plant species; • Loss or alteration of culturally valued plants; • Presence of invasive plants; and, • Changes in concentrations of COPCs relative to relevant benchmarks.	• Air Quality; • Groundwater; • Terrain and Soil; • Wildlife and Wildlife Habitat; • Human Health; • Non-traditional Land and Resource Use; • Current and Future Use of the Land and Resources for Traditional Purposes; and,	• The Project has the potential to result in the loss or alteration of ecosystems and vegetation from land clearing and mine construction, and to alter the health of vegetation due to changes in air, water, soil quality as well as dust deposition; • Vegetation and certain ecosystems are regulated by the *Forest and Range Practices Act, Species at Risk Act*, and the Interim Guidelines for Wetland Protection and conservation in British Columbia; • Plants are a culturally important value identified by Tahltan Nation; and, • In addition to their importance to biodiversity, old growth forests preserve a link with historic and prehistoric cultural heritage.
	Plant Communities of Interest	• Listed ecological communities[4].	• Loss or alteration of red-listed or blue-listed ecological communities.		

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
	Ecosystems	• Parkland and Alpine; • Riparian; • Wetland; and, • Old growth forests.	• Loss or alteration of ecosystem extent or function.	• Summary of Biophysical Factors that Support Ecosystem Function.	
	Vegetation Quality	• Acidification.	• Changes in concentrations of COPCs relative to relevant benchmarks.		
Wildlife and Wildlife Habitat	Moose Mountain Goats Furbearers Bats Amphibians Raptors Migratory Birds, Upland Breeding Birds Migratory Birds, Waterbirds	• Species at risk; • Traditional use species; • Migratory birds; • Habitat (including sensory disturbance / zone of influence as appropriate); • Important habitat features (e.g., protected nests, leks, breeding sites, mineral licks, roosts, dens); • Movement; • Health; and, • Mortality.	• Loss/alteration of suitable habitat; • Changes to movement corridors; • Changes to wildlife health (e.g., concentrations of COPCs relative to relevant benchmarks); and, • Project-related mortality.	• Air Quality; • Noise and Vibration; • Surface Water; • Vegetation and Ecosystems; • Human Health; • Non-traditional Land and Resource Use; • Current and Future Use of Land for Traditional Purposes; and, • Summary of Biophysical Factors that Support Ecosystem Function.	• The Project components have the potential to affect both wildlife and wildlife habitat; • Applicable provincial and federal legislation include the *Forest and Range Practices Act, Wildlife Act, Species at Risk Act, Migratory Birds Convention Act,1994* and *Canada Wildlife Act*; • Minimizing impacts to wildlife habitats is one of the stated objectives of the Cassiar Iskut-Stikine Land and Resource Management Plan (CIS LRMP); and, • Wildlife values are linked to Tahltan culture, identity, and history.
Health Valued Components					
Human Health		• Air quality; • Drinking water quality; • Noise; • Soil quality; • Quality and quantity of country foods; • Population health[5], including mental health; and,	• Changes to estimated risks of threshold and non-threshold based human health effects; and,	• Air Quality; • Noise and Vibration; • Groundwater Quality; • Surface Water Quality; • Soil Quality; • Fish and Fish Habitat; • Vegetation and Ecosystems;	• Some environmental conditions potentially affected by the Project components or activities—including air quality, noise levels, soil quality, water quality, and country foods —are physical determinants of human health; • Human health is identified as a value by Tahltan Nation and is important to other Indigenous Groups and the public;

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
		• Health, safety, and security of Indigenous women and girls, as well as two-spirit, lesbian, gay, bisexual, trans, queer, questioning, intersex and asexual people, including non-Indigenous people.	• Changes to the social determinants of health (i.e., economic, social and cultural factors) and their contributions to changes to mental well-being and health-related behavioural factors (i.e., underlying biological health risks).	• Wildlife and Wildlife Habitat; • Employment; • Economy; • Infrastructure and Services; • Non-traditional Land and Resource Use; • Current and Future Use of the Land and Resources for Traditional Purposes; • Quiet Enjoyment of Land; and, • Summary of Human and Community Well-being.	• The assessment of potential effects within federal jurisdiction includes any change occurring in Canada to the health conditions of the Indigenous peoples of Canada.
Social Valued Components					
Infrastructure and Services		• Health care and social services and facilities; • Emergency response services; • Educational services and facilities, including day cares; • Housing affordability; • Local and regional transportation infrastructure; and,	• Changes in capacity and utilization of public and private health facilities and recreation infrastructure and services; • Changes in capacity and utilization of educational services; • Changes in availability and cost of housing; • Changes in traffic volumes and patterns; and,	• Human Health; • Summary of Human and Community Well-being; and, • Summary of Impacts to Current and Future Generations.	• Resources related to local community services and infrastructure could be stretched either because of Project demand or Project-driven population change; • IAAC requires that proponents describe predicted effects to infrastructure and services; and, • The assessment of potential effects within federal jurisdiction includes any change occurring in Canada to the social conditions of the Indigenous peoples of Canada.

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
		• Infrastructure and services for Indigenous women and girls, as well as two-spirit, lesbian, gay, bisexual, trans, queer, questioning, intersex and asexual people, including non-Indigenous people.	• Changes in capacity and availability of utilities such as domestic water, sewage, and solid waste.		
Non-traditional Land and Resource Use	Tenured Land and Resource Use	• Industrial land uses (e.g., mining, oil and gas); and, • Other tenured, permitted, or licensed land uses (e.g., trapping, guide-outfitting, forestry).	• Compatibility with existing land use plans; • Changes in access to land use areas; • Changes in sensory disturbances; and, • Changes to quantity and quality of resources supporting existing land and resource uses.	• Air Quality; • Noise and Vibration; • Surface Water; • Fish and Aquatic Resources; • Vegetation and Ecosystems; • Wildlife and Wildlife Habitat; • Human Health; • Employment/Economy; • Heritage Resources; • Quiet Enjoyment of Land; • Summary of Human and Community Well-being; and, • Summary of Impacts to Current and Future Generations.	• The Project could potentially impact private, public, and tenured land and resources by altering use of and/or access to certain public lands and waters and availability of certain species; and, • Maintaining the aesthetic quality of important viewscapes as seen from key locations such as spiritually and culturally important sites, recreation features, and transportation corridors is a management objective in the CIS LRMP.
	Public Land and Resource Use	• Consumptive land uses (e.g., hunting, fishing, trapping, vegetation gathering); • Non-consumptive land uses (e.g., camping, hiking, skiing, boating, climbing, caving); • Agriculture; and, • Tourism.			
	Parks and Protected Areas	• Federal, provincial, regional, municipal parks; • Recreation sites and Trails BC areas established under the *Forest and Range Practices Act;* and,			

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
		• Other protected or designated areas/features defined by federal, local, and regional governments, such as wildlife management areas established under the *Wildlife Act*, ungulate winter ranges, old growth management areas.			
	Private Property	• Residential land use; and, • Commercial land and resource use.	• Changes to private property.		
	Visual Resources	• Visual quality; and, • Ambient light conditions.	• Changes in visual quality from selected receptor sites; and, • Changes in ambient light conditions from selected receptor sites.		
Employment and Economy Valued Components					
Employment and Economy		• Labour and employment; • Training opportunities; • Business capacity; • Tax revenues and government expenditures; • Employment and economic conditions for Indigenous women and girls, as well as two-spirit, lesbian, gay, bisexual, trans, queer, questioning, intersex and asexual people, including non-Indigenous people; and,	• Changes in direct, indirect, and induced employment; • Changes in economic stratification of local communities; • Changes in number of individuals hired from local communities; • Changes in access to training resources and opportunities;	• Human Health; • Infrastructure and Services; • Non-traditional Land and Resource Use; • Summary of Human and Community Well-being; and, • Summary of Impacts to Current and Future Generations.	• The Project could provide both direct and indirect employment opportunities to workers within the local and regional labour market; • These opportunities may provide income benefit to workers but may also have an effect on the availability of workers and the cost of labour; • Employment, employment-related education and training, and economy are identified as VCs by BC EAO and IAAC and as values by Tahltan Nation; • The assessment of potential effects within federal jurisdiction includes any change occurring in Canada to the economic conditions of the Indigenous peoples of Canada; and,

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
		• Cost of living (for example, housing, food, goods and services).	• Project contracts and procurement of goods and services sourced locally; and, • Project contributions to local, provincial, and federal taxes.		• The Project has the potential to provide provincial and local economic stimulus via procurement and contracting for goods and services, consumer spending of employees, changes to gross domestic product and local government revenues and expenditures.
Cultural Valued Components					
Heritage Resources	Archaeological Sites	• Archaeological sites pre-dating 1846; and, • Intangible heritage resources related to archaeological sites.	• Changes to archaeological sites or to areas with archaeological potential.	• Non-traditional Land and Resource Use; • Current and Future Use of the Land and Resources for Traditional Purposes; and, • Summary of Human and Community Well-being.	• Land clearing, mining, and other infrastructure associated with the Project has the potential to affect physical heritage resources, including archaeological, paleontological, and other culturally significant sites; • In addition, the Project may contribute to impacts to intangible heritage, including Tahltan Knowledge and Indigenous Knowledge; • Physical heritage resources pre-dating 1846 are protected under the provincial *Heritage Conservation Act*; • Fossils are considered heritage resources and managed by the Fossil Management Office; • Both tangible and intangible heritage resources are identified as values by TCG; • The assessment of potential effects within federal jurisdiction includes any changes to physical and cultural heritage and structures/sites/things of historical/archaeological/paleontological/ architectural significance, with respect to Indigenous peoples.
	Paleontological Sites	• Fossil sites and areas with paleontological potential.	• Changes to paleontological sites or to areas with paleontological potential.		
	Historical/Traditional Use Sites	• Sites of historical or cultural importance post-dating 1846; and, • Intangible heritage resources related to Traditional Use sites or areas.	• Changes to historic and cultural heritage sites.		

Selected Valued Component	Sub-valued Component (where applicable)	Topics to Be Captured	Indicators	Anticipated Linkages to Other Valued Components/Sections	Rationale for Selection
Current and Future Use of Land and Resources for Traditional Purposes		• Barriers to social, cultural, and environmental practices, including access issues; and, • Food security.	• Changes to opportunities to take part in traditional practices; • Changes to access to hunting, trapping, fishing, gathering, and other important areas; and, • Changes to quality and abundance of country foods.	• Noise and Vibration; • Fish and Fish Habitat; • Vegetation and Ecosystems; • Wildlife and Wildlife Habitat; • Human Health; • Heritage Resources • Quiet Enjoyment of Land; • Summary of Human and Community Well-being; and, • Summary of Impacts to Current and Future Generations.	• Components and activities associated with the Project may reduce access to or availability and quality of land and resources for traditional purposes, including those associated with the exercise of rights, as identified by Indigenous Groups, are identified as a VC by IAAC; and, • Social, cultural, and environmental practices at defined areas, including those practices connected with meeting food security needs, have been identified as values by TCG.
Quiet Enjoyment of Land		• Sounds, sights, availability of areas with little or no industrial activity; and, • Sense of connection and security.	• Changes to physical characteristics of land; and, • Changes to intangible experiential qualities of land.	• Noise and Vibration; • Human Health; • Non-traditional Land and Resource Use; • Visual Resources; • Current and Future Use of the Land and Resources for Traditional Purposes; and, • Summary of Human and Community Well-being.	• The Project's contribution to noise and vibration, dust, visual impacts, as well as other disturbances (both tangible and intangible) associated with mine construction and operation may interfere with human use and quiet enjoyment of the land; and, • Quiet enjoyment of the land is a value identified by TCG.

Notes:

[1] The term "fish" includes (a) parts of fish, (b) shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and (c) the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals, as defined in subsection 2(1) of the *Fisheries Act*. Within the context of this Application, benthic invertebrates are not included under this definition and will be referred to specifically.

[2] The term "listed plants" refers to plant species that are found on the provincial red- or blue-list and the federal species at risk list.

[3] The term "invasive" refers to plants that are not native to the province or are outside of their natural distribution. Synonyms include exotic, alien, foreign, introduced, non-native, and non-indigenous species.

[4] The term "listed ecological communities" refers to ecosystems that are found on the provincial red- or blue-list.

[5] Population health includes an integrated analysis of the social, economic and cultural determinants of health that may also be discussed under other VCs (for example, Employment and Economy, Infrastructure and Services, Current Use of Lands and Resources for Traditional Purposes, etc.).

10.0 VALUED COMPONENTS ASSESSMENT METHODS

The Application must describe the methods used to assess the potential effects of the Project. The Application must describe how scientific, Tahltan, Indigenous, and local knowledge was used in the assessment. For Tahltan Knowledge and Indigenous Knowledge, the Application must outline how the knowledge was used in alignment with the knowledge policies and protocols of the Indigenous nations. Further, the Application must confirm that the Indigenous nation has provided consent for its use and public disclosure and that the Indigenous nation agrees that the knowledge has been appropriately characterized within the Application. The application of GBA Plus to the effects' analysis must be used to describe disproportionate effects for diverse subgroups.

10.1. Relevant Statutes, Policies, and Frameworks

The Application must summarize the regulatory and planning context for the management of the VCs, including relevant legislation, policies and frameworks specific to the VCs, such as various acts, regulations, policies, standards, cooperation agreements, and/or decision-making frameworks including Indigenous legislation or policy.

In addition to the relevant legislation, policies and frameworks specific to the VCs, overarching legislation relevant to the EA process as a whole will be included in the Application. This legislation includes, but is not limited to, the *Environmental Assessment Act*, *Impact Assessment Act*, *Canadian Environmental Protection Act*, and the *United Nations Declaration on the Rights of Indigenous Peoples Act*.

The Application must describe how the statutes, regulations, and policies etc. identified apply to the Project. The Application must describe:

- The existing authorizations have been issued, are in place that relate to the Project;
- The new authorizations that would need to be issued to carry out the project; and,
- What authorizations would apply to which Project components.

The Application must describe what is being proposed as the boundary/area for a *Mines Act* Permit; the status of discussions about this between EMLI and FOR; and, where there is uncertainty about the boundary/area of the *Mines Act* Permit, when it is expected that uncertainties would be resolved and where and how this is relevant to effects assessments, including but not limited to mitigation measures (e.g., locations where the Mine Reclamation and Closure Plan may not apply).

The Application must describe all potential authorizations required under the *Wildlife Act*, including but not limited to, the destruction of wildlife, and alteration, destruction, or damage to wildlife habitat.

The Application must describe the regulatory mechanisms that could be implemented to address unplanned and unanticipated events including but not limited to those relating to insufficient mitigation by the proponent, and the negative effects of worst-case accidents and malfunctions.

10.2. Hyperlinks to Tahltan Requirements

This section provides the hyperlinks between Tahltan Values and effects assessment requirements found in Section 4.0 and the VCs and effects assessment requirements identified here. The approach in understanding the relationship between Section 4.0 and Section 10.0 for the Application is that Tahltan will be providing relevant information to Skeena for each Tahltan Value; effects on values will be characterized, as applicable, in both sections, with the reporting of effects based on Tahltan requirements found in Section 4.0 and technical requirements found here. Some values will include information and effects outcomes that may be applicable in both and will be indicated accordingly by hyperlinks.

10.3. Assessment Boundaries

The Application must describe the spatial, temporal, administrative, and technical boundaries of each VCs (or valued sub-components) included in assessing the potential adverse and positive environmental, economic, social, culture, and health effects of the Project and provide a rationale for each boundary.

The Application must explain how the proponent considered the information received from Indigenous nations in its definition of spatial and temporal boundaries, particularly for VCs related to effects to Indigenous nations.

10.3.1. Spatial Boundaries

Spatial boundaries and rationales for their selection are presented in Appendix A.

The Application must also describe the methods used to identify the boundaries and provide a rationale for each boundary, and any changes to the boundaries from those described in this Hybrid AIR. Information on boundaries for each VC (or valued sub-component) must be included in the appropriate VCs sections of the Application, and must encompass existing conditions, all relevant Project phases, components, and activities. In some cases, spatial boundaries may extend to areas outside of the Province of BC's or Government of Canada's jurisdiction. These spatial boundaries must be identified where transboundary effects are expected (i.e., based on modelling). The spatial boundary maps for VCs (or valued sub-components) must clearly identify parts of the Project footprint located on lands and waters that lie within federal jurisdiction or treaty lands. Spatial boundaries must be informed by Tahltan Knowledge and Indigenous Knowledge, where available.

The following spatial boundaries used for Effects Assessments must follow the direction set out in EAO's Effects Assessment Policy:

- The **Project Footprint** is the smallest scale includes the footprint of temporary (e.g., borrow areas, laydown and storage areas) and permanent physical works (e.g., waste rock storage facilities, transmission lines, access roads) associated with the Project and the area within which physical activities associated with the Project will occur;
- The **Local Assessment Area (LAA)** is comprised of a larger area than the Project Footprint within which all (or most) potential project effects are expected to occur. The LAA encompasses the Project Footprint and the zone of influence of the Project, including areas that may be affected by direct and indirect Project effects, such as air contaminants, noise, light, effluents and wastes, employment and use of services and infrastructure. The LAA will be specific to each VC;
- The **Regional Assessment Area (RAA)** is used to provide context for the assessment of potential Project effects and includes the LAA. The RAA is typically based on a natural transition (for example, watershed boundary,

ecological zone) or an artificial delineation (for example, political or economic district or zone) that is relevant to the VC in order to understand the context for the effect. The RAA boundary should be at an appropriate scale that provides relevant context for consideration of project direct and indirect effects, offers useful and meaningful data and neither over-emphasizes nor under-emphasizes the scale of the Project effects. The RAA will be specific to each VC; and,

- The **Cumulative Effects Assessment Area (CEAA)**—i.e., the spatial boundary for the assessment of potential cumulative effects—may comprise the RAA, or a different boundary may be chosen that better reflects the nature of cumulative effects relevant to the Project's potential effects. The spatial boundary for cumulative effects assessment for a VC should encompass the area within which the residual effects of the Project are likely to interact cumulatively with the effects of other past, present and reasonably foreseeable future projects and activities on that same VC. Boundaries may be informed by the BC Cumulative Effects Framework or other available Cumulative Effects Frameworks and through engagement with Indigenous nations, the Technical Advisory Committee, any Community Advisory Committee, the public, local governments, provincial and federal government agencies, and stakeholders.

The Application must describe the location(s) of any measures to manage and control access to the mine and any other project areas, and the potential maximum extent of the physical area(s) to which access may be negatively affected by the Project, and how that access may be affected. The Application must show that EMLI, FOR and Indigenous nations were consulted about this.

The Application must describe if the discharge of firearms may be prohibited in any areas adjacent to Project components for reasons related to safety, the potential maximum physical extent of such areas, and the regulatory mechanism for this and role of Skeena in this. The Application must show that EMLI and FOR were consulted about this.

The Application must describe the potential maximum physical extent in which regulated harvesting of wildlife and fish in Management Units may be negatively affected by the Project. The Application must show that FOR and Indigenous nations were consulted about this.

The Application must describe the potential maximum physical extent of worst-case accidents and malfunctions.

Tahltan Knowledge and Indigenous Knowledge, when available, has the potential to inform VCs linkages and affect spatial boundaries.

The Application must follow the direction set out in the EAO's Effects Assessment Policy for describing temporal boundaries. The Application must describe the timing and duration of specific project activities in a manner that is clear and understandable to the layperson.

10.3.2. Temporal Boundaries

The following temporal boundaries must be used in the Effects Assessment and be described separately for key individual Project components, including but not limited to a) the mine; b) the main mine access road; c) the transmission line to the mine; and d) worker accommodation:

- Construction (2 years);

- Operations (9 years); for the mine this must include:
  - Operations during mine production (includes activities associated with mining, milling and shipping, and other operations such as relating to water management and water treatment); and,
  - Non-production operations post-mining (includes activities associated with ongoing active and passive water management and water treatment);
- Closure (3 years); and,
- Post-Closure (period to be determined depending on effects).

The Application must identify infrastructure, facilities, and activities anticipated to be permanent in duration. The Application must show that EMLI was consulted about this, and that this information was considered in Effects Assessments.

The Application must describe the maximum timing during which monitoring, and maintenance activities could be required, regardless of whether Skeena has been released of its obligations under the *Mines Act*. The Application must show that EMLI was consulted about this, and that this information was considered in relevant Effects Assessments.

The Application must describe the maximum timing in which Indigenous nations, stakeholders and members of the public would potentially not have unrestricted access to project areas for safety reasons. The Application must show that EMLI was consulted about this, and that this information was considered in relevant Effects Assessments.

The Application must describe the maximum timing in which measures to manage and control access to the mine and any other Project areas are predicted to be in place, and that EMLI and FOR were consulted about this.

The Application must describe if the discharge of firearms could potentially be prohibited in areas adjacent to Project components and tenures for reasons related to safety, and the potential maximum duration of such prohibitions if any. The Application must show that EMLI and FOR were consulted about this.

The Application must describe the potential maximum duration of which regulated harvesting of wildlife and fish in Management Units may be negatively affected by the project. The Application must show that FOR and Indigenous nations were consulted about this.

The Application must describe uncertainties about temporal boundaries and consider implications in effects assessments. This must include but is not limited to potential scenarios under which the mine could be placed under "care and control" before production is completed.

The temporal boundaries that reflect how long VCs may be affected by the project must be described in Effects Assessments.

10.3.3. Administrative and Technical Boundaries

Where administrative or technical boundaries have constrained the assessment of potential effects, the nature of the boundaries and their influence on the assessment must be documented in the Application.

10.4. Existing Conditions

For each VC (or valued sub-component), the Application must provide a description of the existing conditions within the assessment areas in enough detail to enable potential Project-VC interactions to be identified, understood, and

assessed, including the characteristics of the VC (or valued sub-component) itself and other components upon which the integrity of the VC relies.

The Application must include:

- A description of the quality and reliability of the existing conditions data and its representativeness and applicability for the purpose used, including any data gaps, insufficiencies, and uncertainties, particularly for the purpose of monitoring activities;
- Reference to natural and/or human-caused trends (for example, climate change) that may alter the VC irrespective of the changes that may be caused by the Project or other projects and activities in the local area;
- An explanation of if and how other past and present projects and activities in the assessment area have affected, or are affecting, each VC;
- The methods and information sources used to compile information on existing conditions, including any standards or guidelines followed, sampling, survey and research protocols, modelling methods, sources of uncertainty, error estimates, any assumptions or biases;
- Description of modelling methods and include assumptions, calculations of margins of error, and other relevant statistical information, including model validation using field data;
- Description of local, Tahltan Knowledge, and Indigenous Knowledge used in understanding existing conditions, including work in designing and carrying out studies of existing conditions; and,
- Evidence that input from diverse subgroups was sought through engagement activities to identify potential effects or other concerns and issues must be provided. The information must be sufficient to provide an analysis regarding effects in the context of potential interaction between VCs.

Where additional Project- and VC-specific field studies are undertaken, the scope and methods used must follow published documents pertaining to data collection and analysis methods, where these are available. Where methods used for data collection deviate from applicable published guidance, the rationale for the variance must be provided in the Application.

The Application must include technical reports that present the existing conditions data in Appendices and summarize the key findings of these technical reports directly in the Application. The description of the existing conditions must be presented in a manner that allows the reader to understand the effects assessment for each VC (or valued sub-component).

Where appropriate, information regarding existing conditions relating to people must be disaggregated based on by sex, age and other community relevant identity factors (e.g., Indigenous identity, ethnicity, gender, sex, age, ability, location, etc.) and their intersectionality (e.g., Indigenous women in rural communities, young men with high school diploma; children with respiratory health issues) as per GBA Plus. Both qualitative and quantitative data may be necessary to describe conditions across diverse or distinct subgroups, where GBA Plus factors have the potential to be relevant to the understanding of effects. Where the available information presents a limitation on the ability to characterize existing conditions according to GBA Plus approaches, this limitation must be articulated, and its implications for analysis described.

10.5. Potential Effects

The Application must describe in detail the Project's potential positive and negative direct and indirect effects in relation to each phase of the Project (construction, operation, closure and post-closure). The Application must describe the methods used to identify and assess the potential effects of the Project on the identified VCs and valued sub-components, including the results of any interaction between effects (to one VCs or multiple VCs).

For each VC, the Application must identify the potential interactions between the Project, including the various physical works and activities, and each VC (or valued sub-components). The Application must describe any indicators used for the assessment of potential effects and the parameters used to facilitate the evaluation of potential Project effects. Potential interactions must be identified using a table format. A conceptual site model will be provided to identify sources of contaminants and pathways to receptors and to assist in mitigation planning.

As applicable, aspects of the effects assessment relating to people must be disaggregated based on by sex, age and other community relevant identity factors (e.g. Indigenous identity, ethnicity, gender, sex, age, ability, location, etc.) and their intersectionality (e.g., Indigenous women in rural communities, young men with high school diploma; children with respiratory health issues) to identify disproportionate potential effects on various population groups for diverse subgroups as per GBA Plus.

The assessment of the effects of each of the Project components and physical activities, in all phases, must be based upon a comparison of existing environmental, economic, social, culture, and health conditions and the predicted future conditions with the Project and the predicted future conditions without the Project. The Application must include predictions on future conditions of each VC with the Project and without the Project before potential effects of the Project are assessed. The difference between the existing conditions (e.g. ambient existing conditions or future conditions without the Project) and the future conditions with the Project is interpreted as the potential effects of the Project.

The Application must:

- Provide the probability or likelihood of that effect occurring, and the degree of confidence in the analysis. The assessment of effects must use methods that are statistically and scientifically defensible and must describe the degree of uncertainty related to the data and methods used and reflect Indigenous knowledge if it is available. Describe how existing conditions data was used to inform this analysis;
- Describe the analytical methods selected to assess effects, including clearly stated assumptions for all predictions and how each assumption has been tested, as well as clear definitions of any descriptors or criteria that are used (e.g., definitions of large vs small magnitude);
- Describe the degree of uncertainty related to the data and methods;
- For quantitative predictions based on models, detail model assumptions, parameters, the quality of the data and the degree of certainty of the predictions obtained, including an explanation of model calibration, validation and model performance metrics used;
- Discuss the degree of confidence in the predictions and conclusions of the effect assessment;
- If a detailed description of effects cannot be provided, provide a rationale for the absence of details and a general description of the potential effects and related project activities (e.g., activities and effects related to

closure and reclamation). The proponent should confirm the rationale with IAAC before submitting the Impact Statement; and,

- Describe how Indigenous knowledge was used in designing and carrying out effects assessment.

10.6. Effects Management

For each VC section, the Application must:

- Describe the proposed technically and economically feasible mitigation measures to mitigate the potential adverse effects of the Project in a hierarchy: avoid, then minimize, then restore on-site and offset; the proposed mitigation measures and offsetting must include restitution for any damage caused by those effects through replacement, restoration, compensation or other means;
- Provide justification for moving from one mitigation alternative to the next in the mitigation hierarchy;
- Describe enhancement measures to increase positive effects; enhancement measures may include skills training (including education and hiring practices), local procurement strategies (such as bid packaging, supplier development initiatives, technology transfer, and research and development programs), investments in community infrastructure (such as roads, or services);
- Write mitigation measures as specific commitments that clearly describe how the proponent intends to implement them and the desired outcomes. Proposed mitigation or enhancement measures are to be specific, achievable, measurable and verifiable, and described in a manner that avoids ambiguity in intent, interpretation and implementation;
- Describe the best practices and avoidance measures incorporated into the Project design to reduce potential effects, including site and route selection, Project scheduling, Project design (for example, equipment selection, placement, emissions abatement measures), and construction and operation procedures and practices that are required to achieve the predicted effects (e.g. Project design elements that were accounted for in the effects assessment), differentiating between best management practices to reduce or eliminate negative effects and measures to offset negative effects;
- Describe any standard mitigation to be implemented that constitute proven technically and economically feasible mitigation measures, including consideration of best management practices, minimal disturbance footprint techniques, environmental management plans, environmental protection plans, contingency plans, emergency response plans and other general or standard practices, corrective measures or additions planning during the Project's various phases to eliminate or reduce adverse effects; where mitigation measures proposed involve development of a specific management plan, the Project Application must include an outline (such as, plan headers) of the management plan;
- Describe how the Project could impact existing mitigation measures already implemented or yet to be implemented that were set out under existing authorizations, such as, but not limited to, the *Environmental Assessment Act*, *Mines Act* Permits, *Mines Act* tenures for exploration activities, and must also describe how such impacts would be addressed;
- Justify or provide rationales why offsets are not proposed to mitigate negative effects;

- Where offsets are proposed:
    - Not use reclaimed mine infrastructure/landforms (i.e., open pits, waste rock storage facilities, and tailings storage facilities), as offsets to mitigate negative effects to vegetation, wildlife habitat and ecosystems;
    - Not use Project water management and treatment facilities (active or passive), storage and sediment ponds, and tailings ponds as offsets to mitigate negative effects to fish habitat and wetlands; and,
    - Provide offsetting or compensation plans following the Procedures for Mitigating Effects on Environmental VCs (Environmental Mitigation Procedures; ENV 2014 or as updated);
- Describe and consider any regulatory or standard industry requirements that may conflict with or impact the effectiveness of proposed mitigation measures, including, but not limited to, the BC *Wildfire Regulations* and transmission line rights-of-way;
- Consider how access requirements (i.e., the need to maintain or re-establish access to Project components such as for maintenance and monitoring purposes) may impact the effectiveness of mitigation measures;
- Describe the infrastructure and activities anticipated to be permanent in duration where reclamation would or may potentially not occur, the footprints of these areas, and show that EMLI was consulted about this;
- Where relevant, describe the technology readiness level of any proposed source control / water treatment technology (active, passive, or semi-passive), consider this in describing the effectiveness of the measure(s) to mitigate negative effects on VCs, and show that ENV and EMLI were consulted about it;
- In discussions of reclamation:
    - Provide a detailed evaluation of the quantity and quality of soil material available for use in reclamation, identify deficits, and consider this in describing the effectiveness of measures to mitigate negative effects and the assessment of negative residual effects to VCs;
    - Describe how design and engineering objectives for mine facilities/landforms such as, but not limited to, waste rock storage facilities and tailings storage facilities (i.e., how maintaining the effective function/operation of these structures in perpetuity) may affect/limit vegetation, habitat, and ecosystem objectives, and consider this in describing the effectiveness of measures to mitigate negative effects and the assessment of negative residual effects to VCs;
    - Describe expected challenges and limitations in reclaiming/establishing vegetation in the mine site such as, but not limited to, waste rock storage facilities, and tailings storage facilities (i.e., how this may affect/limit vegetation, habitat and ecosystem objectives) and consider this in describing the effectiveness of measures to mitigate negative effects and the assessment of negative residual effects to VCs;
    - Describe whether and how disturbed areas progressively reclaimed while operations (mine production, and non-production operations post-mining) are still occurring, would effectively function as wildlife habitat through regular monitoring and reporting (for example, evidence of use of a reclaimed area by wildlife [e.g., tracks, scat, dens, browse] can be used as an indicator for level of success of reclamation). Identify if, after transmission line infrastructure is removed, rights-of-way-will be restocked with tree species or left for vegetation to regenerate naturally. If the latter, the Application must provide a rationale for this, and describe how vegetation management measures will have affected tree species present, and the suitability of these trees to provide wildlife habitat and commercial timber value as they mature;

  - Describe the Project equipment, materials and structures that would or potentially could be disposed of and buried in the mine site or other locations once no longer needed (such as in open pits, waste rock storage facilities, and tailings storage facilities); and,
  - Describe if and how reclamation of the mine site would influence the views of Indigenous nations as to whether the site is likely to be used by members for traditional use activities, such as but not limited to gathering, fishing and hunting;
- Consider whether compliance with mitigation measures could be effectively enforced, and consider this with respect to the effectiveness of measures to mitigate negative effects and the assessment of negative residual effects to VCs;
- Describe if and how reclamation of the mine site would influence the views of Indigenous nations as to whether the site is likely to be used by members for traditional use activities, such as but not limited to gathering, fishing and hunting;
- Identify and describe mitigation measures that would avoid or lesson potential adverse effects to terrestrial and aquatic species and/or critical habitat listed under Schedule 1 of SARA and to species assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). These measures:
  - Must be consistent with any applicable recovery strategy, action plan or management; and,
  - Must be described in terms of the effectiveness of each measure to avoid the adverse effect and include a comprehensive science-based rational for proposing the selected mitigation measures;
- Describe the approach used to identify and select additional mitigation measures to be implemented to address potential adverse effects (including any offset plans);
- Describe how Indigenous knowledge was used in identification of mitigation measures;
- Describe passive and active measures that are specific to each identified effect and clearly indicate how the mitigation measures must reduce the potential adverse effects or enhancement measures must increase positive effects on the VC (measures are to be written as specific commitments that clearly describe how the proponent intends to implement them and the outcome these measures are designed to address);
- Discuss the mechanisms the proponent would use to require its Contractors and Sub-contractors to comply with these commitments and polices and with auditing and enforcement programs;
- Identify the party responsible for the implementation of mitigation measures and the system of accountability;
- Where appropriate, provide details regarding financial liability and compensation in place as required by regulation or company commitment in relation to closure and post-closure;
- Describe how disproportionate effects to diverse subgroups were used to inform mitigation and enhancement measures, which should be developed in collaboration with those who are vulnerable and/or disadvantaged, applying an intersectional analysis that considers social roles, relationships, relative power in communities and how intersections among these factors may create disparities;
- If there is little relevant or applicable experience with a proposed mitigation measure and there may be some question as to its effectiveness, clearly describe the potential risks and uncertainties associated with use of the mitigation should those measures not be effective; in addition, the Application must identify the extent to which

technological innovation may help mitigate effects. Where possible, it must provide detailed information on the nature of these measures, their implementation, management, and the requirements of the follow-up program;

- Include the anticipated time required for mitigation measures to become effective, to enable understanding of the duration of residual effects and the temporal characteristics of reversibility;
- Summarize the mitigation measures for potential Project effects by Project phase and identify any mitigation measures that are in management or offset plans;
- Identify other technically and economically feasible mitigation measures that were considered but are not proposed for implementation, and explain why they were rejected; justify any trade-offs between cost savings and effectiveness of the various forms of mitigation measures;
- Assess any potentially negative effects associated with the mitigation method itself;
- Identify and describe the use and application of best available technology and best environmental practice in identifying, assessing and implementing mitigation measures;
- Provide an assessment of the likely effectiveness of the proposed technically and economically feasible mitigation measures. The reasons for determining if the mitigation measure reduces the extent to which the effects are adverse much be made explicit;
- Describe the approach that would be taken if a mitigation measure is no longer feasible while the Project is carried out;
- Describe how, throughout the Project's duration, the lessons learned through follow-up programs will be used to continually improve mitigation measures;
- Where appropriate, describe any adaptive management plans that will be implemented to address uncertainties associated with the effectiveness of mitigation measures included in a follow-up program (see Section 10.11) including:
    - Identifying the expected outcomes and targets that the Adaptive Management Plan will address;
    - Describing the uncertainties that the Adaptive Management Plan will address;
    - Developing hypotheses aimed at reducing the uncertainties described above;
    - Describing existing conditions relevant to the Adaptive Management Plan; and,
    - Describing mitigation measures to be employed and alternatives;
- Where components are to be decommissioned and abandoned, include planned activities to do so. Project components that may be abandoned and decommissioned during the construction or operation phases may include access roads, temporary laydown areas, aggregate extraction sites and other temporary sites;
- Propose differentiated mitigation measures, if applicable, so that adverse effects do not fall disproportionately on diverse subgroups, or so they are not disadvantaged in sharing any development benefits and opportunities resulting from the Project. These mitigation measures should be developed in collaboration with those who are vulnerable and/or disadvantaged; and,
- Document specific suggestions raised by Indigenous groups for avoiding, mitigating or otherwise accommodating the project's environmental, health, social and economic effects, including potential effects and

impacts on Indigenous peoples and describe whether and how these measures will be incorporated in the Project design.

For each mitigation measure identified, the Application must:

- Provide an assessment of the anticipated effectiveness and resulting residual effects:
  - To the extent possible, provide relevant information to demonstrate anticipated mitigation effectiveness, including technical information from analogous projects and projects in the region, peer-reviewed studies, and local Indigenous and community knowledge;
- Describe all relevant uncertainties and assess how they could affect predicted residual effects;
- If there is little experience or some question as to the effectiveness of any measures, describe the potential risks and effects should those measures not be effective or malfunction;
- Assess any potentially adverse environmental effects associated with the mitigation method itself; and,
- Describe how disproportionate effects that were identified in the GBA Plus results were used to inform mitigation and enhancement measures.

In addition to the general requirements above, additional requirements and recommended mitigation measures are shown in the specific mitigation subsections that follow. The proponent may propose measures that differ from the specific requirements and recommendations. In which case, the proponent must provide a rationale. Proposed mitigation and enhancement measures must be discussed during the review of the Application and may be modified as a result of the review. Mitigation and enhancement measures may be considered for inclusion as enforceable conditions. If the Project is in an area where there is an ongoing or completed regional assessment, the proponent must use the information generated through that process to inform possible mitigation and enhancement measures.

The Application must describe the Project's environmental protection plan and its environmental management system through which the proponent must deliver this plan. The Application must provide an overall perspective on how potentially adverse effects would be minimized and managed over time.

10.7. Assessing Positive Effects

The Application must:

- Identify and assess predicted positive effects;
- Use spatial and temporal assessment boundaries appropriate for assessing and predicting positive effects, and describe if, how and why these boundaries differ from the boundaries used for assessing and predicting negative effects;
- Describe how long-term trends (for example, changing environment, employment and technology) and market fluctuations have been considered;
- Characterize the positive effect; and,
- Describe how the positive effect may be monitored and adaptively managed.

10.8. Assessing Negative Effects

Negative effects may result from interactions between the Project and VCs, and may be avoided, minimized, restored, or offset through the application of mitigation and management measures. Following the identification of mitigation and management measures, any residual negative effects on VCs must be assessed and described.

The Application must, for each potential effect:

- Use spatial and temporal assessment boundaries appropriate for assessing and predicting negative effects, and describe if, how and why these boundaries differ from the boundaries used for assessing and predicting positive effects; and,
- Describe the analytical methods used to assess the negative effect, including modelling approaches.

The Application must describe how Project activities will interact with existing "brownfield" areas from previous/existing activities at the Project site, including but not limited to any contaminated sites.

The Application must:

- Identify assumptions, parameters, and the quality of the data used in analytical methods and degree of uncertainty of the predictions obtained;
- Present the results of the analyses, including a detailed description of any potential residual effect (the description of the potential effect can be either qualitative or quantitative);
- Describe in qualitative terms the nature and degree of uncertainty or conservatism related to the data, modelling and methods used for the analysis; and,
- Describe the effectiveness of mitigation measures and proposed adaptive management measures and describe the probability or likelihood of potential residual effects. If additional risk analysis is required to fully characterize the potential risk where there is high uncertainty about the mitigation effectiveness (for example, where mitigation measures are proposed to be implemented for which there is little experience or questions about their effectiveness), a range of likely, plausible and possible outcomes must be assessed and additional studies, mitigation or contingency plans may be required.

Where appropriate, information regarding potential effects on the human environment must be presented by sex, age and other community relevant identity factors to identify disproportionate residual effects for diverse subgroups.

Where appropriate, and where the best practice or evidence-based thresholds exist, adverse effects must be described quantitatively using these criteria. Where a quantitative description is not possible, effects must be described qualitatively.

When residual effects on a VC are predicted and the VC is also considered a "pathway" for other potential effects on other VCs, the Application must identify the linkages between the VCs.

Where offsetting measures are proposed to directly or indirectly address a potential effect, the Application must first describe any potential effects following the implementation of measures to avoid, minimize, and restore on-site. For transparency, the change to the VC prior to the implementation of offsetting should be clearly identified, quantified and characterized in the Application to fully understand the consequences of the Project being assessed.

The characterization is best undertaken in the context of describing the proposed suite of mitigation, the need for and scope of offset, and residual effect.

10.9. Characterization of Residual Effects

For negative residual effects, the Application must:

- Provide a detailed characterization of residual effects following the implementation of technically and economically feasible mitigation measures;
- Fully describe the ecological, health, social, cultural and economic context in which each residual effect may occur, using qualitative and/or quantitative information, including:
    - Effects of past and present Projects and activities;
    - Potential trends in the condition of the VC; and,
    - Vulnerability and resiliency of the VC;
- Take into account the ecological, health, social, cultural and economic context in which each residual effect may occur, using the following criteria to characterize the effect:
    - Magnitude;
    - Geographic extent;
    - Timing;
    - Duration;
    - Reversibility;
    - Frequency;
    - Affected populations;
    - Likelihood; and,
    - Risk and uncertainty;
- Consider importance in the characterization of residual effects, where applicable;
- Describe how the likelihood of effects occurring and the degree of scientific uncertainty related to the data and methods used in the effect assessment were considered;
- Define the criteria/terms used to characterize residual effects;
- Identify and explain relevant sources of information used to characterize residual effects, including views of Indigenous nations and other participants;
- Where appropriate, information regarding residual effects must be disaggregated based on identity factors (e.g., Indigenous identity, ethnicity, gender, sex, age, ability, location, etc.) and their intersectionality (e.g., Indigenous women in rural communities, young men with high school diploma; children with respiratory health issues) to identify disproportionate residual effects on various population groups as per GBA Plus; and,
- Identify the linkages between the residual effects and other VCs, should there be a pathway for potential effects to other VCs.

10.10. Cumulative Effects Assessment

The Application must:

- Identify and provide a rationale for the VCs that must be the focus of the cumulative effects assessment (CEA). The selected VCs are those most likely to be affected by the Project in combination with other past, existing and reasonably foreseeable Projects and activities. The discussion must include:
  - Any VCs for which the proponent anticipates residual effects from the Project (must be considered in the CEA);
  - Any VCs identified as being of particular concern in the context of cumulative effects by the public and by Indigenous groups (including Tahltan Values in alignment with the scope and criteria determined through the *Declaration Act* Consent Decision-Making Agreement for Eskay Creek Project);
  - Any VCs where the predicted residual effects might not indicate the need for a CEA, but rely heavily on uncertain mitigation measures; and,
  - A rationale to justify the exclusion of other VCs from the CEA, as applicable;
- Identify and justify the spatial and temporal boundaries for the CEA for each VC selected. The boundaries of the CEAs may differ for each VC considered, may be larger than the boundaries for the Project effects alone, and must not be constrained by jurisdictional boundaries;
- Include an appropriate starting point for temporal boundaries and look at potential effects throughout the lifecycle of the Project, including closure and post-closure;
- Identify past, present and reasonably foreseeable future Projects and activities that have been or that are likely to be carried out that could interact cumulatively with each selected VC within the boundaries defined, and whose residual effects would act in combination with the residual effects of the Project. This assessment must consider the results of any relevant regional study conducted. This must include any exploration activities associated with the Project that are not designated as part of the project under the Process Order;
- An initial/preliminary list of projects and activities for consideration in the CEA is provided below; however, the Application must consider pertinent projects and activities that may not have been included in this list;

Past projects:	**Present projects:**	**Reasonably foreseeable future projects:**
• Cassiar Mine; • Golden Bear Mine; • Granduc Mine; • Johnny Mountain Mine; • Kitsault Mine; • Snip Mine; • Sulphurets Mine; • Tulsequah Chief Mine; and, • Eskay Creek Mine (historical).	• Brucejack Mine; • Forrest Kerr Hydroelectric; • Pacific Trails Pipeline; • McLymont Creek Hydroelectric; • Red Chris Mine; • Red Mountain Mine; • Silvertip Mine; • Volcano Creek Hydroelectric; • Rio Tinto BC Works; • LNG Canada; and, • Coastal Gaslink.	• Eskay Creek Mine (Technical Sample); • Galore Creek Mine; • Red Chris Underground Project; • Kitsault Mine; • Kerr-Sulphurets Mitchell (KSM) Mine; • Kutcho Mine; • Premier Gold Mine; • Schaft Creek Mine; • Storie Moly Mine; • Red Mountain Project; • Cedar LNG; • Vopak Canada Project;

Past projects:	Present projects:	Reasonably foreseeable future projects:
		• Snip Mine; • Ksi Lisims LNG; and, • Ridley Island Export Logistics Platform.
Other activities that might interact cumulatively with the residual effects of the Project: recreational usage, guide outfitting, hunting, trapping, commercial recreation, Indigenous harvesting and traditional foods, forestry, mineral exploration, and transportation (including interactions with current traffic impacts on public safety and on wildlife health).		

- Describe how proposed initial/preliminary spatial boundaries for CEAs in this Hybrid AIR have been modified as the result of determining that a project/activity initially identified as possibly interacting with the Project (i.e., a preliminary list) would not interact; and the identification of new projects/activities that would interact with the Project;
- Provide the rationale for selecting or excluding past, present and reasonably foreseeable future projects and activities to include in the CEA. Rationale could include, but are not limited to, proximity to the Project, temporal overlap, VC interactions, unique non-overlapping resource demands and Project certainty;
- Identify the methods used to determine potential cumulative effects, including data sources and collection methods, data analysis, and any other relevant assessment information;
- Identify potential cumulative effects to each VC selected by comparing existing and future conditions, including future scenarios with and without the Project. The effects of past and current activities (activities that have been carried out) are to be used to contextualize the current state of the VC. Climate change is to be considered as part of future conditions or a rationale to justify the exclusion of climate change effects on the VC is to be provided;
- Describe the mitigation measures that are technically and economically feasible to eliminate or reduce adverse cumulative effects, including:
    - The criteria or rationale used to determine technically and economically feasible mitigation measures;
    - Describe and provide an assessment of the effectiveness of the measures applied to mitigate the cumulative effects; and,
    - In cases where measures to mitigate these effects are beyond the control of the proponent, the Application must identify any parties that have authority to act on the measures. In such cases, the Application must summarize any commitments by the other parties regarding implementation of the necessary measures and any associated communication plans;
- Quantify, where appropriate, and evaluate residual cumulative effects using the characterization of residual effects described in Section 10.9;
- Incorporate GBA Plus analysis when assessing cumulative effects related to social, economic, and health assessments, considering and describing effects across diverse subgroups; and,
- Develop a follow-up program to verify the accuracy of the assessment and the effectiveness of mitigation measures for cumulative effects (see Section 10.11).

10.11. Follow-up Strategy

Where a positive or negative residual effect and/or cumulative effect has been identified for a VC, and there is uncertainty in the predicted effect or it is dependent on mitigation measures that are new or are used in a novel way and management of the effect is not governed by a permit, the Application must include a description of a follow-up strategy, where appropriate, that

- Identifies the measures to evaluate the accuracy of the predicted effects;
- Identifies the measures to ensure that mitigation measures are implemented as planned and evaluate the effectiveness of proposed mitigation measures to meet the intended mitigation commitments and goals;
- Identifies the regulatory instruments that include a monitoring requirement for the VC;
- Proposes an appropriate strategy (for example, adaptive management) to apply if predicted effects and mitigation effectiveness are not as expected. This includes reference to further mitigation, involvement of key stakeholders, Indigenous nations, government agencies and any other measures deemed necessary to manage the issue;
- Identifies any activities that could pose a risk to environmental, health, social, or economic conditions and/or VCs and the measures and means planned to mitigate these risks;
- Identifies a mechanism to disseminate follow-up results among interested parties;
- Identifies the involvement of Indigenous nations in the follow-up strategy design and the implementation, evaluation of the follow-up results, as well as any updates, including a communication mechanism between the nations and the proponent;
- Identifies duration of follow-up activities and who is responsible, if not only the proponent; and,
- Identifies a follow-up program for environmental, economic, social, culture, or health effects, as applicable, including disproportionate effects to discrete populations, as per GBA Plus.

11.0 VALUED COMPONENTS EFFECTS ASSESSMENT

11.1. Hyperlinks to Tahltan Requirements

This section provides the hyperlinks between Tahltan Values, AIR, and effects assessment requirements found in Section 4.0 and the VCs, technical AIR and effects assessment requirements identified here. The approach in understanding the relationship between Section 4.0 and Section 11.0 for the Application, is Tahltan will be providing relevant information to Skeena for each Tahltan Value, it will be characterized, as applicable, in both sections, with the reporting of effects based on Tahltan requirements found in Section 4.0 and technical requirements found here. Some values will include information and effects outcomes that may be applicable in both and will be indicated accordingly by hyperlinks.

In addition, at the start of each VC effects assessment section, a hyperlink to the Tahltan section for a common value will be identified to allow for those interested to move easily between sets of requirements.

11.2. Environmental and Community Context

The Application must provide a landscape-level overview of the Project area that sets the context for the assessment and must allow a comprehensive understanding of the current level of ecosystem functions and community well-being. This sets the stage for the discussion of biophysical factors that support ecosystem function (in Section 18.0) and social, economic, health and cultural factors that support human and community well-being (in Section 19.0), based on the results of the VC assessments completed in the following sections. Detailed information on existing conditions for each VC must be included in the relevant VC assessment section.

In describing the biophysical environment, the Application must take an ecosystem approach that considered how the Project may affect the structure and functioning of biotic and abiotic components with the ecosystem using scientific, local, Tahltan Knowledge, and Indigenous Knowledge regarding ecosystem health and integrity, as applicable. The Application must provide a description of the indicators and measures used to determine ecosystem health and integrity, identified during Early Engagement. The presence of endangered ecosystems potentially affected by the Project must be included in the description of biophysical existing conditions.

The Application must consider the resilience of relevant species populations, communities, and associated habitats to the effects of the Project. Ecological processes must be evaluated for potential susceptibility to adverse effects from the Project.

11.3. Air Quality

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs air quality is linked to and describe how the results of the assessment must be integrated into those of other VCs.

No valued sub-components were identified for Air Quality.

The rationale for selecting and assessing Air Quality and the corresponding assessment parameters must be presented in the Application.

The Application must identify which other VCs Air Quality is linked to and describe how the results of the assessment must be integrated into those of other VCs.

11.3.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the air quality VC include:

- *Canadian Environmental Protection Act, 1999* and regulations;
- *Environmental Management Act* and regulations;
- British Columbia Ambient Air Quality Objectives (ENV 2021b);
- Canadian Ambient Air Quality Standards (CAAQS; CCME 2022);
- British Columbia Air Quality Dispersion Modelling Guideline (ENV 2022a);
- Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air Quality (Health Canada 2016a);
- Guidance on Application of Provincial Air Quality Objectives for NO_2 (ENV 2021c);
- Guidance for NO_2 Dispersion Modelling in British Columbia (ENV 2022b);
- Guidance on Application of Provincial Air Quality Objectives for SO_2 (ENV 2017a);
- Meteorological Data and Sensing Requirements in the BC Ministry of Environment (BC MOE, 2013);
- Provincial guidance on application of provincial air quality objectives (Government of BC 2022a);
- BC Field Sampling Manual. Part B: Air and Air Emission Testing (ENV 2020a);
- Developing a Fugitive Dust Management Plan for Mines in British Columbia (EMLI and ENV 2021);
- Development and Use of Trigger Response Plans (ENV 2022c); and,
- Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations (ENV 2016a).

11.3.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

The spatial boundaries for Air Quality must include a LAA and a RAA.

11.3.3. Existing Conditions

The Application must:

- Describe monitoring programs used to collect air quality existing conditions data;
- Describe major sources of existing air emissions, including mobile, stationary and fugitive;
- Establish existing ambient air quality conditions for relevant air quality compounds that will be emitted by the Project and evaluate the availability of recent regional continuous monitoring data for air quality compounds that will be used to establish existing air quality conditions (for example, total suspended particulates, fine particulates smaller than 2.5 microns ($PM_{2.5}$), respirable particulates of less than 10 microns (PM_{10}), carbon

monoxide (CO), sulphur dioxide (SO_2), nitrogen oxides (NOx), relevant volatile organic compounds (VOCs), and any other hazardous air pollutants (mobile and stationary sources));

- Compare ambient air quality results with applicable regional, provincial and federal standards. For air pollutants with standards, the comparison must use the same averaging period and the statistical format associated with each numerical value;
- Describe the data source(s), including data validation and quality control methods;
- Identify and address seasonal variability in the existing conditions survey and include a determination of background or ambient contaminant concentrations, using monitoring data of appropriate duration, representativeness, data completeness, data validation and quality control;
- Describe the local and regional climate including historical records of relevant meteorological information (for example, precipitation, air temperature, wind speed, wind direction, relative humidity);
- Provide hourly meteorological data (wind speed and direction, air temperature, net radiation, turbulence and precipitation data) from a minimum of 1 year to support dispersion modelling that captures the normal variability of meteorological conditions;
- Describe the local and regional climate projections for the area with the rationale of the climate model chosen and including a description of the current and projected climate impacts on air quality;
- Describe available Tahltan, Indigenous or local knowledge related to current air quality conditions;
- Describe sources of nuisance odour in the assessment area;
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect data on existing conditions; and,
- If applicable, provide air dispersion models of a base case, developed in accordance with provincial or federal standards, to account for existing pollutant sources and to determine the spatial distribution of pollutants in the assessment area.

11.3.4. Potential Effects

The Application must define potential direct and indirect effects to air quality, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects. The assessment must follow the process outlined below:

- Provide a quantitative assessment of CACs (total particulate matter, PM_{10}, $PM_{2.5}$, sulphur dioxide, nitrogen oxides, VOCs, CO, metals, polycyclic hydrocarbons (PAH), and DPM, both carcinogenic and non-carcinogenic effects) as well as any air contaminants potentially associated with the Project;
- Include an atmospheric dispersion model of CACs (i.e., total suspended particulates, PM_{10}, $PM_{2.5}$, dustfall, NO_2, SO_2, and CO), certain VOCs, and any products and by products of processing in order to estimate the contaminant concentrations present in the entire area that could potentially be affected by atmospheric emissions resulting from various Project-related activities (sources). Sources may include the use of heavy machinery during construction, the facility operations, blasting, processing and road and rail transportation;
- Provide appropriately scaled contour map(s) plotting the predicted emissions ambient concentrations. The choice of air quality model must be appropriate for the complexity of sources, terrain, and meteorology;

- Provide details of all air quality model configuration, including meteorology, land use, gridded and sensitive receptors, and chemical and physical transformation settings;
- Assess the potential for emissions from the Project to contribute to acid deposition and exceedances of critical loads for terrestrial and aquatic ecosystems;
- Describe the source characteristics (such as, point emissions, area sources, flaring emissions, and fugitive sources);
- Provide both maximum and typical emission rates for all Project and regional sources within the assessment area, including emission factors (with methodology, uncertainty assessment, and references) and all assumptions and related parameters that would enable calculations to be reproduced;
- Use established methods for estimating emissions from all sources;
    - Determine whether the formation of secondary pollutants (pollutants which are not directly emitted but form when other primary pollutants react in the atmosphere) resulting from the Project under assessment has the potential to raise concentrations above existing levels – if so, identify and characterize these pollutants;
- Provide the rationale for the choice of air quality model, including the type and magnitude of emissions, the complexity of sources, terrain and meteorology, or for why modelling is not being used to predict fate of air emissions;
- Provide justification for all control efficiencies used to reduce emission rates of sources within the model, including details of all assumptions associated with the related mitigation measures, and their achievability;
- Assess the uncertainty in the modelled air pollutant concentrations using relevant range of model inputs. All sources of uncertainty should be taken into account, including:
    - Model uncertainty, including a consideration for how uncertainty in modelled predictions may vary spatially and temporally; and,
    - Uncertainty in existing conditions concentration estimates, in the estimates of meteorological inputs, and in estimates of source emissions (from sources attributable to the project, and externally);
- Conduct a source contribution analysis to assess the relative contributions of Project and non-Project emission sources on pollutant concentrations at key receptors. The source contribution analysis should be conducted for all pollutants that exceed 10% of the relevant guidance or standard value. Emission sources should be grouped into appropriate categories;
- Predict ground-level pollutant concentrations, and plot predicted concentrations using appropriately scaled contour maps to visualize the extent of dispersion, key receptors (including sensitive receptors), and changes in spatial distribution of emissions at local and regional scales. The chosen key human receptors, monitoring, or modelling locations should be representative of land uses around the Project (e.g., residential, recreational, traditional land use sites);
- Compare ambient air quality results with applicable regional, provincial, and federal air quality objectives and standards. For air pollutants with standards, use the averaging period and the statistical format associated with each numerical value;
    - Standards include the CAAQS and British Columbia Air Quality Objectives; and,

  - Refer to the CAAQS established by the Canadian Council of Ministers of the Environment (CCME) for PM2.5, SO_2 and NO_2 that will take effect at the time of Project construction and/or operation;

- Provide a comparison with critical thresholds (consider current, historical loadings, buffering capacity, including Acid Deposition Critical Loads);
- Provide a comparison with sensitive ecological receptors (consider effects thresholds of species in question);
- Provide a comparison to other appropriate existing guidelines, objectives or standards, where relevant. This includes regional and community-based air quality guidelines;
- Describe participation in national or regional air emission tracking and reporting programs or provide rationale why participation is not required;
- Provide a description of all methods and practices (such as, control equipment, heat, or gas recovery systems) to be implemented to reduce and control emissions; if BATs are not included in the Project design, the proponent needs to provide a rationale for the technologies selected;
- Provide details of the achievement of emission standards for all mobile and stationary engines used in the Project;
- Provide justification for all control efficiencies used to reduce emission rates of sources within the model, including details of all assumptions associated with the related mitigation measures, and their achievability; and,
- Assess air quality in scenarios including existing conditions, Project alone, existing conditions + Project, cumulative, and abnormal operating scenarios, as applicable.

11.3.5. Effects Management

The Application must describe effects management approaches for the Air Quality VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects as appropriate (including fugitive dust management), following information requirements described in Section 10.6.

11.3.6. Assessing Positive Effects

The Application must describe any positive effects on the Air Quality VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.3.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Air Quality VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.3.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Air Quality VC, including the criteria outlined in Section 10.9.

11.3.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Air Quality VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA. If effects outside Canada are anticipated, however small, the Application must describe those effects in a stand-alone section.

11.3.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Air Quality VC following the approach outlined in Section 10.11.

11.4. Noise and Vibration

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Noise and Vibration VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

No sub-components were identified for the Noise and Vibration VC.

The rationale for selecting and assessing the Noise and Vibration VC and the corresponding assessment parameters must be presented in the Application.

11.4.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Noise and Vibration VC include:

- Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise (Health Canada 2017b);
- Quantities and Procedures for Description and Measurement of Environmental Sound. Part 4: Noise Assessment and Prediction of Long-term Community Response (ANSI 2005a);
- Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures (ISO 2016);
- Description, measurement and assessment of environmental noise – Part 2: Determination of sound pressure levels (ISO 2017);
- Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation (ISO 1996);
- Impulse Sound Propagation for Environmental Noise (ANSI 2005b);
- Directive 0.38: Noise Control (Alberta Energy Regulator 2007);
- Good Practice Guide for Strategic Noise Mapping and the Production of Associated Data on Noise Exposure (EC WG-AEN 2007);
- Guidelines for Community Noise (WHO 1999);
- Night Noise Guidelines for Europe (WHO 2009);

- A comparison of self-reported health status and perceptual responses toward environmental noise in rural, suburban, and urban regions in Canada (Michaud, D.S et al. 2022);
- Pit and Quarry Guidelines (NS EL 1999);
- Guideline NPC-119 – Blasting (ON MOE 1982);
- Guidelines on Information Required for the Assessment of Blasting Noise and Vibration (ON MOE 1985);
- Policy for Assessing and Mitigating Noise Impacts from New and Upgraded Numbered Highways (MOTI 2016); and,
- Relevant municipal bylaws.

11.4.2. Assessment Boundaries

The Application must define assessment boundaries for the Noise and Vibration VC, including spatial, temporal, and administrative and technical boundaries.

11.4.3. Existing Conditions

As applicable, the Application must:

- Describe current ambient noise levels at key receptor points (for example, closest or most affected receptors), where relevant this may include providing the results of an ambient noise survey of existing conditions and permissible sound levels for each receptor;
- Describe typical sound sources, geographic extent and temporal variations;
- Describe noise-sensitive receptors in the assessment area, including any foreseeable future receptors, and distances of receptors from the Project;
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data;
- Describe available Indigenous or local knowledge related to current noise conditions;
- Describe engagement with Indigenous nations to identify receptor locations; and,
- Qualitative description of existing vibration, including potential sources at the facility.

11.4.4. Potential Effects

The Application must define potential direct and indirect effects to the Noise and Vibration VC, identify interactions between the Project and these effects and outline indicators that must be used to measure these effects. The assessment must follow the process outlined below:

- Describe changes in ambient vibration and sound levels resulting from the Project (i.e., changes in day-night sound level [Ldn], daytime sound level [Lday], night-time sound level [Lnight], equivalent continuous sound level [Leq], low frequency noise [LFN], maximum A-weighted sound level [LAmax], C-weighted decibels [dBC], Z-weighted decibels [dBZ], percent highly annoyed [%HA]);
- Provide a vibration and sound impact assessment for construction activities, including an overview of any public concerns;

- Quantify existing conditions and predicted future sound levels at appropriate distances from any Project facility and/or activities to all human receptor locations and describe the timing, frequency, duration, and character of sound (e.g., tonal, impulsive, highly impulsive, etc.);
- Describe if LFN may be an issue from project-related activities and evaluate, if applicable;
- Describe the locations and characteristics of the most sensitive receptors including human receptors, traditional land use sites, and species at risk (also see Section 11.10);
- Describe consultation with regulators, stakeholders, community groups, landowners, and Indigenous nations about current noise concerns and future potential effects to the Noise and Vibration environment;
- Identify and justify the approach to determine the extent to which sound effects resulting from the Project are adverse and describe any changes in night-time noise levels as a result of the Project;
- Consider expectations of peace and quiet for receptors (e.g., traditional land use by Indigenous nations) and noise management procedures (e.g., processes for resolving and dealing with complaints); and,
- Describe any positive changes.

11.4.5. Effects Management

The Application must describe effects management approaches for the Noise and Vibration VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6.

11.4.6. Assessing Positive Effects

The Application must describe any positive effects to the Noise and Vibration VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.4.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Noise and Vibration VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account following information requirements described in Section 10.8.

11.4.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to Noise and Vibration VC, including the criteria outlined in Section 10.9.

11.4.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Noise and Vibration VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA.

11.4.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Noise and Vibration VC following the approach outlined in Section 10.11.

11.5. Groundwater

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Groundwater VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

The Groundwater VC includes the following valued sub-components:

- Groundwater Quantity; and,
- Groundwater Quality.

11.5.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Groundwater VC include:

- *Water Sustainability Act;*
- *Water Protection Act;*
- *Environmental Management Act;*
- *Drinking Water Protection Act;*
- *Mines Act;*
- Government Actions Regulation under the *Forest & Range Practices Act*;
- BC Contaminated Sites Regulation;
- Metal and Diamond Mining Effluent Regulations;
- BC Field Sampling Manual (ENV 2013);
- BC Source Drinking Water Guidelines (ENV 2020c);
- BC Guidelines for Groundwater Modelling to Assess Impacts of Proposed Natural Development Activities (ENV 2012);
- Relevant State of Alaska water quality standards (Alaska Department of Environmental Conservation 2022);
- Guidelines for Canadian Drinking Water Quality (Health Canada 2022a);
- BC Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture - Guideline Summary (ENV 2021a);
- Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations (ENV 2016a);
- Technical Guidance 4, *Environmental Management Act* Authorizations, Annual Reporting Under the *Environmental Management Act* – A Guide for Mines in British Columbia (ENV 2016b);

- Protocol 21 for Contaminated Sites, Water Use Determination (ENV 2017b);
- Protocol 9 for Contaminated Sites, Establishing Local Background Concentrations in Groundwater (ENV 2021c);
- Joint Application Information Requirements for *Mines Act* and *Environmental Management Act* Permits (EMPR and ENV 2019);
- Guidance Manual for Optimizing Water Quality Monitoring Program Design (CCME 2015); and,
- Policy for Metal Leaching and Acid Rock Drainage at Mine Sites in British Columbia (ENV 1998).

11.5.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.5.3. Existing Conditions

As applicable, the Application must:

- Describe the regional and local groundwater quantity and quality conditions;
- Describe any Project-specific existing conditions surveys completed, including a detailed description of the methods used and how the results helped to characterize existing conditions (for example, a data/information gap; confirmed or refuted older information);
- Provide groundwater quantity and quality data used to develop or inform water balance and water quality models (if development of such models is required for the assessment);
- Provide monitoring well hydrographs showing the full range of seasonal and inter-annual water level variations and compare those against the pattern of variations observed at other Projects of the area (e.g., KSM Project, Galore Creek Project, Iskut Project);
- Describe seasonal trends in groundwater quality for all COPCs that may affect surface water and any parameters that may modify their toxicity including but not limited to relevant physiochemical parameters (e.g., temperature, pH, electrical conductivity, dissolved oxygen, turbidity, redox, hardness, total dissolved solids) and chemical constituents (e.g., major and minor ions, metals, nutrients, relevant chemical constituents given past, current and future site use); illustrate the seasonal and inter-annual variability in existing groundwater quality conditions;
- Describe the existing groundwater quality conditions characterization program including sampling site selection, monitoring duration and frequency (i.e., changes compared to water quality prior to and during existing mining operations), sampling methodology, and analytical protocol, including field and laboratory quality assurance and quality control measures (accuracy, precision and sensitivity), methods for evaluation and analysis of existing conditions data, and incorporation of any historical data or existing information;
- Ensure that site selection characterization include sampling locations within the Project footprint, the LAA and RAA (i.e., all locations that could potentially be impacted by the proposed Project);
- Ensure that samples for groundwater existing conditions are collected from upgradient reference locations as much as possible, such that they are unlikely to be impacted by the Project (note that some potential sources of contamination may be located upgradient relative to the surrounding groundwater and surface waters);

- Describe possible/documented groundwater-surface water interactions; including an identification of groundwater-depending ecosystems, wetlands, discharge, and recharge areas;
- Describe existing groundwater quality conditions relative to applicable provincial and federal guidelines;
- Provide existing conditions data for relevant physicochemical parameters and chemical constituents for groundwater quality (including raw data, summary statistics, and summary figures that characterize spatial and temporal trends), consistent with the requirements of Appendix 2 of the Assessment Plan:
    - Physicochemical parameters may include temperature, pH, electrical conductivity, dissolved oxygen, turbidity, total suspended solids, total hardness, total dissolved solids;
    - Relevant chemical constituents may include major and minor ions, total and dissolved trace metals, total mercury, methylmercury, polycyclic aromatic compounds, nutrients, organic and inorganic compounds, or other contaminant of potential concern; and,
    - Water sample collection and analysis should use appropriately sensitive detection limits and the data should illustrate the seasonal and inter-annual variability in existing surface water quality conditions with sufficient years of data to fully characterize natural variability, including possible variabilities due to groundwater-surface water interactions;
- Identify groundwater-producing strata (aquifers like coarse-grained sediments and permeable bedrock) that may be affected by the Project. Where current domestic, communal, or municipal water wells access these strata, their distance from the project must also be marked and added to the map;
- Identify all domestic, communal, or municipal water wells within the LAA and RAA, including their location, their screened hydrostratigraphic unit and piezometric level; describe their current use, potential for future use, and whether their consumption has any Indigenous nation cultural importance;
- Identify all groundwater monitoring wells that inform the conceptual model, including their location, completion details (diameter, screen depth), geological log, screened hydro-stratigraphic unit, piezometric level, groundwater quality information, and monitoring frequency;
- Describe the structural geology of the environment, including major faults, fracture density and orientation with respect to groundwater flow directors;
- Provide the hydraulic properties of the hydro-stratigraphic units (aquifers, aquitards, aquicludes) of the hydrogeological environment in both bedrock and overburden, including data on hydraulic conductivity, transmissivity, saturated thickness, and porosity, as applicable. Provide a piezometric map showing hydraulic heads;
- Provide hydrogeological maps and cross-sections of the assessment area showing water table elevations, potentiometric contours, interpreted groundwater flow directions and boundaries, groundwater divides, boundaries with surface water, and areas of recharge and discharge;
- Present a conceptual model of the hydrogeological environment, including a discussion of geomorphic, hydro-stratigraphic, hydrologic, climatic, and anthropogenic controls on groundwater flow;
- Develop a 3-dimensional numerical groundwater flow model for the Project based on the conceptual model of the hydrogeological environment;
- State the limitations and assumptions in the modelling approach;

- Calibrate the numerical model to existing hydrological conditions using groundwater level and stream flow monitoring data; and provide metrics and graphs describing the quality of the calibration that was achieved;
- Analyze the sensitivity of key model outputs to hydraulic properties and climate parameters such as recharge;
- Using the calibrated numerical model, provide an existing groundwater conditions budget including baseflow discharge to wetlands, streams and rivers, recharge from lakes or streams, and any anthropogenic withdrawals;
- Describe available Indigenous or local knowledge related to groundwater (including use and users); and,
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data.

11.5.4. Potential Effects

The Application must define potential direct and indirect effects to the Groundwater VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

With respect to potential Project effects on the physical hydrogeological system, the assessment must follow the process outlined below:

- Using the conceptual groundwater model and the identified source-pathway-receptor linkages, describe the expected changes to groundwater quality and quantity/flow through the Project life (operations and post-closure). This should include the anticipated effects to water levels, flow directions and base-flow contributions to surface waters (i.e., groundwater-surface water interactions), as well as water quality effects associated with seepage originating from the various mine facilities, its management and monitoring;
- Using the numerical groundwater model simulate and predict groundwater flow conditions through the Project life (operations and post-closure). This should include assessment of inflows to the open pit and its flooding times, effects on base-flows to creeks due to mining, and the flux of contact water in groundwater to creeks from the various mine facilities, including the quantity, ultimate discharge point, and timing of discharge;
- Describe the effects of the Project on groundwater, including effects related to Project use of groundwater resources, changes to water flow or watercourse diversions and discharge of water, effluent, wastewaters or other substances to the environment;
- Quantify the extent of hydrological changes that will result from disturbances to aquifers, including changes to the quantity or timing of surface flow, water levels, ice thickness or extent, sediment input, and channel regime in watercourses, and water levels in affected waterbodies;
- Indicate the groundwater withdrawal requirements during all phases and specify:
    - The timing, quantity and quality of water withdrawn from the environment (flow rates and annual volumes);
    - Any treatment carried out on these waters (e.g., addition of a tracer); and,
    - The conditions under which this water is released into the receiving environment;
- Describe predicted changes to groundwater quality for all COPCs and any parameters that may modify their toxicity including but not limited to physicochemical parameters (e.g., temperature, pH, salinity, dissolved oxygen, turbidity, redox, hardness, total dissolved solids) and chemical constituents (e.g., major and minor ions, metals [dissolved], nutrients, organic compounds);
- Compare any changes to groundwater quality to applicable guidelines, objectives or standards;

- Describe the contaminants associated with the Project, their spatial and temporal locations and their potential flow paths (e.g., groundwater seepage pathways and how they relate to potential receptors). Characterize how they could affect groundwater quality, including information on the source(s) of any contaminants, and their transport and fate in the hydraulic environment;
- Describe the down-gradient flow of groundwater affected by the Project, with the use of figures showing groundwater piezometric contours and particle tracking results;
- Describe the contaminant attenuation capacity within the hydrogeological units in the project area. With this input, assess the potential for off-site groundwater contamination. Alternatively, the proponent may conservatively assume no attenuation capacity, but must still describe, in detail, potential degradation products (i.e., daughter materials) that may result from attenuation and other processes during groundwater flow;
- Describe changes to groundwater quantity due to the Project (including the TMSF), including any changes that could affect surface water quantity, potable water supplies, aquatic habitat, and vegetation;
- Present a 3-dimensional numerical groundwater flow model of the hydrogeological system that incorporates all major project features:
    - The model should be based on the calibrated model used to describe existing conditions using the 3-dimensional numerical groundwater flow model; and,
    - Estimate seasonal changes to surface water and groundwater regimes during operations and the post-closure period, including effects of depressurization of the basal aquifer and dewatering of surficial deposits, effects on base-flow in rivers and streams, effects on wetlands, effects on potable supplies, and effects on natural flow divides;
- Present an integrated site water balance model incorporating groundwater fluxes to or from all major Project components, for all Project phases, including a clear description and rationale for all input parameters and assumptions and base case (i.e., most likely, mean, median) and worst case (e.g. 99th percentile) scenarios, plus applicable sensitivity scenarios; and,
- Describe how groundwater quality and quantity has been used in the surface water and groundwater quality predictions and chemical mass balance model.

11.5.5. Effects Management

The Application must describe effects management approaches for the Groundwater VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate following information requirements described in Section 10.6.

Water treatment should be viewed as a mitigation strategy only if other prevention mitigation methods (e.g., source control) are not feasible or sufficient. If water treatment is proposed as a mitigation strategy, the Application must include:

- A characterization of influent and effluent chemistry and flow;
- Demonstration of the effectiveness of the collection and holding system;
- Conceptual design of the treatment technology;
- Predicted reagent use;
- Predicted performance under the expected range of flow and influent chemistry conditions;

- A sludge disposal plan; and,
- Maintenance requirements.

The Application must demonstrate that the treatment is sufficient to achieve long-term environmental protection requirements.

11.5.6. Assessing Positive Effects

The Application must describe any positive effects to the Groundwater VC that are anticipated as a result of the Project and its associated effects management approaches following information requirements described in Section 10.7.

11.5.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Groundwater VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account following information requirements described in Section 10.8.

11.5.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Groundwater VC, including the criteria outlined in Section 10.9.

11.5.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Groundwater VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA.

11.5.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Groundwater VC following the approach outlined in Section 10.11.

11.6. Surface Water

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Surface Water VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

The Surface Water VC includes the following valued sub-components:

- Surface Water Quantity; and,
- Surface Water Quality.

11.6.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Surface Water VC include:

- *Water Sustainability Act;*
- *Environmental Management Act;*
- *Canadian Environmental Protection Act, 1999;*
- *Fisheries Act;*
- *Drinking Water Protection Act;*
- *International Rivers Improvement Act;*
- *Mines Act (and associated regulations, codes, and guidelines);*
- Government Actions Regulation under the *Forest and Range Practices Act*;
- Metal and Diamond Mining Effluent Regulations;
- BC Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture - Guideline Summary (ENV 2021a);
- BC Approved Water Quality Guidelines (Government of BC 2022c);
- Canadian Environmental Quality Guidelines (CCME n.d.);
- Canadian Sediment Quality Guidelines (CCME 2001a and 2001b);
- Manual of Standard Operation Procedures for Hydrometric Surveys in British Columbia (ENV 2018);
- BC Environmental Flow Needs Policy (FOR and ENV 2022);
- BC Source Drinking Water Guidelines (ENV 2020c);
- BC Field Sampling Manual (ENV 2013);
- Guidelines for Canadian Drinking Water Quality (Health Canada 2022a);
- Guidance for Evaluating Human Health Impacts in Environmental Assessment: Drinking and Recreational Water Quality (Health Canada 2017c);
- Guidelines for Canadian Recreational Water Quality – Third Edition (Health Canada 2012);
- Guidelines for Canadian Recreational Water Quality: Physical, Aesthetic and Chemical Characteristics (Health Canada 2022b);
- BC Recreational Water Quality Guidelines: Guideline Summary (ENV 2019);
- Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations (ENV 2016a);
- Relevant State of Alaska water quality standards (Alaska Department of Environmental Conservation 2022);
- Snow Survey Sampling Guide (ENV 1981); and,
- Policy for Metal Leaching and Acid Rock Drainage at Mine sites in British Columbia (ENV 1998).

11.6.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3. The description of these areas should include a discussion of relevant catchment areas, surface water flow paths and topographic divides, and how potential effects extending beyond the U.S.-Canada border have been considered (including a discussion of the modelling data to support assumptions).

11.6.3. Existing Conditions

The Application will summarize existing conditions in a manner consistent with Section 10.4.

As applicable, the Application must:

- Describe the regional and local surface water quantity and quality conditions, including a description of the local watersheds and sub-watershed, drainage basins, waterbodies, water resources, and watercourses (including intermittent streams), flood risk areas and wetlands, in relation to key Project components;
- Describe the approach taken to characterize the existing conditions for surface water quality considering all applicable information, including but not limited to any Project-specific existing conditions surveys completed, literature reviews, desktop reviews, field programs, and modelling (with reference to applicable standards or methods), and publicly available studies for other relevant projects in northwestern BC;
- Provide a conceptual model for the hydrological environment, as appropriate to describe existing conditions for surface waters. The model should be developed to support the assessment of potential changes to water and sediment quantity and quality in rivers, streams, lakes, springs and wetlands, with input from regulators and Indigenous groups;
- Provide surface water quality data used to develop or inform water balance and water quality models, inputs, including raw data, detection limits, summary statistics (minimum, mean, median, maximum, sample size, 75th percentile, 95th percentile), and summary figures that characterize spatial and temporal trends;
- Provide a list of all waterbodies and watercourses (permanent, intermittent and ephemeral) that may be directly or indirectly affected by the Project. Provide a table that groups waterbodies and watercourses by sub-watershed and provides the following information about each:
    - Type of watercourse impacted (e.g., lotic or lentic system, lake, river, pond, temporary or permanent stream); and,
    - Size of the waterbodies and watercourses, as applicable (e.g., width at the ordinary high water mark, length or area);
- Provide regional and local climatologic data including temperature, precipitation, and evapotranspiration information based on data from nearby weather stations or from a weather station on-site. This characterization should include but is not limited to the full range of seasonal and inter-annual variations and estimates of extreme events;
- Describe any Project-specific existing conditions hydrometric monitoring completed, including but not limited to:

  - A description of measurement methods, field procedures and data calculation methods including but not limited to sampling site selection, monitoring duration and frequency, and quality assurance and quality control measures;
  - A summary table of the discharge measurements recorded during the year. The summary must include staff gauge measurements, calculated flow values from a stage-discharge rating curve, and manual flow measurements;
  - Hydrographs at a scale appropriate for visually comparing flow values between stations;
  - Stage-discharge relationship figures for each monitoring station that include a visual representation and all stage-discharge measurements used to define the active relationship, as well as the relationship equation;
  - A data quality grade for each monitoring station using the Manual of British Columbia Hydrometric Standards (RISC 2018) methodology with interpretation by a Qualified Professional; and,
  - A detailed description of the methods used to fill any information gap that may exists; or methods used to confirm or refuted older information;
- Indicate the sources of the regional and site-specific data, including the time frame and data collection methods, where available;
- Document any assumptions and report on margins of error and degrees of uncertainty;
- Describe the local and regional climate projections for the area with the rationale of the climate model chosen and including a description of the current and projected climate effects on hydrology;
- Provide for each waterbody potentially affected by the Project, the total surface area, local bathymetry, maximum and mean depth, and type of substrate (sediments);
- Provide local water quality data for minimum of two years of monthly sampling results representative of current site conditions and collected using applicable standards or methods (Cavanaugh et al 1998, MWLAP 2013, MELP 1998, ENV 2022b, CCME 2015); data for water quality must include sampling site selection, monitoring duration and frequency, sampling protocol, and analytical protocol, including field and laboratory quality assurance and quality control measures (accuracy, precision and sensitivity);
- Site selection characterization should include sampling locations within the Project Footprint, the LAA and RAA (i.e., all locations that could potentially be impacted by the proposed Project);
- Describe and quantify seasonal and inter-annual patterns in streamflow for surface waterbodies in the Project area, and provide stage hydrographs for lakes expected to be affected by the Project showing the full range of seasonal and inter-annual water level variations;
- Provide the timing of freeze/thaw cycles, ice cover, and ice conditions for surface waterbodies in the Project area;
- Quantitatively describe seasonal and inter-annual trends in water quality parameters using tables and figures to summarize all COPCs and any parameters that may modify their toxicity, including physicochemical (e.g., temperature, pH, salinity, dissolved oxygen, turbidity, redox, hardness, total suspended solids, total dissolved solids), chemical constituents (e.g., major and minor ions, metals (total and dissolved), nutrients, organic compounds)); the description must include possible existing groundwater/surface water interactions;

- Describe water quality relative to receptors in the receiving environment, considering toxicity information, relevant literature, BC Water Quality Guidelines and Federal Environmental Quality Guidelines, as appropriate;
- Provide physical limnology (e.g., lake vertical profile data, information on stratification and turnover, ice cover) and existing surface water quality conditions data illustrating the seasonal and inter-annual variability to fully characterize existing conditions for Tom MacKay Lake;
- Describe the influence of bedrock and host rock geology, and acid-generating potential evaluated in Section 11.7.3 on water quality;
- Develop a quantitative surface water balance for the local and regional watershed(s) containing the Project that takes climate change into consideration;
- Identify all springs and any other potable, as well as recreational, surface water resources within the LAA and RAA and describe their current use, potential for future use, and whether their consumption has cultural importance for Indigenous nations;
- Describe the existing surface water and sediment quality conditions characterization program, including sampling site selection, monitoring duration and frequency (prior and existing operations), sampling protocol, and analytical protocol, including quality assurance and quality control measures;
- Provide detailed maps showing all drainage basins (local and regional) that will be affected by the mine, areas of groundwater discharge, wetlands, licensed surface water extraction locations, and notable hydrologic features (e.g., glaciers, lakes, etc.);
- Provide map(s) showing water quality sampling locations, including proposed or existing discharge locations and areas of disturbance;
- Identify areas where reducing conditions may occur either in anaerobic sediments or peat/bog conditions that may contribute to the mobilization and methylation of heavy metals;
- Provide spatial and temporal variation(s) in key parameters among sites using graphs that show variability in data. Refer to Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations (ENV 2016a) as needed;
- Clearly identify data which reflect reference conditions versus conditions affected by previous development (e.g., historic Eskay Creek Mine operations, including the Albino Storage Facility and underground workings);
- Provide watercourse sediment data, including sampling site selection, monitoring duration and frequency, sampling protocol, and analytical protocol, including quality assurance and quality control measures. Data will be compared to BC and Canadian sediment guidelines and illustrate spatial and temporal variation in key parameters among sites using graphs or other appropriate tables or figures;
- Describe existing sediment quality conditions, including physical parameters (e.g., grain size, total organic carbon [TOC]) and chemical constituents (e.g., major and minor ions, trace metals, nutrients, organic compounds);
- Describe the historical surface water use and potential for contamination of sediments or surface water and describe any known or suspected sediment or surface water contamination within the assessment area that could be re-suspended or otherwise affected as a result of the Project;
- Describe available Indigenous or local knowledge related to surface water; and,

- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data.

11.6.4. Potential Effects

The Application must define potential effects to the Surface Water Quantity sub-component, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.
The assessment must follow the process outlined below:

- Provide a Project-specific water use assessment identifying and describing the quantity of water resources potentially affected by the Project, including water withdrawn from local waterbodies used as a supply source, the flow or volume of water available in the waterbodies, and how and where waste waters would be discharged;
- Describe predicted changes to surface water quality for all COPCs that may affect surface water and any parameters that may modify their toxicity including but not limited to physicochemical parameters (e.g., temperature, pH, salinity, dissolved oxygen, turbidity, redox, hardness, total suspended solids, total dissolved solids), and chemical constituents (e.g., major and minor ions, metals (total and dissolved), nutrients, organic compounds);
- Indicate the surface water withdrawal requirements during all phases and specify:
    - The timing, quantity and quality of water withdrawn from the environment (flow rates and annual volumes);
    - Any treatment carried out on these waters (e.g. addition of a tracer); and,
    - The conditions under which this water is released into the receiving environment;
- Describe the effects of the Project on surface water, including effects related to Project use of surface water resources, changes to water flow or watercourse diversions and discharge of water or other substances to the environment;
- Describe water quality predictions relative to BC Water Quality Guidelines as well as other relative benchmarks and clearly document frequency and magnitude of exceedances. Identify sample locations and time windows or seasonality when predicted surface water quality may exceed provincial Water Quality Guidelines for each contaminant of potential concern. This will be tied into other effect assessment components (e.g., Section 11.8);
- Describe any hydrological or drainage changes that may impact surface water and how that may affect vegetation;
- Describe predicted changes to surface water and sediment quality due to all Project activities and components, including discharges, changes due to groundwater-surface water interactions and interactions with the existing mine infrastructure;
- Describe changes to sediment quality including changes to physical parameters (e.g., grain size, total organic carbon [TOC]) and chemical constituents (e.g., major and minor ions, trace metals, radionuclides, nutrients, organic compounds);
- Provide an integrated site-wide water balance and water quality model that incorporates the results of the groundwater numerical flow model to delineate surface water-groundwater interactions and potential effects to both surface water quantity and surface water quality. Assessment methodology and model framework should be completed to a granularity that will allow comparison to future validation measurements to confirm modelled effects;

- The following potential effects related to surface water quantity should be assessed for all Project phases:
  - Annual runoff;
  - Seasonal distribution of flow;
  - Timing and magnitude of peak and low flow events;
  - Changes to groundwater-surface water interactions; and,
  - Changes to surface water quality;
- Describe proposed modelling nodes and monitoring points where potential changes to surface water and sediment quality will be assessed, including:
  - All point and diffuse sources of discharges including seepage;
  - Locations immediately upstream and downstream of any point or diffuse sources of Project-related discharge;
  - Locations representative of the receiving environment in all affected watersheds, including at the boundary of the LAA and RAA, considering cumulative effects and transboundary issues; and,
  - Locations immediately prior to and following any surface water confluence;
- Provide tabular data for all inputs to the model that indicate assumptions and rationale for derivation as supported by existing conditions data;
- Provide different assessment scenarios that consider the most likely and worst-case water quality conditions, considering variation in groundwater flows, surface water flows, geochemical source terms, and surface water quality;
- Describe any applicable water quality treatment measures and provide evidence supporting the effectiveness of these measures; this should include predicted inflow and outflow concentrations for all relevant water quality parameters;
- Describe the quantity and quality of all effluent streams released from the site to the receiving environment, including but not limited to seepage, effluent from treatment facilities, dewatering activities, overflow from pits or mine workings, and surface runoff from the mine site and Project components;
- Describe potential changes to surface water quality due to erosion and sedimentation and aerial deposition of fugitive dust and particulate matter containing contaminants;
- Provide model outputs that will allow comparison to future validation measurements to confirm modelled effects;
- Assess the risk of adverse effects to receptors in the receiving environment, considering toxicity benchmarks, relevant literature, and applicable guidelines as appropriate; and,
- Quantitatively estimate the potential Project-related effects on effluent and receiving environment water quality resulting from acid rock drainage and/or metal leaching evaluated in Section 11.7, in the integrated site-wide chemical mass balance model.

The Application must describe the physical footprints of the areas and activities, if any, that the Project will cause to be flooded, or where the project will regulate/affect downstream flows.

The Application must describe the maximum physical extent of effects to water quality or quantity in downstream flows and upstream impoundments.

11.6.5. Effects Management

The Application must describe effects management approaches for the Surface Water VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6.

Water treatment should be viewed as a mitigation strategy only if other prevention mitigation methods (e.g., source control) are not feasible or sufficient. If water treatment is proposed as a mitigation strategy, the Application must include:

- A characterization of influent and effluent chemistry and flow;
- Demonstration of the effectiveness of the collection and holding system;
- Conceptual design of the treatment technology;
- Predicted reagent use;
- Predicted performance under the expected range of flow and influent chemistry conditions;
- A sludge disposal plan; and,
- Maintenance requirements.

The Application must:

- Demonstrate that the treatment is sufficient to achieve long-term environmental protection requirements;
- Describe the mitigation measures for the possible effects on the quantity and quality of surface water and sediment, including water supply wells and provide a rationale with quantitative and qualitative evidence that explains the effectiveness of proposed measures;
- Describe any applicable water quality treatment measures and provide evidence supporting the effectiveness of these measures, including predicted inflow and outflow concentrations for relevant water quality parameters;
- Provide the details of mitigation measures comprised in water management plans proposed for waterbodies and watercourses likely to be affected during all phases of the Project, including measures applicable to water use minimization;
- Describe and justify water use for the Project and the measures that will be taken to eliminate or reduce the adverse effects, including the supply and discharge of water, and potential exchanges between watersheds;
- If the final details of the hydrostatic tests have not been confirmed yet, the proponent nonetheless must specify the expected requirements, the options available and the criteria it intends to apply to assure protection of water resources; and,
- Describe surface water monitoring programs during the operations and post-closure periods including:
    - The proposed monitoring points to assess changes to surface water quality, which should include monitoring at all point and diffuse sources of discharge and in the immediate receiving environment and at the boundaries for the outer mixing zone, the Project, the LAA and RAA; and,

- The parameters that will be measured, the duration and frequency of monitoring, the sampling protocol and analysis protocol and the quality assurance and quality control measures. Include the description of the measures that will be implemented if the criteria are exceeded.

11.6.6. Assessing Positive Effects

The Application must describe any positive effects to the Surface Water VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.6.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Surface Water VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.6.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Surface Water VC, including the criteria outlined in Section 10.9.

11.6.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Surface Water VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA. As applicable, the Application must:

- Quantitatively predict the quality of water downstream of all Project influence considering all past, present, and foreseeable projects including but not limited to the proposed KSM Project effects on water quality on Sulphurets Creek and Unuk River; and,
- Consider, as applicable, the BC Water Quality Guidelines, Federal Environmental Quality Guidelines, and the State of Alaska Water Quality Standards when evaluating water downstream of all Project influence including but not limited to predicted water quality in the Unuk River.

11.6.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Surface Water VC following the approach outlined in Section 10.11.

11.7. Terrain and Soils

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Terrain and Soils VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

The Terrain and Soils VC includes the following valued sub-components:

- Terrain Stability;
- Soil Quantity; and,
- Soil Quality.

11.7.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Terrain and Soils VC include:

- *Mines Act* (and associated regulations, codes and guidelines; e.g., Health, Safety and Reclamation Code, BC Guide to Processing a Mine Project Application);
- *Forest Range and Practices Act;*
- *Agricultural Land Commission Act* and Agricultural Land Reserve regulations;
- BC Contaminated Sites Regulation under the *Environmental Management Act;*
- Joint Application Information Requirements for *Mines Act* and *Environmental Management Act* Permits (EMPR and ENV 2019);
- Canadian Soil Quality Guidelines for the Protection of Environment and Human Health (CCME n.d.);
- Guidelines and Standards to Terrain Mapping in British Columbia (RIC 1996);
- Soil Inventory Methods for British Columbia (RIC 1995);
- Standard for Terrestrial Ecosystem Mapping in British Columbia (RIC 1998);
- Health Canada's risk assessment guidance (Health Canada 2022c); and,
- BC Field Sampling Manual – Part D: Solids (ENV 2020b).

11.7.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.7.3. Existing Conditions

As applicable, the Application must:

- Describe general information about existing physiography, including landforms, soils and sediments within the LAA and RAA, sediment stratigraphy; surficial geology maps and cross-sections of appropriate scale;
- Provide existing conditions soil map units and data (soil series distribution and extent);
- Identify any areas of ground instability;
- Provide a geohazard inventory of terrain features, including Terrain Classification and Terrain Stability Classification;
- Provide maps depicting soil depth by horizon and soil order within the Project site to support soil salvage and reclamation efforts;

- Provide existing conditions maps and data for soil erosion potential;
- Describe the volume and suitability of topsoil and overburden for use in the reclamation of disturbed areas including an assessment of the acid-generating and metal leaching potential of overburden to be used;
- In support of the overburden, pit walls and waste rock characterization program, provide a description of rock core samples' representativeness (i.e., number of samples relative to tonnage per lithologies and spatial representativeness) that will be used for the assessment of acid rock drainage (ARD) and metal leaching (ML). Characterization of tailings should also be based on representative samples;
- Provide existing conditions maps and data for land capability as relevant;
    - Soil classification, including order, group, family, series and type of soil prior to construction, and quantify the soil classification;
    - The productivity of land and type of agricultural resource;
    - The soil types in the assessment area highly susceptible to wind and erosion, soil compaction and loss of structure and tilth;
    - Any other soil types needing specific management of mitigation measures; and,
    - Soil conservation and protection measures;
- Characterize topsoil and subsoil for suitability as growth media for reclamation;
- Characterize land or agricultural capability as relevant;
- Describe the historical land use and the potential for contamination of soils and sediments and describe any known or suspected soil contamination within the assessment areas that could be re-suspended, released or otherwise disturbed as a result of the Project;
- Describe the bedrock and host rock geology, including a table of geologic descriptions, including alteration styles, geological maps, and cross-sections of appropriate scale;
- Describe geomorphology, topography and geotechnical characteristics of areas proposed for construction of major Project components, including the presence and distribution of permafrost, if applicable;
- Identify any areas with potential for neutral rock drainage and metal leaching;
- Support the identification of any areas with potential for acid-generating rock under existing conditions through soil sampling, including:
    - Identify any existing ARD and ML from exposed surficial material, bedrock, and existing mine infrastructure including the flooded underground workings; and,
    - Describe the sampling procedure and types of methods used to evaluate ML/ARD for all sampled material;
- Identify any geological hazards that exist in the areas planned for the Project facilities and infrastructure, including for example:
    - History of seismic activity in the area, including induced earthquakes, and secondary effects such as the risk of seismic generated tsunamis, landslides and liquefaction;
    - Evidence of active faults;
    - Isostatic rise and subsidence;

  - History of landslides, slope erosion and the potential for ground and rock instability/landslides, and subsidence during and following Project activities;
  - History or and potential of submarine landslides;
  - History and potential of volcanic related hazards;
  - History of bank erosion or scour;
  - History of tsunamis generated by major teleseismic earthquakes around the Pacific Ocean;
  - Instability or failure related to geological hazards; and,
  - History and/or potential of avalanche related hazards;
- Describe and provide any Project-specific existing conditions data (i.e., pre-operation and during operation of existing mining activities, and data collected from 2019 to 2022) surveys completed, including the methods used and how the results helped to characterize existing conditions (for example, the source of data available, filled an information gap; confirmed or refuted older information);
- Provide a characterization of the geochemical composition of expected mined materials (such as waste rock, ore, low grade ore, tailings, overburden and potential construction material) which should include: ore mineralogy, major and trace elements, and potential for acid generation, neutralization and contaminated neutral drainage;
- Describe existing concentrations of COPCs (these may include but are not limited to selenium, sulphate, cadmium, nitrate and calcite, heavy metals) with the local, regional and down gradient receiving environments;
- Provide a geochemical characterization of leaching potential; and,
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data and related to soil.

11.7.4. Potential Effects

The Application must define potential direct and indirect effects to the Terrain and Soils VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.
The assessment must follow the process outlined below:

- Provide an overall description of changes related to landscape disturbance including fragmentation of habitats and Project effects on areas of ground instability;
- Describe any COPCs associated with the Project that may affect soil or sediment;
- Describe the historical land use and the potential for contamination of soils and sediments and potential for loss of soil fertility. Describe any known or suspected soil contamination within project areas that could be re-suspended, released or otherwise disturbed as a result of the Project; and,
- Predict ML/ARD including oxidation of primary sulphides and secondary soluble sulphate minerals, including:
  - Provide potentially acid-generating (PAG) rock volumes and tonnage, and disposal methods;
  - Assess different methods of segregating potentially acid generating and non-potentially acid generating waste materials during the Project's life cycle;

- Describe methods that will be applied to prevent or control ML/ARD during all applicable phases of the Project; and,
- Describe contingency plans, construction, operational and post-closure monitoring, and maintenance plans, and necessary adaptive management to address ML/ARD.

11.7.5. Effects Management

The Application must describe effects management approaches for the Terrain and Soils VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6. This must include a ML/ARD management plan, including on-going geochemical characterization.

The Application must describe and justify the soil treatment methods to eliminate or reduce the adverse effects on the soils and materials in the root area, including recovery techniques (e.g., soil stripping including the proposed width, stump removal and other soil treatment techniques), soil separation maintenance measures, control measures for wind and water erosion, work shutdown procedures in case of wet conditions, and soil settlement prevention measures.

11.7.6. Assessing Positive Effects

The Application must describe any positive effects to the Terrain and Soils VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.7.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Terrain and Soils VC that are anticipated as a result of the Project, and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.7.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Terrain and Soils VC, including the criteria outlined in Section 10.9.

11.7.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Terrain and Soils VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA.

11.7.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Terrain and Soils VC following the approach outlined in Section 10.11.

11.8. Fish and Fish Habitat

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Fish and Fish Habitat VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

The Fish and Fish Habitat VC includes the following valued sub-components:

- Fish, defined as parts of fish, shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals;
- Fish Habitat; and,
- Aquatic Resources.

11.8.1. Relevant Statutes, Policies and Frameworks

Statutes, policies, and frameworks that may be relevant to the Fish and Fish Habitat VC include:

- *Canadian Environmental Protection Act, 1999*;
- *Environmental Management Act* and regulations;
- SARA;
- *Fisheries Act* and regulations;
- *Riparian Areas Protection Act;*
- *Water Sustainability Act* and associated regulations;
- BC Approved Water Quality Guidelines (Government of BC 2022c);
- Canadian Water Quality Guidelines (CCME);
- Canadian Tissue Residue Guidelines (CCME);
- Government Actions Regulation under the *Forest & Range Practices Act*;
- BC Freshwater Fishing Regulation;
- BC Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture - Guideline Summary (ENV 2021a);
- Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operators (ENV 2016a);
- Fisheries and Oceans Canada (DFO) policies including, but not limited to:
    - Policy for Applying Measures to Offset Adverse Effects on Fish and Fish Habitat Under the *Fisheries Act* (DFO 2019a);
    - Measures to Protect Fish and Fish Habitat (DFO 2019b);
    - Standards and Codes of Practice (DFO 2021);
    - Pathways of Effects (DFO 2018);

  - Fish and Fish Habitat Protection Policy Statement, 2019 (DFO 2019c);
  - Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada (DFO 2013a);
  - A Science-Based Framework for Assessing the Response of Fisheries Productivity to State of Species or Habitats (DFO 2013b); and,
  - A Framework for Assessing Fisheries Productivity for the Fisheries Protection Program (DFO 2013c);
- Relevant State of Alaska water quality standards (Alaska Department of Environmental Conservation 2022);
- Wetland Ways: Interim Guidelines for Wetland Protection and Conservation in British Columbia (Wetland Stewardship Partnership 2009); and,
- BC Environmental Flow Needs Policy (FOR and ENV 2022).

11.8.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.8.3. Existing Conditions

As applicable, the Application must:

- Provide maps of the watershed(s) in the vicinity of the Project showing key watercourses and waterbodies;
- Provide a description of the biodiversity with the freshwater environment, including trophic state, periphyton, phytoplankton, zooplankton, fish and the interactions and relative significance of each species with the identified food chains;
- Describe and provide maps of relevant fish habitats, including characteristics that directly and indirectly support fish in carrying out their life processes, including critical habitat or sensitive habitat areas such as known spawning locations identified in historic assessments (e.g., redds); habitat information includes water depths (bathymetry) and the littoral, sublittoral, bathyal, epipelagic, mesopelagic, and bathypelagic zones;
- Describe relevant fish habitat relative to Project infrastructure where applicable, including locations of access roads, utility corridors, waste rock stockpiles, effluent discharges, and seepage locations;
- Provide a map clearly identifying all existing fish and fish habitat conditions sampling locations relative to Project infrastructure, disturbance areas, seepage and discharge locations, and water quality and quantity sampling locations. as well as known and suspected fish barriers; fish barriers identified in previous assessments and studies will be described in terms of location and passability and evaluated based on guidelines included in the Fish Stream Identification Guidebook (BC MOE 1998) and Reconnaissance (1:20,000) Fish and Fish Habitat Inventory Procedures (RISC 2001);
- Describe habitat by mesohabitat (such as, pool, riffle, run), including the length of the section, width of the channel from the high-water mark (bankfull width), water depths, type of substrate (sediments), aquatic and riparian vegetation, and photos;
- Describe existing aquatic habitat conditions information that includes sediment chemistry (including but not limited to quality, particle size, and total organic carbon), fish tissue and benthic invertebrate tissue, as appropriate;

- Describe existing conditions study tissue (fish, invertebrate, periphyton) sampling design process including site selection, monitoring duration and frequency, sampling protocol, and analytical protocol, including quality assurance and quality control measures, and present all tissue data relative to applicable provincial and federal guidelines; tissue data will be graphed and compared among sites and monitoring years in order to illustrate spatial and temporal variation;
- Describe aquatic habitat data collected prior to historical development and data collected throughout the history of the Project area; accurately differentiate data between pre- and post-historical development;
- Establish existing contaminant concentrations in key fish species/tissues consumed as traditional foods, in cooperation with Indigenous harvesters or others (where possible) or utilize a food chain model as part of the Human Health Risk Assessment that is able to predict fish traditional food tissue concentrations based on measured baseline fish tissues and baseline and predicted water quality;
- Provide a list of aquatic species at risk (species listed in Schedule 1 of the *Species at Risk Act* and species assessed as at risk by COSEWIC) likely to be present within the vicinity of the Project;
- Describe how climate change and other external pressures may be affecting or may come to affect fish and aquatic resources in the assessment area;
- Where appropriate, include information on other aquatic resources (e.g., invertebrates, periphyton) when presenting existing conditions data associated with the Project; and,
- Provide a characterization of fish habitat features that may demonstrate the presence of fish species in terms of appropriate habitats—water quality and quantity characteristics, sediment type characteristics, watercourse and waterbody floor terrain features, prey, shelter, refuge, feeding, spawning habitats, nursery habitats, rearing habitats, overwintering, migration routes, and sensitive times for these activities:
    - Describe the historical occurrence, distribution, and conservation status of fish species in the watercourses and waterbodies;
    - Identify the biodiversity metrics, biotic and abiotic indicators that are used to characterize existing biodiversity for freshwater fish and/or aquatic species, including the rationale for their selection;
    - Describe and provide any Project-specific existing conditions surveys completed, including the methods used (for example, location of sampling stations, catch methods, date of catches, species, catch-per-unit effort) and how the results helped to characterize existing conditions (for example, the source of data available, filled an information gap; confirmed or refuted older information);
    - Describe the fish species present (by season and life stage) and provide an estimate of the abundance and distribution of those species;
    - Describe the location of important fish habitats and their relative significance;
    - Describe habitat use, including describing primary and secondary productivity in affected water bodies with a characterization of biotic interaction processes (such as, food web and trophic levels, nutrient cycling), seasonal variability in habitat use ranges, and sensitive periods;
    - Identify the location of all known watercourse crossings and natural obstacles (such as falls, beaver dams), and of these, note those that hinder fish passage and provide the guidelines that were used to assess passability of obstacles;

- Describe the local and regional climate projections for the area with rationale of the climate model chosen and including a description of the current and projected climate impacts on fish, habitat and habitat use;
- Provide information on the use of fish and/or aquatic species as country foods and reference to species of Indigenous cultural use and value;
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data; and,
- Describe available Indigenous or local knowledge related to fish, fish habitat, and aquatic resources.

11.8.4. Potential Effects

The Application must define potential direct and indirect effects to the Fish and Fish Habitat VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects. Table 8 presents a preliminary view of how each effect must be measured for the Fish and Fish Habitat VC.

In consideration of potential effects below, the Application must:

- Describe gaps in information about populations potentially negatively affected by the Project; provide rationales why population information was not needed for effects assessments; and describe uncertainties in effects assessments because of a lack of population information;
- Describe and justify how the term "population" is defined and applied for the effects assessments of different fish species, including salmon; and,
- Include a discussion of how Project construction timing correlates to key fisheries windows for freshwater fish, and any potential effects resulting from overlapping periods.

Table 8: Indicators to Be Used in Assessment of Potential Effects to the Fish and Fish Habitat Valued Component

Potential Effect	Indicators by Sub-component		
	Fish	Aquatic Resources	Fish Habitat
Describe any direct, or indirect predicted positive and/or adverse effects to freshwater fish (all developmental stages) and fish habitat as defined in subsection 2(1) of the *Fisheries Act*, including the calculations of any potential habitat loss (temporary or permanent) including spawning grounds, nursery, rearing, food supply, and migration areas, or death of fish. The assessment must include a consideration of:			
Changes to water quality both at the discharge point and in the receiving environment as predicted by the site-wide chemical mass balance model	Changes in fish health (e.g., from exposure to elevated levels of COPCs)	Changes in composition, abundance, or diversity of periphyton and benthic invertebrates Changes in concentrations of COPCs relative to relevant benchmarks	n/a
The geomorphological changes and their effects to hydrodynamic conditions and fish habitats (such as modification of substrates, dynamic imbalance, silting of spawning beds)	n/a	n/a	Changes to the quality and quantity of fish habitat (e.g., aerial extent of HADD, habitat type distribution/abundance)

Potential Effect	Indicators by Sub-component		
	Fish	Aquatic Resources	Fish Habitat
The modifications of hydrological and hydrometric conditions on fish habitat, critical habitat for aquatic species at risk, and on the fish species' life cycle activities (such as, reproduction, fry-rearing, movements)	Changes in fish distribution and abundance	n/a	Changes to the quality and quantity of fish habitat (e.g., aerial extent of HADD, habitat type distribution/abundance)
Potential effects to riparian areas that could affect aquatic biological resources and productivity taking into account any anticipated modifications to fish habitat (such as, structure, cover)	n/a	n/a	Changes to the quality and quantity of fish habitat (e.g., aerial extent of HADD, instream and riparian habitat type distribution/abundance)
Changes to water quality (both at the discharge and in the receiving environment) that have the potential to result in adverse effects to fish health	Changes in fish health (e.g., from exposure to elevated levels of COPCs)	Changes in composition, abundance, or diversity of periphyton and benthic invertebrates Changes in concentrations of COPCs relative to relevant benchmarks	n/a
Effects to fish biodiversity considering identified biodiversity metrics and how the Project's effects on aquatic biodiversity may contribute to changes in regional biodiversity and effects on local and regional ecosystems	Changes in fish distribution and abundance. (Biodiversity metrics will be defined in Process Planning.)	Changes in composition, abundance, or diversity of periphyton and benthic invertebrates	n/a
Any potential imbalances in the food web and trophic levels in relation to existing conditions	Changes in fish distribution and abundance Changes in fish health	Changes in composition, abundance, or diversity of periphyton and benthic invertebrates	n/a
Effects to the primary and secondary productivity of water bodies and how Project-related effects may affect fish food sources	n/a	Changes in composition, abundance, or diversity of periphyton, zooplankton, phytoplankton, and benthic invertebrates	n/a
Potential for direct effects from contaminants on fish and also bioaccumulation of contaminants (e.g., selenium, mercury) in fish downstream of the Project	Changes in fish health (e.g., from exposure to elevated levels of COPCs) Project-related mortality	n/a	n/a

Potential Effect	Indicators by Sub-component		
	Fish	Aquatic Resources	Fish Habitat
Potential direct and indirect effects on fish behaviour, distribution, abundance, and migration patterns	Changes in fish health (e.g., from exposure to elevated levels of COPCs) Changes in fish distribution and abundance Project-related mortality	n/a	n/a
Describe potential losses of individuals and relationship to population density and the resiliency of a population	Changes in fish distribution and abundance Project-related mortality	n/a	n/a
Describe the effects of changes to the aquatic environment on freshwater fish and their habitat, including the anticipated changes in the composition and characteristics of the populations of various fish species and Provincially or Federally listed aquatic species at risk	Changes in fish health (e.g., from exposure to elevated levels of COPCs) Changes in fish distribution and abundance	n/a	Changes in fish habitat resulting from direct habitat loss due to Project infrastructure; and Changes in fish habitat due to changes in water quality
Describe any modifications in migration, local movements (such as, upstream and downstream migration, and lateral movements) or stranding of fish, following the construction, operation or closure of works (such as, physical, chemical, and hydraulic barriers)	Changes in fish distribution and abundance Project-related mortality	n/a	Changes to the quality and quantity of fish habitat or access (e.g., aerial extent of HADD, habitat type distribution/ abundance, new barriers added due to infrastructure) Project-related mortality
Identify any reduction in fish populations as a result of potential overfishing due to increased access to the Project area	Changes in fish distribution and abundance Project-related mortality	n/a	n/a
Contaminant levels in harvested species and their prey	Changes in fish health (e.g., from exposure to elevated levels of COPCs) Changes in fish distribution and abundance	Changes in composition, abundance, or diversity of periphyton and benthic invertebrates Changes in concentrations of COPCs relative to relevant benchmarks	n/a
Describe any modifications and use of habitats, including the ability to access the habitat	Changes in fish distribution and abundance	n/a	Changes to the quality and quantity of fish habitat or access (e.g., aerial extent of HADD, habitat type distribution/ abundance)

Potential Effect	Indicators by Sub-component		
	Fish	Aquatic Resources	Fish Habitat
Include a discussion of how vibration caused by Project activities (e.g., blasting) may affect freshwater fish habitat and behaviour, such as spawning or migrations	Changes in fish distribution and abundance Project-related mortality	n/a	n/a
Describe the predicted/modelled direct effects from bioaccumulative contaminants on fish and benthic invertebrates for (e.g., polychlorinated biphenyls [PCBs], polybrominated diphenyl ethers [PBDEs], selenium, mercury) as appropriate	Changes in fish health (e.g., from exposure to elevated levels of COPCs) Changes in fish distribution and abundance Project-related mortality	Changes in composition, abundance, or diversity of periphyton and benthic invertebrates Changes in concentrations of COPCs relative to relevant benchmarks	n/a
Describe potential effects to fish from contaminants by comparing predicted water quality for all Project phases and at all key locations in the receiving environment (from Section 11.6) to applicable water quality guidelines, and/or site-specific objectives or benchmarks, and/or relevant toxicity test results (either site-specific or published), and/or other applicable methods	Changes in fish health (e.g., from exposure to elevated levels of COPCs) Changes in fish distribution and abundance Project-related mortality	n/a	n/a
Describe potential effects from impingement and entrainment of freshwater fish and other aquatic biota through the water withdrawal and from discharge associated with hydrostatic testing	Project-related mortality	n/a	n/a
Describe any need for a *Fisheries Act* authorization, and if required, a preliminary fish habitat offsetting plan with consideration of DFO guidance documents	Project-related mortality	n/a	Changes to the quality and quantity of fish habitat (aerial extent (m^2) of HADD of fish habitat)
Describe any need for a SARA permit	Project-related mortality	n/a	n/a
Describe/justify watercourse-crossing techniques	n/a	n/a	Changes to the quality and quantity of fish habitat
Consider potential risks/effects of introduction and intrusion of aquatic invasive species	Changes in fish distribution and abundance Project-related mortality	n/a	n/a
Describe potential effects from dust deposition	n/a	n/a	Changes to the quality and quantity of fish habitat
Describe potential effects from sediment deposition from roads	n/a	n/a	Changes to the quality and quantity of fish habitat

Potential Effect	Indicators by Sub-component		
	Fish	Aquatic Resources	Fish Habitat
Describe effects from changes in sound level and exposure	Changes in fish distribution and abundance Project-related mortality	n/a	n/a
Describe effects from changes in light level	Changes in fish distribution and abundance	Changes in composition, abundance, or diversity of periphyton and benthic invertebrates	Changes to the quality and quantity of fish habitat and access to habitat (e.g., riparian habitat type distribution/ abundance)
Describe any positive changes, such as habitat creation	n/a	n/a	Aerial extent (m^2) expansion of fish habitat
Describe the anticipated changes in the composition and characteristics of populations of freshwater fish, following modifications to the aquatic environment, including but not limited to:			
Disruption of life stages or habitat with regard to their productivity, life cycles, migration, or local movements, including a consideration of feeding, nursing, overwintering, resting	Changes in fish distribution and abundance Project-related mortality		Changes to the quality and quantity of fish habitat and access to habitat (e.g., aerial extent of HADD, habitat type distribution/abundance)
Disruption of feeding activities	Changes in fish distribution and abundance Project-related mortality	n/a	n/a
Distribution and abundance	Changes in fish distribution and abundance	n/a	n/a
A consideration of a change in behaviour, displacement, access to habitat, habitat structure, species composition, ecosystem structure and function and habitat quality	Changes in fish health (e.g., from exposure to elevated levels of COPCs) Changes in fish distribution and abundance Project-related mortality	Changes in composition, abundance, or diversity of periphyton and benthic invertebrates Changes in concentrations of COPCs relative to relevant benchmarks	Changes to the quality and quantity of fish habitat and access to habitat (e.g., aerial extent of HADD, habitat type distribution/abundance)

11.8.5. Effects Management

The Application must describe effects management approaches for the Fish and Fish Habitat VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate following information requirements described in Section 10.6.

The Application must:

- Identify measures to prevent and mitigate the risk of harmful alteration, disruption or destruction of fish habitat, including disruptive activities in key sensitive periods and locations (such as, spawning and migration) to fish, and in water or areas frequented by fish;
- Identify measures to prevent and mitigate potential death of fish; and,
- Identify measures to avoid the deposit of substances harmful to fish and in water or areas frequented by fish.

11.8.6. Assessing Positive Effects

The Application must describe any positive effects to the Fish and Fish Habitat VC that are anticipated as a result of the Project and its associated effects management approaches, following the information requirements described in Section 10.7.

11.8.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Fish and Fish Habitat VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.8.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Fish and Fish Habitat VC, including the criteria outlined in Section 10.9.

11.8.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Fish and Fish Habitat VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA.

11.8.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Fish and Fish Habitat VC following the approach outlined in Section 10.11.

11.9. Vegetation and Ecosystems

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Vegetation and Ecosystems VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

The Vegetation and Ecosystems VC includes the following valued sub-components:

- Plant Species of Interest (including provincially and federally listed species, culturally valued plants, and invasive plants);

- Plant Communities of Interest (including provincially listed ecological communities); and,
- Ecosystems (including parkland and alpine, riparian, wetland, and old growth forest).

11.9.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Vegetation and Ecosystems VC include:

- *Forest and Range Practices Act;*
- *Forest Act;*
- *Weed Control Act* and regulation;
- *Water Sustainability Act* and regulations;
- *Forestry Act*;
- *Land Act*;
- SARA;
- Provincial Forest Use Regulation;
- Cassiar Iskut-Stikine Land and Resource Management Plan;
- BC Conservation Framework (ENV 2009);
- Federal Policy on Wetland Conservation (Government of Canada 1991);
- Standard for Terrestrial Ecosystem Mapping in British Columbia (RIC 1998);
- Canadian Wetland Classification System (National Wetlands Working Group 1997);
- Wetlands of British Columbia: A Guide to Identification (MacKenzie and Moran 2004); and,
- Wetland Ecological Functions Assessment: An Overview of Approaches (Hanson et al. 2008).

11.9.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.9.3. Existing Conditions

As applicable, the Application must:

- Identify and classify terrestrial ecosystems in the LAA according to the Biogeoclimatic Ecosystem Classification (BEC) system and the applicable field guide(s) to site identification;
- Provide ecosystem mapping used to identify and classify terrestrial ecosystems using appropriate provincial standards, including the scale of mapping, in particular using Terrestrial Ecosystem Mapping (RIC 1998, 1999) for the LAA and Predictive Ecosystem Mapping (RIC 2000) for the RAA;
- Include appropriate field verification of the ecosystem mapping;

- Describe the biodiversity, relative abundance and distribution of vegetation species and communities of ecological, economic or human importance (e.g., traditional use, species at risk and their critical habitat as described in federal recovery strategies or action plans for species at risk, forestry, tame pasture, native prairie, wetland or old growth) within the LAA;
- Describe the local and regional climate projections for the area with rationale of the climate model chosen and include a description of the current and projected climate effects on vegetation;
- Describe the location, extent and condition of ecological communities of conservation concern;
- Describe the conservation status (i.e., listed under SARA or assessed by COSEWIC to be at risk including species of concern) applicable to any particular species or communities within the LAA;
- Identify and classify wetland associations following *Wetlands of British Columbia: A Guide to Identification* (Mackenzie and Moran 2004) and within the scope of Federal permits, authorizations, or other approvals;
- Identify the location and extent of forest stands by seral stage, including old forest ecosystems and Old Growth Management Areas;
- Identify any Wildlife Tree Reserve Areas that have been established in forestry cutting permits within the LAA;
- Identify the location and extent of forest-stand altering events (e.g., logging, insects/disease, fire);
- Identify the location and abundance of rare plant species and rare ecological communities, based on targeted field surveys;
- Identify the location and abundance of SARA-listed species in the assessment area. Estimates may be based on existing information, or additional surveys, to provide current data sufficient for reliable estimates that will allow for the assessment of effects to be evaluated against federal guidance and to inform mitigation measures and/or offsetting;
- Describe any species at risk critical habitat as described in final or draft recovery strategies or action plans, including location and extent within the LAA and RAA;
- Describe the current and historical level of disturbance associated with vegetation, including the type of disturbance (if known) and a description of level of habitat fragmentation in the LAA;
- Describe the amount, merchantability and location of any merchantable timber to be removed during Project construction in the LAA;
- Identify the biodiversity metrics, biotic and abiotic indicators that are used to characterize existing vegetation biodiversity conditions and discuss the rationale for their selection;
- Provide GIS data files of mapped features depicting vegetation presence within the assessment area;
- Describe the natural disturbance regime (such as, fire, floods, droughts, etc.);
- Describe the presence and abundance of invasive and non-native species in the Project area;
- Provide information on the use of local vegetation as a source of country foods (traditional foods) and the presence and abundance of culturally important traditional use species in the Project area, integrating available Indigenous and local knowledge as applicable;

- Establish existing contaminant concentration conditions in key plant species/parts consumed as traditional foods, in cooperation with Indigenous harvesters or others (where possible) to inform the human health risk assessment;
- Identify ecosystems that are sensitive or vulnerable to acidification resulting from the deposition of atmospheric contaminants;
- Describe available Indigenous or local knowledge related to vegetation;
- For riparian and wetland environments:
    - Provide pre-Project characterization of the shoreline, banks, current and future flood risk areas, wetland catchment boundaries;
    - Quantify, delineate and describe wetlands (fens, marshes, peat lands, bogs, etc.) within the assessment area potentially directly, indirectly and/or cumulatively affected by the Project in the context of:
        - Wetland class, ecological community type and conservation status;
        - Biodiversity;
        - Wetland habitat that provides important functions for species at risk;
        - Abundance at Local, Regional, and Provincial scales;
        - Distribution; and,
        - Current level of disturbance;
    - Identify wetlands potentially directly or indirectly affected by the Project and within scope of Federal permits, authorizations, or other approvals;
    - Determine whether these wetlands are within a geographic area of Canada where wetland loss or degradation has reached critical levels, or considered ecologically or socially or economically important to a region; and,
    - Identify and describe wetland capacities to perform hydrological and water quality functions, provide for wildlife and wildlife habitat or other ecological functions; and,
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data.

11.9.4. Potential Effects

The Application must define potential direct and indirect effects to the Vegetation and Ecosystems VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects. The assessment must follow the process outlined below:

- Provide an overall description of changes related to landscape disturbance including loss and fragmentation of habitats;
- Describe any hydrological or drainage changes that may alter moisture regimes/impact surface water and how that may affect vegetation and wetlands;
- Describe effects to riparian, wetland and terrestrial biodiversity and function considering biodiversity metrics, effects of fragmentation, changes to regional biodiversity;

- Describe any positive changes (such as, from offsets that result in revegetation, new wetlands, etc.);
- Describe and justify the construction methods used to cross wetlands and other sensitive habitats, and the criteria for determination of techniques proposed for each crossing, including the locations where trenchless crossing methods will be employed;
- Quantify the area of vegetation communities, riparian, wetland, and terrestrial environments that may be cleared or otherwise disturbed within the assessment area during all phases of the Project, including a description of the disturbance;
- Describe any changes to or loss of wetland function, including consideration of ecological (e.g., hydrological, biogeochemical cycling, habitat and climate functions) and socio-economic functions of wetlands. Describe and justify the methodology used to assess the effects (both direct and indirect);
- Describe potential effects from Project emissions that may result in contamination and acidification of nearby land and waterbodies, including consideration of the sensitivity of vegetation communities, wetlands, and riparian and terrestrial environments to disturbance;
- Describe potential changes to contaminant levels in harvested species (e.g., from direct uptake of contaminants or deposition of contaminants from dust);
- Describe potential changes to riparian, wetland and terrestrial environments due to activities that may affect topography, soil erosion, compaction, and productivity, contamination, bank slopes and suspension of sediment or due to any contaminants of concern potentially associated with the project that may affect vegetation, soil, or sediment;
- Describe any known or suspected soil contamination within the assessment area that could be re-suspended, released or otherwise disturbed as a result of the Project;
- Provide a wetland functions assessment in accordance with the guiding principles of Wetland Ecological Functions Assessment: An Overview of Approaches (Hanson et al. 2008) or any subsequent approved guidelines by which to determine the most appropriate functions assessment methodology to use (e.g., Technical Guidance Document for Evaluating the Health of Wetlands [BC Wildlife Federation and BC Ministry of Forests, Range, Natural Resource Operations and Rural Development, 2021] and other guidelines referenced under Part 2 Reference Documents of the Tailored Impact Statement Guidelines Template). The wetland function assessment will inform the design of applicable mitigation measures; and,
- Develop a metal uptake sampling and monitoring program that builds on existing conditions data.

11.9.5. Effects Management

The Application must describe effects management approaches for the Vegetation and Ecosystems VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate following information requirements described in Section 10.6. The Application must describe the vegetation standards and controls to be implemented while constructing and operating the Project. Describe any integrated vegetation management programs, including:

- The criteria and circumstances for applying chemical, biological or mechanical control methods;
- The methods to be used to prevent spread of non-native, invasive species;

- Describe and justify the ways of avoiding or reducing the temporary or permanent adverse effects on wetlands and riparian habitats;
    - Explain how avoidance of wetlands was considered, namely by considering other locations for Project components and activities;
    - Explain how mitigation measures consider the natural succession and the variability of the environment over time;
    - Describe proposed compensation measures;
    - Describe any sources of uncertainty with respect to the anticipated effectiveness of reclamation;
    - Explain how uncertainty was taken into account in the predictions; and,
    - Provide reclamation standards to be used to evaluate ecological equivalency of post-operation reclaimed landscapes.
- Describe the selection of plant species to be kept and planted to promote naturally low-growing plant communities;
- Describe any revegetation procedures to be implemented as part of the Project, including:
    - Revegetation techniques and the locations where they would be implemented;
    - Seed mixes to be used, application rates, and location of application;
    - Identification and prioritization of use of culturally important species;
    - Fertilizers to be used, application rates and locations, and criteria for determining these specifications; and,
    - Contingency planting and seeding plans that include a description of species to be replanted, the locations for replanting and criteria for determining these specifications;
- Identify measures to prevent and/or minimize and/or mitigate the uptake/deposition of contaminants on plants harvested by people for food or medicinal use; and,
- Describe how the Environmental Mitigation Policy for BC (i.e., the mitigation hierarchy) will be implemented to prioritize avoidance of culturally important, rare, and at-risk species and ecosystems, whenever possible.

11.9.6. Assessing Positive Effects

The Application must describe any positive effects to the Vegetation and Ecosystems VC that are anticipated as a result of the Project and its associated effects management approaches following information requirements described in Section 10.7.

11.9.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Vegetation and Ecosystems VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account following information requirements described in Section 10.8.

11.9.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Vegetation and Ecosystems VC, including the criteria outlined in Section 10.9.

11.9.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Vegetation and Ecosystems VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA.

11.9.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Vegetation and Ecosystems VC following the approach outlined in Section 10.11.

11.10. Wildlife and Wildlife Habitat

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Wildlife and Wildlife Habitat VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

The Wildlife and Wildlife Habitat VC includes the following valued sub-components:

- Moose;
- Mountain goat (*Oreamnos americanus*);
- Furbearers (grizzly bears [*Ursus arctos*], black bears [*Ursus americanus*], hoary marmot [*Marmota caligata*], wolverine [*Gulo gulo*], American marten [*Martes americana*]);
- Bats (including provincially and federally listed species such as *Myotis septentrionalis*);
- Amphibians (western toad [*Anaxyrus boreas*]);
- Raptors (including provincially and federally listed species such as *Buteo lagopus*);
- Migratory Birds – Upland Breeding Birds (including provincially and federally listed species); and,
- Migratory Birds – Waterbirds (including provincially and federally listed species, such as *Histrionicus histrionicus*).

11.10.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Wildlife and Wildlife Habitat VC include:

- BC *Wildlife Act;*
- *Species at Risk Act*;
- *Land Act;*

- *Migratory Birds Convention Act* and regulation;
- Government Actions Regulation under the *Forest & Range Practices Act;*
- Cassiar Iskut-Stikine Land and Resource Management Plan;
- BC Conservation Framework (ENV 2009);
- A Framework for Scientific Assessment of Potential Project Impact on Birds (Hanson et al. 2009);
- Migratory Birds Environmental Assessment Guideline (Milko 1998);
- Bird Survey Inventories in Canada (ECCC 2022a);
- Breeding Bird Atlases (Birds Canada 2020);
- COSEWIC status reports (COSEWIC 2022*);*
- ECCC's General Nesting Periods for Migratory Birds (ECCC 2022b);
- Environmental Mitigation Policy for BC (Government of BC 2014);
- BC Cumulative Effects Framework (Government of BC 2022b);
- Wetland Ways: Interim Guidelines for Wetland Protection and Conservation in British Columbia (Wetland Stewardship Partnership 2009);
- Avoiding Harm to Migratory Birds (ECCC 2022c); and,
- Relevant recovery strategies, management plans, management strategies, guidelines and action plans for migratory birds and species at risk.

11.10.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.10.3. Existing Conditions

As applicable, the Application must describe the existing conditions for each valued sub-components of the Wildlife and Wildlife Habitat VC in a manner consistent with Section 10.4 and must include the following:

- Include a current list of species expected to occur in the largest spatial boundary for the VC:
    - For each species, provide federal (COSEWIC and SARA) and provincial (BC Conservation Data Centre [BC CDC] List and Conservation Framework Rank) conservation status;
    - Identify the metrics and biotic and abiotic indicators that are used to characterize existing conditions, and discuss the rationale for their selection; and,
    - Describe and the occurrence (for example, months; seasons), distribution, location, abundance, population status, life cycle (for example, breeding and foraging), known residences, frequency and timing of occurrence, seasonal ranges, migration and movements, general habitat associations/requirements (for example, old forest; wetlands) and sensitive time periods, threats, and conservation goals of each VC sub-component;

- Describe the general life history of species at risk (e.g., breeding, foraging) that may occur in the Project area, or be affected by the Project;
- Describe any locations within the largest spatial boundaries (e.g., RAA) for the VC that might constitute sensitive habitat areas for wildlife (including residences, seasonal movements, movement corridors) and describe and/or map the extent to which these overlap with the spatial boundaries. Sensitive habitat areas may include:
    - Critical habitat and/or recovery habitat for wildlife species at risk, that is designated or under consideration, as defined in a recovery strategy, conservation plan, or similar document;
    - Areas identified through Indigenous Knowledge shared by Indigenous nations;
    - Ecological reserves and protected areas in proximity to the Project location or that could be affected by routine Project operations;
    - Ungulate Winter Ranges, Wildlife Habitat Areas, Wildlife Management Areas, Important Bird Areas (IBAs), Bird Conservation Regions (BCRs) and strategies, or established or proposed sanctuaries; or,
    - Nearby environmentally significant areas such as national parks, areas of natural or scientific interest, migratory bird sanctuaries or other priority areas or sanctuaries for birds, national wildlife areas, world biosphere reserves, offshore marine protected areas, ecologically and biologically significant marine areas, or UNESCO Natural World Heritage Sites;
- Describe the location and relative importance or significance of wildlife habitat features within the VC spatial boundaries (for example, breeding colonies, travel corridors, mineral licks, protected nests, dens, roosts);
- Describe the locations and general nature of wildlife habitat enhancement projects in the RAA;
- Describe the road access density (in km/km^2) by habitat type;
- Use existing data and literature, as well as surveys, to provide current field data that reflects the natural inter-annual and seasonal variability in habitat use. Data must be supplemented by surveys;
- The methods and information sources used to compile information on existing conditions, including any standards or guidelines followed, sampling, survey and research protocols, modelling methods, sources of uncertainty, error estimates, any assumptions or biases;
- Describe and provide any Project-specific existing conditions surveys completed, including a detailed description of the methods used and how the results helped to characterize existing conditions (for example, filled an information gap; confirmed or refuted older information);
- Survey protocols should optimize detectability and survey effort should provide for comprehensive coverage at the appropriate scale and time of year (such as, survey breeding bird habitat during breeding season, stopover habitat during migration); survey protocols should provide a rationale for the scope of and the methodology used for surveys including design, sampling protocols and data manipulation;
- Provide estimates of the abundance and distribution of provincially listed and SARA-listed in the LAA. Estimates may be based on existing information, or additional surveys, to provide current data sufficient for reliable estimates that will allow for the assessment of effects to be evaluated against provincial and federal guidance and to inform mitigation measures and/or offsetting;
- Identify the biodiversity metrics, or biotic and abiotic indicators, that are used to characterize the existing biodiversity for wildlife and discuss the rationale for their selection;

- Describe the location, distribution, condition, and amount of suitable habitat that provides the seasonal and/or annual life requisites for valued sub-components (including species at risk and migratory birds) that are likely to be directly or indirectly affected by the Project;
- Provide the habitat mapping used to describe existing conditions, which should be based on Terrestrial Ecosystem Mapping (RIC 1998, 1999) for the LAA and Predictive Ecosystem Mapping (RIC 2000) for the RAA, or other well-supported and appropriate habitat mapping methods and follow provincial standards for the scale of mapping;
- Where appropriate, provide species-specific habitat suitability modelling or ecological community modelling using vegetation resources inventory data;
- Describe the climate projections for the area with rationale of the climate model chosen and including a description of the current and projected climate impacts on wildlife and suitable habitat and/or migration patterns of each VC or sub-component species;
- Provide a list or description of wildlife and wildlife habitat management objectives as (including Tahltan objectives) defined in Land and Resource Management Plans or Sustainable Resource Management Plans;
- Describe any established conservation thresholds (for example, as defined in a recovery strategy, conservation plan, or similar document) and whether these are exceeded in existing conditions (for example, linear feature density, core security habitat, critical habitat);
- Provide any published studies that describe the regional importance (including economic), abundance and distribution of species at risk, including recovery strategies or plans;
- Describe the levels of disturbance currently affecting wildlife and wildlife habitat, such as habitat fragmentation and the extent of human access and use (outline any relevant current conditions from BC Cumulative Effects Framework reports), as well as natural disturbance regimes and their sources (e.g., fire, floods, droughts, diseases, insects and other pests, etc.);
- Reference species of Indigenous cultural use and value;
- Identify and describe any invasive species and introduced species of concern in the project's context;
- Describe and map the biodiversity of terrestrial wildlife species (amphibians, reptiles, mammals) and wildlife habitats that are found or are likely to be found in the assessment area;
- Describe available Indigenous or local knowledge related to each VC sub-component species. If applicable, describe the use of wildlife species as a source of country foods (traditional foods) and/or harvesting of fur-bearing species within the VCs spatial boundaries and whether consumption has Indigenous cultural or economic importance; and,
- Establish existing contaminant concentration conditions in key wildlife species/tissues consumed as traditional foods, in cooperation with Indigenous harvesters or others (where possible) or utilize a food chain model as part of the Human Health Risk Assessment that is able to predict wildlife traditional food tissue concentrations based on measured baseline concentrations in water, soil, and vegetation.

As applicable to migratory and non-migratory birds (e.g., raptors, upland breeding birds, water birds), including species at risk and culturally important traditional use species, the Application must:

- Describe the biodiversity of bird species and their habitats that are likely to be found in the largest spatial boundary for the VC, including identification of BCRs and BCR strategies;
- Provide estimates of the abundance and distribution, and information on the life history of migratory birds, non-migratory birds, and species at risk (provincially listed and SARA-listed) in the assessment area. Estimates may be based on existing information, or additional surveys, to provide current data sufficient for reliable estimates that will allow for the assessment of effects to be evaluated against provincial and federal guidance and to inform mitigation measures and/or offsetting;
- Provide a characterization of habitat features found in the Project area that are associated with the presence of migratory and non-migratory bird species that are likely to be affected, based on the best available existing information (such as, land cover types, vegetation, marine elements), including habitat fragmentation;
- Describe food webs and trophic linkages to summarize biotic interactions;
- Identify, and show on maps, areas of concentration of migratory birds, including sites used for migration, staging, breeding, feeding, and resting;
- Should there be anticipated displacement of nesting birds, data on existing habitat conditions should provide evidence that there is enough equivalent habitat for birds to be displaced to and that the habitat being removed is not unique to the project assessment area or region;
- For avian species at risk, locate on an appropriately scaled map:
    - Potential habitats, survey locations, records of the species, residences and critical habitat, except where locations and records are considered sensitive information;
    - Identify any and all federal Species at risk and/or Critical Habitat in the assessment area;
    - Identify any provincial Species at risk;
    - Identify any species assessed as at risk by COSEWIC;
    - Identify any sites that are likely to be sensitive locations and habitat for birds or environmentally significant areas. These include national parks, areas of natural or scientific interest, migratory bird sanctuaries or other priority areas or sanctuaries for birds, national wildlife areas or world biosphere reserves, offshore marine protected areas and ecologically and biologically significant marine areas;
    - The Project footprint, identifying temporary and permanent infrastructure; and,
    - The highest concentrations or areas of use by species;
- Describe the source of the data, data collection methods, and provide a rationale for any modelling approaches chosen. The existing conditions data must be sufficient to account for natural variability in populations (generally at least two years of field data) and have been collected by well designed studies;
- The description of bird species and their habitat in the assessment area may be based on existing sources, but supporting evidence is required that demonstrates that the data used are representative of the avifauna and habitats in the assessment area. Existing data will be supplemented by surveys to produce a representative sample

of the avifauna and habitats of the assessment area. Avian surveys should be designed based on a thorough review of the available scientific literature pertinent to the specific region, bird groups and anticipated effects;

- Provide an estimate of year-round bird use of the area (such as, winter, spring migration, breeding season, fall migration), based on data from existing sources and surveys to provide current field data if required to generate reliable estimates. In each portion of the year, survey effort must account for differences in species movements including winter usage of highly habitat reliant species and highly mobile species that will accurately characterize the use of a site; and,
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data.

11.10.4. Potential Effects

The Application must define potential direct and indirect effects to the Wildlife and Wildlife Habitat VC (including species at risk), identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

As applicable, for each valued sub-components of the Wildlife and Wildlife Habitat VC, the assessment must follow the process outlined below:

- Describe the potential direct or indirect adverse effects of the Project to wildlife species and their habitat, species at risk and, where applicable its critical habitat (including its extent, availability and presence of biophysical attributes), migratory birds and non-migratory birds, including population level effects that could be caused by all Project activities, including but not limited to: any linear access corridors (roads, transmission lines, rights-of-way), air traffic, and, where, appropriate, effects to the extent, availability and presence of biophysical attributes within critical habitat. The analysis of potential effects should be provided separately for each species at risk, COSEWIC-assessed species, migratory bird and non-migratory bird sub-component, including separate analyses for each activity, component and phase of the Project;
- Describe the key indicators used to assess project effects and the sensitivity of wildlife, species at risk, birds, and migratory birds to disturbance. Provide a rationale for their selection, including a clear connection to the indicators used to characterize existing conditions;
- Describe the area, biophysical attributes and location of habitat including critical habitat affected (e.g., destroyed, permanently altered, disrupted), including direct and indirect effects due to noise, vibration, and artificial light in the Project area on usage patterns and migratory behaviour of species at risk;
- Describe and quantify, where possible, the potential effects to wildlife health, including acute and chronic effects due to changes to air and water quality (e.g., from contaminants, effluents, atmospheric emissions, dust deposition, and bioaccumulation);
- Describe and assess the resilience and recovery capabilities of wildlife populations and habitats to disturbance, including the anticipated potential for the Project area to be returned to its existing state with respect to wildlife populations and their habitat following operations;
- Describe the potential adverse effects of the Project on species protected by provincial statutes and assessed by the COSEWIC as extirpated, endangered, threatened or of special concern (flora and fauna) and their habitat that are not currently listed SARA. Each of these species should be considered separately within the assessment of effects;

- Describe effects to wildlife biodiversity considering biodiversity metrics, effects of habitat loss and fragmentation, changes to regional biodiversity;
- Describe effects to population dynamics and wildlife-habitat relationships;
- Describe the potential adverse effects of the Project on species noted as important to Indigenous nations and local communities and their habitat that are not currently listed under the *SARA* or Provincial statutes; provide an evaluation of the effect of the Project on wildlife mortality risk and movement patterns;
- Describe changes to key habitat for species important to current use of lands and resources for traditional purposes;
- Where destruction of wildlife is expected, identify this and do not characterize it as a "risk of mortality", and differentiate between "expected mortality" and "mortality risk;"
- Not use the spatial assessment boundaries for wildlife species that have large home ranges (e.g., grizzly bears) to assess potential negative effects to wildlife species with small home ranges (e.g., amphibians), unless this can be justified;
- Describe and justify how the term "population" is defined and applied for the effect's assessments of different wildlife species;
- Describe gaps in information about populations potentially negatively affected by the Project; provide rationales why population information was not needed for effects assessments; and describe uncertainties in effects assessments because of a lack of population information;
- Identify whether populations of species with limited home ranges are present in the Project area, if there is potential for individuals of these populations to be present in large numbers, and to what extent such populations may be negatively affected;
- Identify critical timing windows (such as, denning, rutting, spawning, calving, breeding, roosting), setback distances, or other restrictions related to wildlife species;
- Identify Provincial, Territorial, or Federal permits or authorizations that may be required in relation to the species at risk;
- Describe short- and long-term changes to migratory and non-migratory bird habitat important for nesting, foraging, staging, overwintering, rearing and moulting and to movement corridors between habitat, and from habitat loss, fragmentation and structural change. Consider changes in terms of habitat type, quality, availability, distribution, and function. Any assumptions regarding temporary or permanent relocation should be justified using scientific evidence that there is available habitat within the LAA or RAA to allow relocation under a variety of population scenarios supported by monitoring within the applicable assessment areas as the project proceeds, as well as short- and long-term changes in food sources in terms of types, quality, quantity, availability, distribution and function;
- Describe the changes to the bird-habitat relationships; the change in biodiversity, abundance, and density of the avian community that utilize the various habitat types or ecosystems;
- Describe the change in mortality risk and movement patterns, including as a result of collision of migratory birds and wildlife with any Project infrastructure, vehicles, and any new road access, pipeline, transmission line or other rights-of-way, and from indirect effects, such as increased movement of predators or access to hunting;
- Describe the effects caused by increased disturbance (e.g., sound, artificial light, presence of workers, clearing), to wildlife species at risk, migratory birds and non-migratory birds, considering the critical periods including but

not limited to breeding, migration, denning and overwintering. Indicate the timing windows for activities likely to cause disturbances, and the amount, duration, frequency, and timing of disturbances, including whether or not those activities would be permanent or non-permanent in the environment;

- Describe changes in water quality frequented by birds and wildlife (including but not limited to tailings disposal facilities, wastewater ponds, wetlands and waterbodies within the RAA) due to deposition of harmful substances and contaminants of potential concern;
- Describe potential changes to contaminant levels in harvested species (e.g., from their exposure to contaminants in environmental media).
- Screen predicted concentrations of water, soil, and air quality contaminants against applicable water, soil, and air quality guidelines protective of aquatic life and/or wildlife/livestock. Contaminants that exceed guideline concentrations will be screened into a Wildlife Health Assessment and further evaluated to assess their potential effects to wildlife; and,
- Include information on the modelling methods (assumptions, calculations of margins of error), and other relevant statistical information required to understand and evaluate how the effects to wildlife are assessed.

11.10.5. Effects Management

The Application must describe effects management approaches for the Wildlife and Wildlife Habitat VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6:

- As applicable, describe all feasible measures that must be taken to avoid or lessen the impact of the Project on wildlife and wildlife habitat, including wildlife species at risk and their critical habitat, migratory and non-migratory birds and their habitat, including their eggs and nests. Provide justification for the proposed measure based on scientific data and a description of the effectiveness of each measure in avoiding negative effects;
- Identify measures to prevent and mitigate the risk of engaging in harmful, destructive or disruptive activities in key sensitive periods and locations (such as migration and nesting) to species at risk, migratory birds, their nests and eggs, in water or areas frequented by migratory birds and sensitive times and places of importance for species at risk;
- Identify measures to prevent, minimize and/or mitigate the deposition of harmful substances to migratory birds and other key wildlife species (e.g., species at risk, culturally important species) in water or areas frequented or occupied by those species;
- Describe and explain the condition in which the temporary construction areas and right-of-way will be restored or maintained following construction, and explain the mitigation measures considered including possible revegetation, obstruction of the sightline, restoration of wildlife corridors and habitat connectivity, reduction of fragmentation and reduction of long-term cumulative effects;
- Describe the deterrent systems that will be used to mitigate impacts to wildlife and species at risk due to, for instance, attraction to the project site and/or components and activities associated with the Project;
- Describe wildlife friendly road-design principles and features, which may include underpasses and wildlife bridges (as well as monitoring to estimate bat and other wildlife mortality);
- Describe measures to address sensory disturbance and the resulting functional loss of habitat;

- Provide details of any compensation or offsetting plans proposed if effects cannot be otherwise avoided or mitigated;
- Describe mitigation measures applicable to wildlife habitat and other biodiversity metrics that will be implemented through reclamation, including timelines and targets that will be used to assess effectiveness;
- Provide an account of how the Project and mitigation measures are consistent with the recovery strategy, action plan, or management plan for wildlife species; and,
- Describe all reasonable alternatives to the Project that would avoid the potential effect on species and their habitat, with particular attention to critical habitat.

11.10.6. Assessing Positive Effects

The Application must describe any positive effects to the Wildlife and Wildlife Habitat VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.10.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Wildlife and Wildlife Habitat VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.10.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Wildlife and Wildlife Habitat VC, including the criteria outlined in Section 10.9. The Application must:

- Describe the residual effects that are likely to result from the Project after avoidance and minimization measures have been applied, including the extent, duration and magnitude of the effects on:
  - The number of individuals killed, harmed, harassed; and,
  - The number of residences damaged or destroyed; and,
- Describe the area, biophysical attributes and location of habitat including critical habitat affected (e.g., destroyed, permanently altered, disrupted).

11.10.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Wildlife and Wildlife Habitat VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

11.10.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Wildlife and Wildlife Habitat VC following the approach outlined in Section 10.11.

11.11.Human Health

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Human Health VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

No valued sub-components were identified for the Human Health VC.

11.11.1. Relevant Statutes, Policies and Frameworks

The Application must describe whether worker camps/accommodation will be located within or outside of the Mine Permit Area, and how statues, regulations and policies apply and do not apply to workers when they are off-shift and in camps.

Statutes, policies and frameworks that may be relevant to the Human Health VC include:

- *Drinking Water Protection Act;*
- *Public Health Act* and regulations;
- *Canada Health Act;*
- BC Contaminated Sites Regulation under the *Environmental Management Act*;
- Guidance for Evaluating Human Health Impacts in Environmental Assessment: Human Health Risk Assessment (Health Canada 2019);
- Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air Quality (Health Canada 2016a);
- Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise (Health Canada 2017a);
- Guidance for Evaluating Human Health Impacts in Environmental Assessment: Drinking and Recreational Water Quality (Health Canada 2016b);
- Guidance for Evaluating Human Health Impacts in Environmental Assessments: Country Foods (Health Canada 2018);
- Social determinants of health and health inequalities (Public Health Agency of Canada 2020);
- Analyzing Health, Social and Economic Effects under the *Impact Assessment Act* (IAAC 2020);
- Indigenous Communities and Industrial Camps – Promoting Healthy Communities in Settings of Industrial Change (The Firelight Group 2017);
- Indigenous Mental Wellness and Major Project Development: Guidance for Impact Assessment Professionals and Indigenous Communities (The Firelight Group 2021);
- Intangible Impacts: More-than-mental health: Indigenous identity, culture, community and relationship with land are integral to Indigenous well-being (Lewis et al. 2021);
- Guidelines for Canadian Drinking Water Quality (Health Canada 2022a);
- Guidelines for Canadian Recreational Water Quality (Health Canada 2012);

- Guidelines for Canadian Recreational Water Quality: Physical, Aesthetic and Chemical Characteristics (Health Canada 2022b);
- BC Recreational Water Quality Guidelines: Guideline Summary (ENV 2019);
- First Nations Health Human Resources Tripartite Strategic Approach (First Nations Health Authority 2013);
- Federal Contaminated Site Risk Assessment in Canada, Part I: Guidance on Preliminary Quantitative Risk Assessment (Health Canada 2021d);
- Useful Information for Environmental Assessments (Health Canada 2010a);
- Federal Contaminated Site Risk Assessment in Canada: Toxicological Reference Values, Version 3 (Health Canada 2021b);
- Federal Contaminated Site Risk Assessment in Canada: Supplemental Guidance on Human Health Risk Assessment for Country Foods (Health Canada 2010b);
- Federal Contaminated Site Risk Assessment in Canada: Overview of Health Canada Guidance Documents Related to Human Health Risk Assessments of Federal Contaminated Sites (Health Canada 2021c);
- Federal Contaminated Site Risk Assessment in Canada. Guidance on Human Health Detailed Quantitative Risk Assessment, Version 3.0. (Health Canada 2021a)
- British Columbia Guidance for Prospective Human Health Risk Assessment (Ministry of Health 2022);
- Let's Talk: Populations and the Power of Language (National Collaborating Centre for Determinants of Health 2014);
- Canadian Environmental Quality Guidelines (CCME n.d.);
- Health and Medical Services Plan Best Management Guide for Industrial Camps (Northern Health 2015a);
- The social determinants of health impacts of resource extraction and development in rural and northern communities: A summary of impacts and promising practices for assessment and monitoring (Aalhus et al. 2018);
- Towards more robust and locally meaningful indicators for monitoring the social determinants of health related to resource development across Northern BC (Buse et al. 2018);
- Communicable Disease Control Plan – Best Management Guide for Industrial Camps (Northern Health 2017);
- Health and Safety During the Opioid Overdose Emergency: Northern Health's Recommendations for Industrial Camps (Northern Health 2018);
- Guidance on Human Health Risk Assessment (Northern Health 2015b);
- Emergency Roles and Responsibilities (Northern Health 2019);
- Standard Working Group Comments and Recommendations for Provincial Environmental Assessments in Northern British Columbia (Northern Health 2015c); and,
- Relevant statutes, policies and frameworks for the air quality, surface water, groundwater and noise VCs (as listed in the relevant sections).

11.11.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.11.3. Existing Conditions

As applicable, the Application must:

- Describe existing biophysical conditions for VCs or sub-components that are linked to the Human Health VC, which may include:
  - Air Quality;
  - Noise and Vibration;
  - Surface Water Quality;
  - Groundwater Quality; and,
  - Soil Quality;
- Identify country foods[10] (traditional foods), that are consumed and used, including species and parts of species (e.g., tissues), harvesting locations, relevant consumption information including consumption patterns (e.g., serving sizes, frequency of consumption, if traditional foods are consumed seasonally or year-round), and how the data were collected (e.g., site-specific consumption surveys, community-led assessments on impacts to treaty and harvesting rights). If site-specific consumption data are not provided, then provide an acceptable rationale why the surrogate consumption data provided are appropriate;
- Describe existing conditions for quality of country foods, including existing contaminant concentrations in the tissues of country foods (traditional foods) consumed by Indigenous nations and local communities. Information can be drawn from relevant VC effects assessments, such as:
  - Fish and Fish Habitat;
  - Vegetation and Ecosystems; and,
  - Wildlife and Wildlife Habitat;
- Conduct a problem formulation as part of a human health risk assessment, including development of a conceptual site model showing sources, COPCs, receptors, and exposure pathways;
- Describe the status of food security within Indigenous nations and local communities;
- Describe existing conditions for health-related behaviours (for example, substance use, diet, exercise);
- Describe existing conditions identified for VCs linked to population health (for example, Employment and Economy, Infrastructure and Services) that contribute to population health, such as:
  - Employment and income;

[10] As per BC Ministry of Health (2022) guidance, country foods are defined as all foods sourced outside of commercial food systems, also referred to as environmental livelihoods. This includes any food that is trapped, fished, hunted, harvested, or grown for subsistence or medicinal purposes outside of the commercial food chain.

  - Access to health services;
  - Cultural and resource-based activities (for example, recreational, traditional, or other land uses); and,
  - Community well-being (for example physical and sexual violence (harassment/assaults) for both the community and workforce);
- Describe available Indigenous or local knowledge related to human health, and how local, Tahltan Knowledge, and Indigenous Knowledge from relevant populations was used in establishing existing health conditions including any input from diverse subgroups;
- Describe how a social determinants of health approach has been applied, recognizing that health is more than the absence of disease but includes broad factors that support well-being;
- Describe engagement with Project-affected communities to verify the relevance of social determinants of health used in the assessment of community well-being and their links to mental and physical well-being;
- Present a prioritized list of relevant social determinants of health, related indicators, and a rationale for including or excluding certain social determinants of health;
- Disaggregate and analyze information, including the existing conditions identified for VCs linked to population health, to support the analysis of potential effects to diverse subgroups as per GBA Plus. Where available information presents a limitation on the ability to describe differential effects to diverse subgroups, articulate this limitation and describe its implications for analysis; and,
- Provided information on interested parties, those likely to be affected directly and indirectly by the Project, with a consideration of those in the community who are considered particularly vulnerable to changes brought about by the Project.

To understand the community and Indigenous context and existing health profile, the Application must:

- Describe any context-specific definitions of health and well-being, including mental health, including from the perspective of the relevant Indigenous nation cultures;
- Describe relevant community and Indigenous nation history or context, including historical effects on health;
- Relevant social determinants of health must be selected to reflect the setting and circumstances of the affected communities and must be selected from the suite of determinants commonly recommended by the Public Health Agency of Canada, including but not limited to the following:
  - Physical environments;
  - Employment and working conditions;
  - Social environments;
  - Health services;
  - Income and social status;
  - Education and literacy;
  - Gender; and,
  - Race/racism;

- Complete a community health profile that describes the overall health of the community which may include information on birth rates, death rates, sexually transmitted infections, injuries, chronic disease rates, mental health status and other community-relevant health issues, where available through secondary information sources (e.g., Public Health Agency, Statistics Canada, provincial health authorities);
- Describe and characterize the existing health services and programs, including health care provider capacity; and,
- Describe drinking water sources, both surface and/or groundwater (permanent, seasonal, periodic, or temporary), including approximate wellhead capture zones and distance from Project activities.

The Application must describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data. The Application must disaggregate the source of local knowledge by relevant identity factors, as per GBA Plus, to the extent possible.

11.11.4. Potential Effects

The Application must define potential direct and indirect effects to the Human Health VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

The Application must apply GBA Plus and document how potential effects of changes to Human Health VC conditions could be different for particular groups (such as women, youth, Indigenous persons, recent immigrants, members of visible minorities, and persons with disabilities). The Application must identify relevant intersections of sex, gender, ethnicity/race, culture, religion, income, age, sexual orientation, disability, education, geography, and language. Where gaps in available data present limitations on the possibility of understanding differential effects, the Application must specify these limitations and their possible implications to understanding of effects.

The assessment must follow the process outline below:

- Describe how Indigenous and local knowledge was used to assess human health effects;
- Illustrate linkages and effect pathways, so that when a change in one domain is predicted, there is an understanding of what other effects or consequences may be felt across the other domains;
- Describe interconnections between the Human Health VC and other VCs and interactions between effects;
- Provide an assessment of adverse and positive effects on the Human Health VC (i.e., health conditions) based on potential changes to environmental, social, cultural, and economic conditions, such as those covered in other parts of Section 11.0, including but not limited to:
    - Air quality;
    - Noise exposure and effects of vibration;
    - Current and future availability (including perceived and actual contamination/quality) of and access to country foods (traditional foods);
    - Evaluate information related to fish and game, plant tissue and produce harvested as a source of exposure and potential impacts to Indigenous nations health using human health risk assessment methods; and,
    - Current and future availability (including perceived and actual contamination/quality) of and access to water for drinking, recreational and cultural uses;

- At minimum, conduct a screening level Human Health Risk Assessment. This assessment must examine all exposure pathways for COPCs to adequately characterize potential biophysical risks to human health. A multimedia Human Health Risk Assessment may need to be considered and conducted for any COPC with operable exposure pathways, including exposure to multiple pathways. The Human Health Risk Assessment should evaluate potential health effects related to secondary exposure through the deposition of air contaminants into soil or plants and consider secondary sources through country foods and food chain effects when air contaminant uptake into plants occurs from foliar deposition or uptake from soil. Clear methodology must be provided for the selection of COPC and the determination of background and regional conditions;
- As part of the problem formulation in the Human Health Risk Assessment, if a determination is made to exclude a COPC or an exposure pathway from the assessment, an acceptable and scientifically defensible rationale must be provided to support determination;
- Describe and characterize either quantitatively or qualitatively potential effects to mental and social well-being (such as, depression, anxiety, sense of safety, or other forms of stressful experience) arising from the perception of COPC exposure;
- Identify human receptors (including off-duty workers) that may be potentially affected by Project-related activities. Describe and characterize either quantitatively or qualitatively (where appropriate) the Project-related activities, COPCs, nuisances and environmental, social, cultural and economic changes that could potentially cause adverse health effects to the identified human receptors;
- Assess Project impacts on receptors not only for current land uses, but also for known planned future land uses;
- Describe and quantify specific thresholds and document if different thresholds were considered for vulnerable populations, including by sex and age; provide rationale and justification if specific thresholds are not used;
- Identify predicted effects of the Project on the quality and quantity of ground or surface water used for domestic uses, including interactions with Indigenous groundwater use and Indigenous values associated with groundwater;
- In situations where Project-related air, water or noise emissions meet local, provincial, territorial or federal guidelines, and yet public concerns were raised regarding human health effects, provide a description of the public concerns and how they were or are to be addressed;
- Document potential effects on access to health services, including increased use of health and related health-social services in relevant communities;
- For food security: describe effects to use and consumption of country foods (traditional foods) and health impacts of this effect; and,
- Describe any positive health effects (such as, resulting from improved economic opportunities, increased access to services).

11.11.5. Effects Management

The Application must describe effects management approaches for the Human Health VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6.

11.11.6. Assessing Positive Effects

The Application must describe any positive effects to the Human Health VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.11.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Human Health VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.11.8. Characterization of Residual Effects

The Application must provide a characterization of negative residual effects of the Project to the Human Health VC, including the criteria outlined in Section 10.9.

11.11.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Human Health VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA. Incorporate GBA Plus analysis, considering and describing effects across diverse subgroups. Where available information presents a limitation on the ability to describe differential effects to diverse subgroups, articulate this limitation and describe its implications for analysis. If effects outside Canada are anticipated, however small, the Application must describe those effects in a stand-alone section.

11.11.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Human Health VC following the approach outlined in Section 10.11. Monitoring and evaluation approaches must be informed by the GBA Plus analysis.

11.12. Infrastructure and Services

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Infrastructure and Services VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

No valued sub-components were identified for the Infrastructure and Services VC.

11.12.1. Relevant Statutes, Policies and Frameworks

Statutes, policies, and frameworks that may be relevant to the Infrastructure and Services VC include:

- *Transportation Act;*
- *Local Government Act;*

- *Canada Health Act;*
- *Public Health Act;*
- *Fire Services Act;*
- *School Act;*
- *Teachers Act;*
- *First Nations Education Act;*
- *Community Care and Assisted Living Act;*
- *Emergency Health Services Act;*
- *Police Act*;
- Official community plans and charters;
- Regional growth strategies;
- Municipal and regional district bylaws;
- Service provider management/development plans and strategies;
- Health and Medical Services Plan Best Management Guide for Industrial Camps (Northern Health 2015a);
- Communicable Disease Control Plan – Best Management Guide for Industrial Camps (Northern Health 2017);
- Traffic Management Manual for Work on Roadways (MOTI 2020);
- Resources from the First Nations Information Governance Centre; and,
- Let's Talk: Populations and the Power of Language (National Collaborating Centre for Determinants of Health 2014).

11.12.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.12.3. Existing Conditions

As applicable, the Application must:

- Describe relevant population demographics and trends (for example, birth rates, death rates, health status, community safety and crime, education and training);
- Describe the capacity and availability of the following:
    - Health care and social services and facilities (including which communities draw upon them);
    - Emergency response services;
    - Domestic water supply;
    - Sewage and water treatment facilities;
    - Solid waste collection services, landfills and recycling facilities;

  - Community recreational infrastructure, facilities and services;
  - Educational services and facilities including day care; and,
  - Any other relevant public or private sector infrastructure and services;
- Describe the capacity of local and regional transportation infrastructure; including marine infrastructure;
- Describe the capacity of housing and accommodation;
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data; and,
- Describe available Indigenous or local knowledge related to infrastructure and services.

As applicable, information must be sufficiently disaggregated and analyzed to support the analysis of potential effects to diverse subgroups as per GBA Plus. Where available information presents a limitation on the ability to describe differential effects to diverse subgroups, this limitation must be articulated, and its implications for analysis described.

11.12.4. Potential Effects

The Application must define potential direct and indirect effects to the Infrastructure and Services VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

The Application must apply GBA Plus and document how potential effects of changes to the Infrastructure and Services VC could be different for particular groups (such as women, youth, Indigenous persons, recent immigrants, members of visible minorities, and persons with disabilities). The Application must identify relevant intersections of sex, gender, ethnicity/race, culture, religion, income, age, sexual orientation, disability, education, geography, and language. Where gaps in available data present limitations on the possibility of understanding differential effects, the Application must specify these limitations and their possible implications to understanding of effects.

The assessment must follow the process outlined below:

- Describe the predicted effects to the local and regional infrastructure facilities and services in the assessment area, including adverse and positive effects to:
  - Accommodation/lodging (such as, affordability, availability, appropriateness), including camping facilities;
  - Recreation and parks;
  - Waste disposal;
  - Marine shipping;
  - Road infrastructure and traffic safety, including but not limited to physical effects to and use of Forest Service and other Resource Roads in Project areas;
  - Police and firefighting;
  - Educational services, facilities and day care;
  - Ambulance and health care services; and,
  - Utilities; and,

- Describe any need for government and/or proponent expenditures for new or expanded services, facilities or infrastructure, arising out of Project-related effects.

11.12.5. Effects Management

The Application must describe effects management approaches for the Infrastructure and Services VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6.

11.12.6. Assessing Positive Effects

The Application must describe any positive effects to the Infrastructure and Services VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.12.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Infrastructure and Services VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.12.8. Characterization of Residual Effects

The Application must provide a characterization of negative residual effects of the Project to the Infrastructure and Services VC, including the criteria outlined in Section 10.9.

11.12.9. Cumulative Effects

The Application must include an assessment of cumulative effects on infrastructure and services following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA. Incorporate GBA Plus analysis, considering and describing effects across diverse subgroups.

11.12.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Infrastructure and Services VC following the approach outlined in Section 10.11. Monitoring and evaluation approaches must be informed by the GBA Plus analysis.

11.13. Non-Traditional Land and Resource Use

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs Non-traditional Land and Resource Use is linked to and describe how the results of the assessment must be integrated into those of other VCs.

The Non-traditional Land and Resource Use VC includes the following valued sub-components:

- Tenured Land and Resource Use;

- Public Land and Resource Use;
- Parks and Protected Areas;
- Private Property; and,
- Visual Resources.

11.13.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Non-traditional Land and Resource Use VC include:

- *Agricultural Land Commission Act;*
- *Forest Act;*
- *Forest and Range Practices Act;*
- *Water Sustainability Act;*
- *Land Act;*
- *Mineral Tenure Act;*
- *Mines Act;*
- *Environmental Management Act;*
- *Parks Act;*
- *Wildlife Act;*
- *Fisheries Act;*
- *Local Government Act;*
- Crown land policies;
- Land use plans (including Indigenous nation plans);
- Official community plans;
- Regional growth strategies;
- BC Visual Impact Assessment Handbook (Government of BC 2022d);
- BC hunting and trapping regulations (as applicable);
- BC fish and wildlife program regulations (as applicable);
- Municipal and regional district bylaws;
- Resources from the First Nations Information Governance Centre; and,
- Let's Talk: Populations and the Power of Language (National Collaborating Centre for Determinants of Health 2014).

11.13.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.13.3. Existing Conditions

As applicable, the Application must:

- Describe any regional Land and Resource Management Plans and official community plans, as well as associated zoning or land use policies;
- Identify sub-groups within the assessment area and their vulnerability to land and resource use effects (for example, Indigenous people, farmers);
- Describe current use of land in the assessment area, including:
    - Private property and residential areas;
    - Industrial land uses (for example, mining, oil and gas);
    - Other tenured, permitted or licensed land uses, as appropriate (for example, trapping, guiding);
    - Non-traditional consumptive land uses (for example, hunting, fishing, trapping, vegetation gathering);
    - Outdoor recreation areas (for example, camping, hiking, skiing, boating, caving);
    - Agricultural land uses;
    - Tourism;
    - Parks and protected areas;
    - Institutional use; and,
    - Other;
- Describe current conditions with respect to air quality, surface water quality and its implications for recreational use, noise, vibration, odour or night-time light nuisance for occupants or resource users;
- Describe the local and regional climate projections for the area with rationale of the climate model chosen and including a description of the current and projected climate effects on land and resource use;
- Describe the visual landscape and ambient nighttime light conditions from key use areas; and,
- Describe available Indigenous or local knowledge related to land and resource use.

The Application must describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data. Information must be sufficiently disaggregated and analyzed to support the analysis of potential effects to diverse subgroups, including GBA Plus. Where available information presents a limitation on the ability to describe differential effects to diverse subgroups, this limitation must be articulated, and its implications for analysis described.

11.13.4. Potential Effects

The Application must define potential direct and indirect effects to Non-traditional Land and Resource Use VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

The Application must apply GBA Plus and document how potential effects of changes to Non-Traditional Land and Resource Use could be different for particular groups (such as women, youth, Indigenous persons, recent immigrants, members of visible minorities, and persons with disabilities). The Application must identify relevant intersections of sex, gender, ethnicity/race, culture, religion, income, age, sexual orientation, disability, education, geography, and language. Where gaps in available data present limitations on the possibility of understanding differential effects, the Application must specify these limitations and their possible implications to understanding of effects.

The assessment must follow the process outlined below:

- Describe the potential Project interactions with local and regional land use and resource activities, including adverse and positive effects to:
  - Access to land and resources;
  - Transportation and utilities corridors;
  - Residential land use;
  - Forestry and logging operations;
  - Commercial outfitters;
  - Quality and quantity of ground or surface water used for commercial uses;
  - Agriculture, including predicted effects to livestock health and productivity; and,
  - Other land uses;
- Describe predicted effects to recreation (such as, hunting, boating, fishing, kayak lessons, hiking, biking, dog walking, wildlife viewing, aesthetic enjoyment) by the community and Indigenous nations, including effects to:
  - Access to land and resources;
  - Quantity and quality of the resources; and,
  - Overall experience when undertaking recreational activities, including noise effects;
- Identify predicted visual effects of the Project on the existing landscape in the assessment area, including effects of artificial lighting; and,
- Identify predicted effects of the Project on the quality and quantity of ground or surface water and implications for recreational uses.

11.13.5. Effects Management

The Application must describe effects management approaches for the Non-traditional Land and Resource Use VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate following information requirements described in Section 10.6.

11.13.6. Assessing Positive Effects

The Application must describe any positive effects to the Non-traditional Land and Resource Use VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.13.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Non-traditional Land and Resource use VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.13.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Non-traditional Land and Resource Use VC, including the criteria outlined in Section 10.9.

11.13.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Non-traditional Land and Resource Use following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA. Incorporate GBA Plus analysis, considering and describing effects across diverse subgroups.

11.13.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Non-traditional Land and Resource Use VC following the approach outlined in Section 10.11. Monitoring and evaluation approaches must be informed by the GBA Plus analysis.

11.14. Employment and Economy

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Employment and Economy VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

No valued sub-components were identified for the Employment and Economy VC.

11.14.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Employment and Economy VC include national, provincial, regional and/or local economic development plans, strategies and action plans.

Relevant statutes, policies, and frameworks include:

- *Coasting Trade Act*;
- *Labour Mobility Act*;
- *Trade, Investment and Labour Mobility Agreement Implementation Act;*
- *New West Partnership Trade Agreement Implementation Act;*
- *Industry Training Authority Act;*
- *Community Charter;*

- *Local Government Grants Act;*
- *Local Government Act;*
- Agreement on Internal Trade (Government of Canada 2015);
- Resources from the First Nations Information Governance Centre;
- Let's Talk: Populations and the Power of Language (National Collaborating Centre for Determinants of Health 2014);
- Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All (ILO 2015); and,
- Regional growth strategies.

11.14.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.14.3. Existing Conditions

As applicable, the Application must:

- Describe the demographic features of the local and regional population, including educational levels as well as any prevalent economic concerns and economic aspirations of residents, families, and workers in the assessment areas;
- Describe trends in labour force and employment statistics for residents in the LAA and RAA, including the availability of skilled and unskilled workers, existing demographic composition of workers, existing working conditions, existing employment and unemployment rates, economic well-being (e.g., average income and wage inequality) and information on gendered expectations and roles, full-time and part-time employment, and training;
- Describe wage and income information, including average salary range and wage inequality;
- Describe trends in general skills and training for residents in the LAA and RAA;
- Describe the economic significance of current use of land and water bodies in the assessment area, such as hunting, recreational and commercial fishing, trapping, outdoor recreation, use of seasonal cabins, outfitters, agriculture, forestry and institutional;
- Describe the local and regional economy, including the main economic activities in the LAA and RAA;
- Provide an overview of the economic well-being in the assessment areas and impacted communities;
- Characterize the economic conditions to support the assessment of Project-related effects, including the differences of experiences by diverse groups, such as women, youth, Indigenous persons, recent immigrants, members of visible minorities, and persons with disabilities;
- As applicable, information must be sufficiently disaggregated and analyzed to support the analysis of potential effects to diverse subgroups, as per GBA Plus. Where the available information presents a limitation on the ability to describe differential effects to diverse subgroups, this limitation must be articulated, and its implications for analysis described;
- Describe tax revenues and government expenditures;

- Discuss trends and factors influencing cost of living (for example, housing, food, goods and services);
- Describe and quantify, where possible, land and resource valuations;
- Describe available Indigenous or local knowledge related to Employment and Economy;
- Describe businesses or industry relevant to the Project in the LAA and RAA, including availability of businesses that may provide supplies and services required for the Project; and,
- Describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data.

11.14.4. Potential Effects

The Application must define potential direct and indirect effects to employment and the economy, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

The Application must apply GBA Plus and document how potential effects of changes to employment and economic conditions could be different for particular groups (such as women, youth, Indigenous persons, recent immigrants, members of visible minorities, and persons with disabilities). The Application must identify relevant intersections of sex, gender, ethnicity/race, culture, religion, income, age, sexual orientation, disability, education, geography, and language. Where gaps in available data present limitations on the possibility of understanding differential effects, the Application must specify these limitations and their possible implications to understanding of effects.

The Application must describe potential positive and adverse effects to the local, Indigenous, regional, provincial, and national employment and economies, including whether and how local benefits can be maximized. The assessment must also provide an estimate of the anticipated levels of local, regional, provincial, and national economic participation in the Project in comparison to the total Project requirements (such as, number of workers and total VC of local, regional, provincial, and national contracts). The Application must also:

- Provide the information in the context of existing employment rates and economic well-being in the community;
- Include a discussion of skilled versus non-skilled labour requirements of the Project, distinguishing between contract and permanent employment, including availability and capacity of local workforce and potential for worker shortages in certain sectors within the community;
- If applicable, describe plans and rationale for hiring short-term workers to address labour and skill shortages;
- Compare average anticipated Project wages, if available through Project planning, to provincial and national averages for persons in mining occupations;
- Describe plans to encourage local employment, procurement and contracting opportunities and discuss the potential ability of local businesses to compete for Project-related contracting;
- Describe any training or education programs or scholarships the proponent is supporting to enhance employment opportunities for local residents;
- Provide the sources and methodologies used for developing multipliers and estimates (where a generic multiplier may not accurately reflect the specific situation of the Project being assessed, evidence must be provided of specific economic activity that must result from the Project going ahead);

- A description of potential effects of changes to economic conditions in affected communities including, but not limited to:
  - Forestry and logging operations;
  - Commercial recreational and sport fishing, hunting and trapping;
  - Commercial outfitters;
  - Commercial recreation and tourism; and,
  - Agriculture, including predicted effects to livestock health and productivity;
- An estimate of direct, indirect, and induced economic impact of the Project including income and/or wages, and the distribution of that income and/or wages, resulting from Project expenditures during construction operation, and closure (including consideration of temporary closures and boom/bust cycles);
- An estimate of impacts on local, regional, provincial, territorial, federal government and Indigenous nation revenues from tax levies, royalties, revenue sharing and other means during construction and operation, including a quantitative assessment of these impacts;
- A discussion of how the Project would impact gross domestic product at the national and provincial/territorial levels;
- Describe the methodologies and assumptions used to estimate the economic benefits of the Project including:
  - Forecasts of relevant commodity prices used, where these were acquired and, if available, how they were forecasted;
  - Relevant sources of uncertainty in the estimate; and,
  - Sensitivity analysis of how changes in global competitiveness of the project, commodity prices, capital and operating costs or other relevant sources of uncertainty may affect the estimated economic benefits;
- Describe any environmental, social, and governance risks to project economics;
- Describe any financial liability and compensation in place, as required by regulation or by the proponent's commitments, in relation to decommissioning or abandonment;
- An estimate of potential effects of the Project on the traditional economy, including the potential loss of traditional economies and jobs;
- An analysis of potential changes to property values; and,
- An analysis of potential changes to the cost of living as a result of the Project.

11.14.5. Effects Management

The Application must describe effects management approaches for the Employment and Economy VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6.

11.14.6. Assessing Positive Effects

The Application must describe any positive effects to the Employment and Economy VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

The Application must describe the proponent's engagement with the Indigenous Skills and Employment Training Program service delivery network with the objective of empowering the local Indigenous entrepreneurs to continue to participate in a self-sustaining economic ecosystem.

11.14.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Employment and Economy VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.14.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Employment and Economy VC, including the criteria outlined in Section 10.9.

11.14.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Employment and Economy VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA. Incorporate GBA Plus analysis, considering and describing effects across diverse subgroups.

11.14.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to Employment and Economy VC following the approach outlined in Section 10.11. Monitoring and evaluation approaches must be informed by the GBA Plus analysis.

11.15. Heritage Resources

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Heritage Resources VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

The Heritage Resources VC includes the following valued sub-components:

- Archaeological Sites;
- Paleontological Sites; and,
- Historical/Traditional Use Sites.

11.15.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Heritage Resources VC include:

- *Heritage Conservation Act;*
- Fossil Management Framework (FOR 2017);
- Fossil Management Policy including fossil impact assessment guidelines (FOR 2022);
- Technical Guidance for Assessing Physical and Cultural Heritage or any Structure, Site or Thing (Government of Canada 2015b);
- Technical Guidance for Assessing the Current Use of Lands and Resources for Traditional Purposes under the *Canadian Environmental Assessment Act, 2012* (IAAC 2015);
- Tahltan Archaeological Standards (THREAT 2011); and,
- Applicable Indigenous heritage policies.

11.15.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.15.3. Existing Conditions

As applicable, the Application must:

- Describe and provide archaeological studies completed in the LAA and RAA and any sites found within the Project footprint;
- Describe the archaeological potential in the Project area;
- Describe any heritage or historical sites identified in the Project area;
- Describe the paleontological potential in the Project area;
- Describe available Indigenous or local knowledge related to archaeological and heritage resources; and,
- Describe the natural and cultural heritage, and provide maps (optional) for buildings, sites and things of historical, archaeological, paleontological, or architectural significance in the assessment areas. Natural and cultural heritage, as well as structures, sites or things or importance to communities, includes land, natural features, and resources considered to be heritage, or a structure, site or thing that is distinguished by archaeological, paleontological, cultural, spiritual, historical, or architectural significance.

Indigenous representatives and/or Indigenous Knowledge Holders from the affected Indigenous groups will be invited to identify any as-yet unknown cultural or spiritual resources that may be impacted by the Project. Sites that are identified as confidential will be depicted only with the appropriate flagged boundaries.

The physical and cultural heritage as well as any structure, site or thing that is of historical, archaeological, paleontological or architectural significance for each Indigenous nation is described in Sections 4 through 8.

The Application must describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data.

11.15.4. Potential Effects

The Application must define potential direct and indirect effects to the Heritage Resources VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

The assessment must assess potential effects to changes to structures, sites or things of historical, archaeological, paleontological or architectural significance and associated effects on other social and economic conditions.

11.15.5. Effects Management

The Application must describe effects management approaches for the Heritage Resources VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6.

11.15.6. Assessing Positive Effects

The Application must describe any positive effects to the Heritage Resources VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.15.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the Heritage Resources VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.15.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Heritage Resources VC, including the criteria outlined in Section 10.9.

11.15.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Heritage Resources VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA.

11.15.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Heritage Resources VC following the approach outlined in Section 10.11.

11.16. Current and Future Use of Land and Resources for Traditional Purposes

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Current and Future Use of Land and Resources for Traditional Purposes (CFULRTP) VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

11.16.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the CFULRTP VC include Indigenous and non-Indigenous community and land use plans that overlap the Project site. Where plans are presented specific to one Indigenous nation, they must be included in the sections specific to that Indigenous nation.

11.16.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps specific to Indigenous groups, in a manner consistent with Section 10.3.

11.16.3. Existing Conditions

As applicable, the Application must describe available traditional ecological or community knowledge related to use of land and resources for traditional purposes in the Project area.

Information must be sufficiently disaggregated and analyzed to support the analysis of potential effects to diverse subgroups including GBA Plus. Where available information presents a limitation on the ability to describe differential effects to diverse subgroups, this limitation must be articulated, and its implications for analysis described.

11.16.4. Potential Effects

The Application must define potential direct and indirect effects to the CFULRTP VC (e.g., changes in access to lands and resources, sensory disturbances, quantity and quality of resources, and maintenance of preferred methods and timing of land and resource use), identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

The Application must apply GBA Plus and document how potential effects of changes to the CFULRTP VC could be different for diverse subgroups, such as women, youth, Indigenous persons, recent immigrants, members of visible minorities, and persons with disabilities.

Where gaps in available data present limitations on the possibility of understanding differential effects, the Application must specify these limitations and their possible implications to understanding of effects.

11.16.5. Effects Management

The Application must describe effects management approaches for the CFULRTP VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6.

11.16.6. Assessing Positive Effects

The Application must describe any positive effects to the CFULRTP VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.16.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the CFULRTP VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.16.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the CFULRTP VC, including the criteria outlined in Section 10.9.

11.16.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the CFULRTP VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA.

11.16.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the CFULRTP VC following the approach outlined in Section 10.11. Monitoring and evaluation approaches must be informed by the GBA Plus analysis.

11.17.Quiet Enjoyment of Land

This section of the Application must include the following headings and information. The approach must generally follow the methods outlined in Section 10.0, and any VC-specific deviations must be described.

The Application must identify which other VCs the Quiet Enjoyment of Land VC is linked to and describe how the results of the assessment must be integrated into those of other VCs.

11.17.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the Quiet Enjoyment of Land VC include Indigenous and non-Indigenous community and land use plans that overlap the Project site. Where plans are presented specific to one Indigenous nation, they must be included in the sections specific to that Indigenous nation.

11.17.2. Assessment Boundaries

The Application must identify the spatial, temporal, administrative and technical boundaries, as applicable to the VC, including maps, in a manner consistent with Section 10.3.

11.17.3. Existing Conditions

As applicable, the Application must:

- Describe current Quiet Enjoyment of Land;
- Describe language and intergenerational knowledge transfer; and,
- Describe available Indigenous or local knowledge related to Quiet Enjoyment of Land.

The Application must describe how local, Tahltan Knowledge, and Indigenous Knowledge was used to collect existing conditions data.

Information must be sufficiently disaggregated and analyzed to support the analysis of potential effects to diverse subgroups including GBA Plus. Where available information presents a limitation on the ability to describe differential effects to diverse subgroups, this limitation must be articulated, and its implications for analysis described.

11.17.4. Potential Effects

The Application must define potential direct and indirect effects to the Quiet Enjoyment of Land VC, identify interactions between the Project and these effects, and outline indicators that must be used to measure these effects.

The Application must apply GBA Plus and document how potential effects of changes to the Quiet Enjoyment of Land VC could be different for particular groups (such as women, youth, Indigenous persons, recent immigrants, members of visible minorities, and persons with disabilities).

Where gaps in available data present limitations on the possibility of understanding differential effects, the Application must specify these limitations and their possible implications to understanding of effects.

11.17.5. Effects Management

The Application must describe effects management approaches for the Quiet Enjoyment of Land VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate, following information requirements described in Section 10.6.

11.17.6. Assessing Positive Effects

The Application must describe any positive effects to the Quiet Enjoyment of Land VC that are anticipated as a result of the Project and its associated effects management approaches, following information requirements described in Section 10.7.

11.17.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to the culture VC that are anticipated as a result of the Project and present the results of this assessment, after taking mitigation into account, following information requirements described in Section 10.8.

11.17.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the Project to the Quiet Enjoyment of Land VC, including the criteria outlined in Section 10.9.

11.17.9. Cumulative Effects

The Application must include an assessment of cumulative effects on the Quiet Enjoyment of Land VC following the methods outlined in Section 10.10 and identify any additional mitigation measures. The Application must describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the CEA.

11.17.10. Follow-up Strategy

The Application must describe proposed monitoring and follow-up programs applicable to the Quiet Enjoyment of Land VC following the approach outlined in Section 10.11. Monitoring and evaluation approaches must be informed by GBA Plus.

12.0 Climate Change and Greenhouse Gas Emissions

The Application must provide information on existing and future conditions of the meteorological environment; GHG emissions; impact of the Project on carbon sinks; impact of the Project on Provincial and Federal emissions reduction efforts and on Global GHG emissions; mitigation measures; and climate change resilience, following guidelines outlined in the Strategic Assessment of Climate Change (SACC; ECCC 2020). The guidelines include two draft Technical Guides Related to the Strategic Assessment of Climate Change: 1) the Guidance on quantification of net GHG emissions, impact on carbon sinks, mitigation measures, net-zero plan and upstream GHG assessment (ECCC 2021; herein referred to as the Technical Guide), and 2) Assessing climate change resilience (ECCC 2022).

The Application must use available ECCC technical guidance in providing the information required in this section.

For meteorological environment, the Application must:

- Describe the local and regional climate including historical records of relevant meteorological information (such as, total precipitation [rain and snow]);
- Provide mean, maximum, and minimum temperatures;
- Provide typical wind speed and direction, including a seasonal breakdown;
- Identify the potential for extreme weather events such as, wind, precipitation, and temperature extremes;
- Provide pan evaporation measurements or estimates of monthly (or daily) evapotranspiration; and,
- Describe the local and regional climate projections for the area with the rationale of the climate model chosen.

12.1. Effects on Climate Change

As per the SACC Section 5.1.1 (GHG Emissions), the Application must provide:

- A description of each of the Project's main source(s) of GHG emissions and their estimated annual GHG emissions by GHG type over the lifetime of the Project;
- An updated estimate of the annual GHG emissions by Project phase as identified during Early Engagement;
- Net GHG emissions by year for each phase of the Project based on the Project's maximum production capacity (refer to Section 3.1.1 of the SACC and 2.1 of the Technical Guide);
- Each term of Equation 1 (Net GHG emissions = Direct GHG emissions + Acquired energy GHG emissions – Avoided domestic GHG emissions – Offset measures), per year for each phase of the Project (refer to Section 3.1.1 of the SACC and Section 2.1 of the Technical Guide);
- When applicable, emissions intensity (Equation 2 in the SACC/Equation 4 in the Technical Guide) for each year of the operation phase of the Project (refer to Section 3.1.2 of the SACC and Section 2.1.5 of the Technical Guide);
- When applicable, the quantity and a description of the "units produced" per Equation 2 of the SACC/Equation 4 of the Technical Guide for each year of the operation phase of the Project (refer to Section 3.1.2 of the SACC and Section 2.1.5 of the Technical Guide);
- Methodology, data, emission factors, and assumptions used to quantify each element of the net GHG emissions (refer to Section 3.1 of the SACC and Section 2.1 of the Technical Guide);

- A discussion on the development of emissions estimates and uncertainty assessment (refer to Section 3.3 of the SACC), including the source and level of uncertainty or a range of values or different possible emissions scenarios; and,
- A description of large sources of GHG emissions that may be the consequence of malfunctions or accidents.

12.2. Impact of the Project on Carbon Sinks

The Application must provide a quantitative and qualitative description of the Project's positive or negative impact on carbon sinks, because the Project may improve or reduce the ability of an ecosystem, land area, or ocean to absorb carbon dioxide from the atmosphere. An impact on a carbon sink implies the interruption or alteration of a natural continual process that removes carbon from the atmosphere.

This information must include:

- Description of Project activities in relation to significant landscape features such as topography, hydrology and regionally dominant ecosystems;
- Land areas directly impacted by the Project, by ecosystem type (forests, cropland, grassland, wetlands, built-up land) over the course of the Project lifetime; this includes the areas of restored or reclaimed ecosystem(s);
- Initial carbon stocks in living biomass, dead biomass and soils (by ecosystem type) on land directly impacted by the Project over the course of the Project lifetime;
- Fate of carbon stocks on directly impacted land, by ecosystem type: immediate emissions, delayed emissions (timeframe), storage (such as, in wood products); and,
- Anticipated land cover on the impacted land areas after the Project is in place.

Additional guidance on the methodology to estimate losses or gains to carbon sinks is provided in Section 4 of the Technical Guide. The Application must also provide any mitigation measures planned to restore disturbed carbon sinks as described under Section 3.4.3 of the Technical Guide.

12.3. Impact of the Project on Emissions Reduction Efforts and on Global Greenhouse Gas Emissions

With regard to emissions reduction efforts and on global GHG emissions, the Application must provide:

- An explanation of how the Project may contribute to Canada's efforts to reduce GHG emissions, if applicable (e.g., how the Project would result in emissions reductions in Canada by replacing higher emitting activities; refer to Section 5.1.3 of the SACC);
- A discussion on how a Project could impact global GHG emissions, if applicable (refer to Section 5.1.3 of the SACC). This could include, for example:
    - If there is a risk of carbon leakage if the Project is not built in Canada, the Application could include an explanation of the likelihood and possible magnitude of carbon leakage if the Project is not approved;
    - If the Project may displace emissions internationally, the Application could describe how the Project is likely to result in global emission reductions. For example, a project that enables the displacement of

high-emitting energy abroad with lower emitting energy produced in Canada could be considered as having a positive impact; and,

- Should the potential exist for the Project to result in increased forest fires in the region, a description of the impact of increased forest fires on climate change;

- Describe the potential effects of the Project on the province being able to meet its targets under the *Greenhouse Gas Reduction Targets Act*, now the *Climate Change Accountability Act*; and,
- Describe other relevant emissions targets, including those of a Local, Federal, or Indigenous nation government and how the Project would affect those targets.

12.4. Greenhouse Gas Mitigation Measures

The Application must describe the mitigation measures to be taken to reduce greenhouse gas (GHG) emissions throughout all phases of the Project following the Best Available Technologies (BAT)/Best Environmental Practices (BEP) Determination requirements (refer to Section 12.4.1). These could include:

- A description of the selected low-emitting technologies, the use of low carbon or renewable fuel, electrification or carbon capture and storage; and,
- A description of practices that must be taken to mitigate the Project's GHG emissions, such as anti-idling practices for mobile equipment, leak detection and repair systems, or continuous monitoring systems.

The Application must include:

- A description of any additional mitigation measures (such as, direct air capture technology and afforestation) that must be taken to mitigate remaining GHG emissions, if applicable;
- A description of any offset credits that have been or must be obtained to mitigate remaining GHG emissions, if applicable. The proponent may also provide information on their intent to acquire or generate international offset credits, which must comply with the criteria in Section 3.1.1 of the SACC. Offset credits must be considered as the last option in terms of GHG mitigation measures;
- Information on any offset credits that have been or must be obtained, including the offset regime that issued the credits, Project type, Project start date and vintage year;
- A description of measures taken to mitigate the Project's impact on carbon sinks, including measures to restore disturbed carbon sinks, if applicable;
- Subject to the public availability of information, a comparison of the Project's projected GHG emission intensity to the emission intensity of similar high-performing, energy-efficient Project types in Canada and internationally. If applicable, the comparison must explain why the emission intensity of the Project is different; and,
- A list of the Federal or Provincial GHG legislation, policies, or regulations that must apply to the Project.

If the Project has a lifetime[11] beyond 2050, the Application must include a credible plan that describes the mitigation measures that must be taken to minimize GHG emissions throughout all phases of the Project and achieve net-zero by

[11] Per the Technical Guide, *lifetime* includes the construction, operation and decommissioning phases of the Project. *Decommissioning* is understood to mean means the phase of the Project during which the proponent permanently ceases commercial production and commences removal from service of any components of the Project, and that continues until the Proponent completes the reclamation of the Project site.

2050 (refer to Section 5.1.4 and 5.3 of the SAAC). The plan must demonstrate how the net GHG emission equation (refer to Equation 1 in the SAAC and Technical Guide) will equal 0 kt CO_2e/year by 2050 and thereafter for the remainder of the lifetime of the Project. Emphasis should be placed on minimizing net GHG emissions as early as possible and throughout the Project lifespan. The credible plan must include the following information:

- A BAT/BEP Determination, as described in Section 3.2. of the Technical Guide. This BAT/BEP Determination process will assess potential mitigation measures throughout all phases of the Project and put the emphasis on minimizing net GHG emissions as early as possible and throughout the Project lifetime, as described in Section 5.1.4 of the SACC. Additional guidance is provided in Sections 3.4.1 and 3.4.2 of the Technical Guide. The result of this determination must include:
    - The list of all potential GHG mitigation measures that were considered in the BAT/BEP determination process;
    - The list of potential GHG mitigation measures selected at the end of the process that are considered for implementation in all phases of the Project (BAT/BEP and emerging technologies), including the following information:
        - The potential percentage reduction in GHG emissions associated with each measure;
        - The level of technology maturity (when the technology could be implemented); and,
        - The barriers to implementing the selected mitigation measures;
    - A rationale for eliminating each technology or practice that has not been selected for implementation; and,
    - Subject to the public availability of information, a comparison of the Project's projected GHG emissions intensity to similar high-performing, energy-efficient projects in Canada and internationally. The comparison should explain why the emissions intensity may be different;
- A description of any additional mitigation measures (i.e., offset measures) that will be implemented for the Project to achieve net-zero emissions by 2050, if applicable. The additional mitigation measures can include:
    - Implementation of CO_2 capture and storage technologies;
    - Description of the proponents' corporate-level GHG commitments and/or net-zero plan and an explanation on how it aligns with the Project's credible net-zero plan, if relevant; and,
    - Acquisition of offset credits;
- The implementation schedule describing when the mitigation measures will be implemented, considering equipment replacement. The implementation schedule does not need to describe every technology or practice the Project will implement over time to achieve net-zero emissions. The plan may describe the process the proponent will follow in order to make the decisions and investments needed to achieve net-zero emissions by 2050. The implementation schedule must include:
    - The relevant data sources, assumptions, and information to support it; and,
    - A discussion on factors associated with the schedule such as schedule dependencies, constraints, and risk;
- As described in Section 12.1, a quantitative description of the Project's estimated annual net GHG emissions over the lifetime of the Project and the associated emission intensity, when relevant. This must be aligned with the implementation schedule of the different mitigation measures over time but also with the Project's

maximum design capacity, or expected operation capacity (if the Project is operating at a significantly different capacity from the maximum design capacity);

- The emissions reductions at specified intervals determined by the proponent, up to 2050. Explain how net GHG emissions reductions are maximized in the earlier years of the Project's lifespan. ECCC recommends intervals to be every five years or as appropriate for the Project;
- A set of emissions intensity targets (and/or emission targets if emissions intensity is not relevant) at specified time intervals for the lifetime of the Project;
- Additional discussions of each mitigation measure, including factors such as associated costs, technical challenges, risks, infrastructure requirements and any other relevant considerations;
- Any supportive actions needed in order to be able to achieve net-zero emissions. This could include, for example, identifying the need for the construction of a grid intertie to enable access to clean electricity; and,
- A description of measures taken to mitigate the Project's impact on carbon sinks, including measures to restore disturbed carbon sinks.

Recognizing that the status of emerging technologies and implementation of mitigation measures in decades to come could be challenging and uncertain, the plan can describe the process the proponent will follow in order to make the decisions and investments needed to achieve net-zero emissions by 2050.

12.4.1. Best Available Technologies / Best Environmental Practices Determination

An assessment must be conducted to confirm that the Project's design must reduce GHG emissions, in line with the boundaries of the Project undergoing the Federal Application. The scope of the analysis must be set at the Project level, instead of the equipment level, which gives the Project proponent flexibility to optimize the Project's overall design while demonstrating the use of BAT/BEP.

The BAT/BEP Determination process is outlined in Table 9.

Table 9: Best Available Technologies / Best Environmental Practices Determination

Process Step	Information Requirement
Listing	Proponent establishes a list of all technologies and practices, including emerging technologies, based on the identified sources of emissions for the Project during its lifetime.
Technical Feasibility Assessment	Proponent eliminates options determined to not be technically feasible, providing rationale. Proponent describes the timing and circumstances in which the eliminated options could become technically feasible.
GHG Reduction Potential Assessment	Proponent ranks remaining options based on potential percentage reduction of GHG emissions, level of technology maturity (i.e., when the technology could be implemented), and barriers to implementation.
Economic Feasibility Assessment and Additional Considerations	Proponent eliminates options determined to not be economically feasible, providing rationale. Proponent describes the timing and circumstances in which the eliminated options could become economically feasible. Proponent outlines additional environmental, social, or other considerations, providing rationale.
Selection of BAT/BEP	Proponent describes the technologies and practices to be used in the Project and provides a justification for selecting any technology or practice that is not a BAT/BEP. Proponent provides information on how the options eliminated because of technical and economical unfeasibility could be phased in during the Project lifetime, including how they could be considered during periods of Project maintenance and facility upgrades.
Review	IAAC or the relevant lifecycle regulator, with support from expert Federal authorities, reviews the BAT/BEP Determination and requests additional information if required.

The conclusion of the BAT/BEP Determination must be provided in the Application, and must include:

- List of GHG legislation, policies or regulations that are applicable to their projects and explain their implications, as described in Section 3.4.4 of the Technical Guide;
- The technologies and practices that may be used to mitigate the Project's GHG emissions, including an implementation schedule that includes relevant data sources, assumptions, and supporting information, as well as schedule dependencies, constraints, and risks (the implementation schedule does not need to describe every technology or practice the Project will implement over time to achieve net-zero emissions);
- The additional technologies and practices that could be considered during periods of Project maintenance and facility upgrades to further reduce the Project's GHG emissions through the lifetime of the Project, as well as the planning process, timing and circumstances for that consideration;
- Subject to public availability of information, a comparison of the Project's projected emissions intensity to similar high-performing, energy efficient projects in Canada and internationally; and,
- A description of any additional mitigation measures (i.e., offset measures) that will be implemented for the Project to achieve net-zero emissions by 2050, if applicable. The additional mitigation measures can include implementation of CO_2 capture and storage technologies, description of the proponent's corporate-level GHG commitments and/or net-zero plan and an explanation on how it aligns with the Project's credible net-zero plan, if relevant; and acquisition of offset credits.

12.4.2. Climate Change Resilience

The Application must provide information on how the Project is resilient to and at risk from both the current and future effects of a changing climate. This information must include descriptions of:

- The scope and timescale of the climate change resilience assessment and of the methods used to identify, evaluate, and manage the climate risks that could affect the Project itself and thereby the surrounding environment; and,
- The Project's vulnerabilities to climate change both in mean conditions and extremes over the full Project lifetime from Project construction to closure and post-closure. This could include the effects of extreme weather events on Project infrastructure, effects to water quality and availability, and so forth.

12.4.3. Plan to Achieve Net-Zero Emissions by 2050

If the Project has a lifetime beyond 2050, the Application must provide a credible plan that would use and build off the BAT/BEP Determination to describe the mitigation measures that will be taken to minimize GHG emissions throughout all phases of the Project and achieve net-zero emission by 2050, as described in Section 5.3 of the SACC. The net-zero plan must follow the principles and include the information outlined in Sections 3.5.1 and 3.5.2 of the Technical Guide, respectively.

13.0 MALFUNCTIONS AND ACCIDENTS

The Application must provide a risk-based approach for the assessment of malfunctions and accidents that could impact VCs and Indigenous interests identified for the Project. The assessment approach must evaluate the risk of malfunctions and accidents (including scenarios) by examining the likelihood of an incident (for example, malfunction or accident) and the consequences of the incident to each relevant VC and Indigenous interests. The results of the risk-based assessment must be used to develop plans and key mitigation measures or actions to reduce or eliminate the likelihood of an incident or reduce the consequence of incidents. Specific Project components and activities must be referenced, where relevant, and all phases of the Project must be considered.

The Application must:

- Describe where Skeena would not have care and control of products and would not be responsible for implementing mitigation measures;
- Include all the existing conditions data, modelling, risk assessment and technical information used to evaluate potential malfunctions and accidents, including uncertainties;
- Describe the evaluation in a manner that can be understood by the layperson;
- Distinguish between the plans and measures to reduce or eliminate the likelihood of an incident occurring;
- Identify measures to mitigate negative effects if an incident does occur;
- Identify whether or not measures would be able to effectively mitigate the negative effects of malfunctions and accidents on VCs, should they occur, including worst-case scenarios;
- Describe the regulatory mechanisms that could be implemented to address unplanned and unanticipated events including but not limited to those relating to insufficient mitigation by the proponent, and the negative effects of worst-case malfunctions and accidents;
- Consider the effects of climate change;
- Consider and describe whether regulatory response regimes and measures would be able to effectively reduce and prevent adverse effects (e.g., for worst-case spills of hazardous products or materials into aquatic environments);
- Describe how plans and measures to reduce or eliminate an incident from occurring were considered in determining the likelihood of an incident occurring, the consequences of the incident, and the risk;
- Describe the potential maximum physical extent of worst-case malfunctions and accidents scenarios. The uncertainty in the predictions of these scenarios must be described;
- Describe the potential incidents that may occur in all phases of the Project, including:
    - An explanation of how those potential incidents were identified;
    - The circumstances under which the incidents could occur; and,
    - A summary of mitigation measures that are assumed to apply to potential incidents and would be considered in their risk ratings;

- Identify and justify the spatial and temporal boundaries for the effects assessment associated with malfunctions and accidents. The spatial boundaries identified for effects from potential malfunctions and accidents must generally be larger than the boundaries for the Projects effects alone and may extend beyond Canadian jurisdiction;
- Describe the methods for assessing the potential risk of each incident, including magnitude and duration, definitions for classifications of likelihood, consequence and risk, and identification of threshold for incidents that must be carried forward for detailed analysis (e.g., incidents determined to be moderate or high-risk), including uncertainties;
- Provide an assessment of the likelihood of each incident occurring, based on, for example, historical trends and predictive models;
- Provide a high-level assessment of the consequence of each incident (consider potential environmental, economic, social, culture and health effects and effects to Indigenous interests);
- Provide a classification of the risk of each incident based on its likelihood and consequence;
- Identify all the incidents that must be carried forward for further assessment based on the criteria identified in the methods;
- Provide detailed information on the potential effects of each incident carried forward including:
    - Most likely and worst-case scenarios of the effects of incidents on VCs and Indigenous interests within spatial and temporal boundaries described for the assessment area;
    - Identify and justify the spatial and temporal boundaries that may be impacted by malfunctions and accidents (i.e., beyond the VC-specific assessment area boundaries, if applicable);
    - Information from historical incidents from similar operations and conditions, where applicable; and,
    - If applicable, the quantity and characteristics of the contaminants and other materials likely to be released into the environment from an incident;
- Assess the potential for minor and major accidental release of fuel or loss of dangerous goods. Where appropriate, provide an analysis of the potential environmental, health, social and economic effects of these discharges on aquatic and terrestrial environments, wildlife and wildlife health, and on human health within spatial boundaries described for the assessment area;
- Identify any local drinking water treatment plants or facilities that may treat water sources impacted by the Project and the capacity of the drinking water treatment plants or facilities to treat water sources impacted by an accidental release from the Project during all Project phases;
- Describe the role of the proponent in the case of spill, collision, grounding or other accidents or malfunctions associated with the Project;
- Describe mutual aid agreements in place in the event that the incident exceeds company resources and how these resources would be accessed;
- Describe or provide for a waste management plan, identifying key mitigation measures and actions, as it pertains to waste generated during an emergency response;
- Where appropriate, provide details regarding financial liability and compensation in place as required by regulation or company commitment;

- Provide detailed information on proposed mitigation measures to reduce the likelihood and consequence to VCs and Indigenous interests for incidents carried forward including:
    - Safety protocols, and mitigation measures to reduce the likelihood of incidents, including dam monitoring;
    - Contingency and emergency response procedures if such events do occur, including exercise and training for emergency response;
    - Communication and public notification plans, and public notification protocols;
    - Continuous education plans linked to emergency preparedness for surrounding public and Indigenous communities that may be affected by incidents;
    - Monitoring, evaluation, recovery measures, and adaptive management system to identify, proactively avoid, and rectify any malfunction and/or accident; and,
    - Likelihood of mitigation being successful and the time lag for mitigation to become effective;
- Provide conclusions on the potential risks of the incidents carried forward, including the level of confidence in those conclusions; and,
- Consider the interaction between the Project and other projects in the vicinity, including the potential for cumulative effects arising from accidents and malfunctions.

Malfunction and/or accidents to be assessed are grouped according to the following failure modes, but not limited to:

- Spills of hazardous substances stored on site (reagents, fuels, contained liquid waste);
- Leakage or spill of materials with potential risks to the environment (including petroleum products, chemicals, wastewater, and other materials) as a result of road, air, and/or water line transportation;
- Motor vehicle and trucking accidents on roads and highways;
- Accidental release of contaminants from ore/waste rock stockpiles;
- Water treatment system failure;
- Breach or failure of tailings dam or other containment structure;
- Accidental discharge of off-specification effluent from treatment plants;
- Sediment releases into watercourses;
- Fires or explosions;
- Failure of permanent and temporary waste rock storage facilities or stockpiles;
- Prolonged power failure (transmission lines or transformer);
- Harm to persons trespassing on site;
- Fly rock or excessive noise from blasting;
- Failure of underground mine stability; and,
- Ground instability or failure.

14.0 EFFECTS OF THE ENVIRONMENT ON THE PROJECT

The Application must describe how environmental conditions, including natural hazards such as severe and/or extreme weather conditions and external events, could adversely affect the Project and how this in turn could result in effects to the environmental, economic, social, culture and health conditions, particularly effects to Indigenous peoples who may experience greater health risks from changes to environmental conditions. These events are to be considered in different probability patterns (for example, 5-year flood vs. 100-year flood). The focus should be on credible external events that have a reasonable probability of occurrence and for which the resulting environmental effects could be major without careful management. The Application must describe how effects of the environment on the Project could have positive effects to the environmental, economic, social, culture, and health conditions.

The Application must:

- Provide details of planning, design and construction strategies intended to minimize the potential adverse effects of the environment on the Project;
- Identify any areas of potential wind or water erosion;
- Describe any mitigation measures that can be implemented in anticipation or in preparation for effects of the environment on the Project;
- Describe possible mitigation measures to manage adverse or enhance positive environmental, economic, social, cultural, and health effects resulting from effects of the environment on the Project, including any potential residual hazard or risk associated with those measures, if applicable;
- Describe climate resilience of the Project and how climate change impacts have been incorporated into the Project design and planning over the lifetime of the Project and describe the climate data and projections used;
- Describe how environmental factors could impact measures to mitigate the negative effects of the Project. The Application must summarize the potential effects of the environment on project mitigation in this section and consider this in the effects assessment of each VC;
- The Application must identify instances where negative effects of the environment on the Project would exceed those of malfunctions and accidents;
- Describe the environmental factors deemed to have possible consequences on the Project, including, but not necessarily limited to, consideration of natural hazards and influences of nature such as:
    - Potential impacts of climate change (e.g., temperature rise, and trend of increasing precipitation);
    - Extreme weather and weather-related events (e.g., heavy precipitation, extreme temperatures and high winds);
    - Flood events and drought conditions;
    - Lightning strike; and,
    - Forest fire;

- Identify any geological hazards that exist in the areas planned for the Project facilities and infrastructure, including:
    - History of seismic activity in the area, including induced earthquakes, and secondary effects such as the risk of seismic generated tsunamis, landslides and liquefaction;
    - Evidence of active faults;
    - Isostatic rise and subsidence;
    - History of landslides, slope erosion and the potential for ground and rock instability/landslides, and subsidence during and following Project activities;
    - History of landslide-generated tsunamis if near a shoreline;
    - History or and potential of submarine landslides;
    - History and potential of volcanic related hazards;
    - History of bank erosion or scour;
    - History of tsunamis generated by major telesiesmic earthquakes around the Pacific Ocean;
    - Instability or failure related to geological hazards; and,
    - History and/or potential of avalanche related hazards;
- Describe how climate change might increase the likelihood and severity of the above-mentioned environmental factors;
- Describe any changes or effects on the Project that may be caused by the above-mentioned environmental factors;
- Provide the likelihood (based on future climate change Projections) and consequence of the changes or effects to relevant VCs;
- Provide practical mitigation measures, including design strategies, environmental contingency plans, and climate risk plans to avoid or minimize the likelihood and consequence of the negative effects of the environment on the Project;
- Provide a conclusion about the potential risk of an effect of the environment on the Project and to relevant VCs; and,
- Describe how climate change has been incorporated into the Project design and planning over the lifetime of the Project and a description of the climate data and projections used.

15.0 ENGAGEMENT WITH SEITC & U.S. TRIBES THROUGH THE ALASKA TRIBAL TRANSBOUNDARY ADVISORY COMMITTEE (ATTAC)

The Southeast Alaska Indigenous Transboundary Commission (SEITC), a consortium of 15 sovereign Alaskan Tribes (member Tribes) has been engaged in the EA since September 2021. Seven member Tribes have the potential to be impacted by Eskay Creek, including Craig Tribal Association, Hydaburg Cooperative Association, Ketchikan Indian Community, Klawock Association, Metlakatla Indian Community, Organized Village of Kasaan, and Organized Village of Saxman. To advise on the potential transboundary effects of Eskay Creek on the seven member Tribes, the EAO has established the Alaska Tribal Transboundary Advisory Committee (ATTAC) under Section 22 of the *Environmental Assessment Act* (2018) consisting of SEITC and the seven U.S. Tribes.

The Application must:

- Provide a map showing the location of Eskay Creek in proximity to the territories of the seven member Tribes and Indigenous communities;
- Describe the proponent's ongoing and proposed engagement activities with the ATTAC regarding the Project and during the development of the Application. The engagement strategy for these parties must be informed in part by the Assessment Plan issued by the EAO;
- Describe whether the engagement is consistent with the requirements in the Assessment Plan, and if not, provide a rationale;
- Provide a description of the information and material that were distributed, and describe the efforts made to distribute Project information during the Early Engagement, Process Planning and Application Development stages. The Application must indicate engagement methods, the issues identified, the location of any in-person engagement, the number of participants, and the views expressed;
- Describe the extent to which ATTAC feedback was incorporated into the design of the Project and in the Application;
- Provide a summary of key issues related to the Project raised through engagement with the ATTAC and the potential environmental, economic, social, cultural and health effects, including disproportionate effects for diverse subgroups within the population and effects to current and future generations;
- Describe how issues raised were addressed, such as alternatives means, specific mitigation measures or specific monitoring programs and adaptive management to deal with uncertainty. The Application must identify the ATTAC concerns that were not addressed, if any, and provide reasons why the concerns were not addressed; and,
- Provide details regarding how the ATTAC must be engaged during all phases of the Project, if the Project is approved and proceeds. This includes public and stakeholder involvement in follow-up and monitoring programs.

16.0 ENGAGEMENT WITH THE PUBLIC AND STAKEHOLDERS

The Application must:

- Describe the proponent's ongoing and proposed engagement activities with the public and stakeholders regarding the Project and during the development of the Application. The engagement strategy for these parties must be informed in part by the Assessment Plan issued by the EAO;
- Describe whether the engagement is consistent with the requirements in the Assessment Plan, and if not, provide a rationale;
- Provide a description of the information and material that were distributed, and describe the efforts made to distribute Project information during the Early Engagement, Process Planning and Application Development stages. The Application must indicate engagement methods, the groups engaged (including diverse subgroups), the issues identified, the location of any in-person engagement, the number of participants, and the views expressed;
- Describe the extent to which public and stakeholder feedback was incorporated into the design of the Project and in the Application;
- Provide a summary of key issues related to the Project raised through engagement with the public and stakeholders and the potential environmental, economic, social, cultural and health effects, including disproportionate effects for diverse subgroups within the population and effects to current and future generations;
- Describe how issues raised were addressed, such as alternatives means, specific mitigation measures or specific monitoring programs and adaptive management to deal with uncertainty. The Application must identify the public and stakeholder concerns that were not addressed, if any, and provide reasons why the concerns were not addressed; and,
- Provide details regarding how the public and stakeholders must be engaged during all phases of the Project, if the Project is approved and proceeds. This includes public and stakeholder involvement in follow-up and monitoring programs.

17.0 Local Government Engagement

The Application must:

- Describe the proponents ongoing local government engagement on the Project and proposed activities during the development of the Application. The proponent's engagement strategy must be informed in part by the Assessment Plan issued by the EAO;
- Describe whether the engagement is consistent with the requirements in the Assessment Plan, and if not, provide a rationale;
- Describe the information and materials that were distributed, and the efforts made to distribute Project information during the Project engagement;
- Indicate the methods used, where in-person engagement was held, the views expressed and the extent to which this information was incorporated in the design of the Project as well as in the Application;
- Provide a summary of key issues related to the Project, which were raised through engagement with local government and the potential environmental, economic, social, culture and health effects, including disproportionate effects on diverse subgroups and effects to current and future generations;
- Describe ways to address the issues raised, such as alternatives means, specific mitigation measures or specific monitoring programs and adaptive management to deal with uncertainty;
- Identify local government concerns that were not addressed, if any, and provide reasons why the concerns were not addressed; and,
- Provide details regarding how local governments must be kept involved during all phases of the Project, if the Project is approved and proceeds.

18.0 SUMMARY OF BIOPHYSICAL FACTORS THAT SUPPORT ECOSYSTEM FUNCTION

The Application must consider Project effects on biophysical factors that support ecosystem function based on the results of the VC assessments, including the cumulative effects assessments. The assessment must follow the process outlined below:

- Provide an overview of the current ecosystem function in the vicinity of the Project at a landscape and watershed level;
- Identify the key biophysical factors that support ecosystem function that the Project effects may interact with;
- Discuss how the individual VC assessments and cumulative effects assessments, and these assessments collectively, considered effects on these biophysical factors;
- Summarize the positive and negative effects, including adverse cumulative effects, and effects collectively, on biophysical factors that support ecosystem function based on appropriate information from the VC assessments;
- Identify proposed measures required to manage potential effects on biophysical factors that support ecosystem function; and,
- Describe any predicted changes to ecosystem function as a result of the Project.

18.1. Hyperlinks to Tahltan Requirements

This section provides the hyperlinks between Tahltan requirements found in Section 4.0 and the requirements identified here.

18.2. Hyperlinks to Nisga’a Nation Requirements

This section provides the hyperlinks between Nisga’a Nation requirements found in Section 5.0 and the requirements identified here.

19.0 SUMMARY OF HUMAN AND COMMUNITY WELL-BEING

The Application must:

- Provide an overview of the current state of human and community well-being in the Project area from both a local and Indigenous perspective;
- Describe how input from engagement related to effects on human and community well-being was incorporated and how the Project has changed as a result;
- Describe the socio-cultural environment, identifying Indigenous nations and predominant cultural communities; demographic characteristics and major socio-cultural concerns of the population;
- Describe influences on community well-being, such as disposable income, cost of living, language, policing, drug trafficking (using for example problematic substance use as proxy measure) and community safety issues (e.g., illegal activities and violence; exploitative activities using for example rates of sexually transmitted infections as proxy measure, and gender-based violence; etc.), including indicators proposed by each Indigenous nation;
- Describe the considerations for the safety of all persons, and in particular of Indigenous and non-Indigenous women and girls and gender-diverse people as per Final Report on Missing and Murdered Indigenous Women and Girls (Calls 13.1-13.5);
- Describe community cohesion, including factors such as community or neighbourhood engagement, support, and social networks and other social activities;
- Describe factors, or aspects, of the psychosocial environment and their influence on community well-being linked to mental well-being; for example: community cohesion, social-cultural environment, social divisions, language, sources of stress as part of psychosocial pathways linking project components and activities to mental well-being;
- Describe access, ownership and use of resources (such as, land tenure, minerals, food, water, social infrastructure), contributing to community well-being, and how these factors affect mental and physical well-being;
- Describe the capacity (currently available or planned) of institutions to deliver public services and infrastructure;
- Describe relevant historical community background;
- Describe applicable history with previous project developers;
- Summarize potential positive and negative effects including residual adverse cumulative effects of the Project on community well-being based on the results of the applicable environmental/biophysical, economic, social, and cultural VC assessments (from Section 11) and the assessment of effects to Indigenous interests, and identify their links to human health effects in terms of mental and physical well-being;
- Identify how the Project interacts differently with diverse subgroups;
- Identify if the Project interacts with other factors that support human and community well-being that were not specifically assessed as part of a VC;
- Identify any key measures proposed to manage potential effects on human and community well-being;
- Describe any anticipated changes to human and community well-being more generally as a result of the Project;

- Assess potential adverse and positive effects of changes to social conditions including, but not limited to:
  - Food security;
  - Income inequity;
  - Changes at the community-level that affect social conditions as result of increased population, worker camps, economic activity, cost of living, among other factors; and,
  - Non-commercial/trade economy;
- Describe in- and out-migration effects, including changes in social and cultural make-up of affected communities and changes in populations;
- Identify whether social divisions might be intensified as a result of the Project;
- Evaluate potential social effects associated with increased disposable income, including potential cost of living effects, adverse and positive health-related behaviour changes, distribution of benefits among affected people;
- Describe any anticipated effects to language;
- Describe changes to viewscapes as a result of the Project and potential effects to community well-being;
- Consider the potential for stresses on community, family and household cohesion, alcohol and substance abuse, or illegal or other potentially disruptive activities; and,
- Apply GBA Plus within the information related to community well-being and document how potential effects of changes to community well-being could be different for diverse subgroups, including Indigenous peoples or groups identified by gender, age, or other community relevant factors.

19.1. Hyperlinks to Tahltan Requirements

This section provides the hyperlinks between Tahltan requirements found in Section 4.0 and the requirements identified here.

19.2. Hyperlinks to Nisga’a Nation Requirements

This section provides the hyperlinks between Nisga’a Nation requirements found in Section 5.0 and the requirements identified here.

20.0 Summary of Effects on Current and Future Generations

The Application must summarize the analysis and conclusions for environmental, economic, social, culture and health VCs and Indigenous interests that contribute to the Project's positive or negative effects on current and future generations, including summarizing any differences in distribution of effects within populations (i.e., by applying GBA Plus).

The Application must:

- Describe how input from engagement related to effects on current and future generations was incorporated and how the Project has changed as a result;
- Demonstrate how any strategic direction from the Province of BC regarding sustainable development was considered;
- Provide any mitigation measures proposed to more equitably distribute positive and negative effects over time (e.g., across generations);
- Discuss the potential outcome that residual effects to VCs and Indigenous interests must have on both current and future generations;
- Discuss the type(s) of economic growth that would be generated by the Project and how this growth would be distributed, both within the population and over time; and,
- Identify any relevant regional or provincial growth strategies and describe how the Project is or is not aligned with them.

20.1. Hyperlinks to Tahltan Requirements

This section provides the hyperlinks between Tahltan requirements found in Section 4.0 and the requirements identified here.

20.2. Hyperlinks to Nisga'a Nation Requirements

This section provides the hyperlinks between Nisga'a Nation requirements found in Section 5.0 and the requirements identified here.

21.0 CANADA'S ABILITY TO MEET ITS ENVIRONMENTAL OBLIGATIONS AND CLIMATE CHANGE COMMITMENTS

In accordance with paragraph 22(1)(i) of the IAA, the Application must describe the effects of the Project in the context of environmental obligations and commitments in respect of climate change, with a focus on Government of Canada obligations and commitments relevant to decision-making.

Federal environmental obligations relevant to this project include:

- The Convention on Biological Diversity and Canada's supporting national framework (e.g., the Canadian Biodiversity Strategy, Canada's Biodiversity Outcomes Framework and the current biodiversity goals and objectives in Canada) and legislation that supports the implementation of Canada's biodiversity commitments, including the *Species at Risk Act* (SARA; 2002) and the *Canada Wildlife Act* (1985), as well as supporting policies and guidance documents. For further information, the proponent is encouraged to consult the publications and resources available on the *biodivcanada website*;
- Recovery Strategies and Action Plans developed under the SARA for species at risk potentially affected by the project are available on the *Species at Risk Public Registry website*;
- The *Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar)*, as implemented in part under the *Federal Policy on Wetland Conservation* and supporting guidance documents such as the *North American Waterfowl Management Plan*;
- The Convention for the Protection of Migratory Birds in the United States and Canada, as implemented in part under the *Migratory Birds Convention Act* (1994) and its *regulations*, and supporting guidance documents on conservation objectives derived from bird conservation regions and strategies;
- Article IV of the *Boundary Waters Treaty*, which stipulates that boundary and transboundary waters shall not be polluted in either country to the injury of property or health of the other country, as confirmed and sanctioned in the *International Boundary Waters Treaty Act;* and,
- Federal environmental obligations that may be relevant to this Project, depending on the range of transport for acidifying emissions that is determined for the Project:
    - UNECE Protocol to Abate Acidification, Eutrophication, and Ground-level Ozone (Gothenburg Protocol); also known as the Gothenburg Protocol to Reduce Transboundary Air Pollution; and,
    - The Canada-United States Air Quality Agreement.

The Application must:

- Describe the extent to which the effects of the Project could hinder or contribute to Canada's ability to meet its environmental obligations;
- Describe where the Project may enable Canada to meet its environmental obligations, including the proponents' plans and commitments to ensure that positive contributions are respected; and,
- Describe where the Project may adversely affect Canada's ability to meet its environmental obligations, including the mitigation measures and follow-up programs related to those effects.

The Application must refer to IAAC's guidance documents on this topic, including the document Policy Context: Considering Environmental Obligations and Commitments in Respect of Climate Change under the *Impact Assessment Act*.

22.0 EXTENT TO WHICH THE PROJECT CONTRIBUTES TO SUSTAINABILITY

The Application must characterize the Project's contribution to sustainability. The Application must describe the context of the Project, including the issues of importance to participants, the diversity of views expressed, and the selection of VCs. Once the analysis on potential effects of the Project is conducted, the sustainability principles must be applied in an analysis of how the Project must:

- Consider the interconnectedness and interdependence of human-ecological systems;
- Consider the well-being of present and future generations;
- Consider positive benefits and reduce adverse effects of the Project; and,
- Apply the precautionary principle by considering uncertainty and risk of irreversible harm.

The Application must provide an analysis of the extent to which the Project contributes to sustainability. The analysis should be qualitative but may draw on quantitative data to provide context, and should follow the methodology outlined in the federal *Guidance: Considering the Extent to which a Project Contributes to Sustainability* document (2021) and must:

- Describe engagement with potentially affected Indigenous nations and outline measures and commitments that contribute to the sustainability of Indigenous livelihood, Indigenous Land Use, culture and well-being:
    - Include any description of sustainability as defined by Indigenous nations;
    - Indicate how Indigenous knowledge and community knowledge have informed how sustainability and well-being is defined for the assessment, and whether Indigenous communities and local communities have been engaged to define its key components, including the values and interests of future generations; and,
    - Describe the Project-specific context, including key issues of importance to Indigenous nations and the public that will inform the sustainability assessment;
- Describe how the sustainability principles were considered in:
    - The assessment of the potential effects of the Project, including setting spatial and temporal boundaries, and identifying mitigation measures and enhancements; and,
    - The planning and design of the Project and the selection of the preferred alternative means and alternatives to the Project;
- Describe and document all uncertainties and assumptions underpinning the analysis;
- Describe how the precautionary principle was applied in cases where there may be risk of irreversible harm;
- Provide a summary of the positive and adverse environmental, health, social and economic effects of the Project, with emphasis on potentially affected Indigenous nations, local communities and disadvantaged populations; and,
- Indicate how monitoring, management and reporting systems consider the sustainability principles and attempt to ensure continuous progress towards sustainability.

22.1. Hyperlinks to Tahltan Requirements

This section provides the hyperlinks between Tahltan requirements found in Section 4.0 and the requirements identified here.

22.2. Hyperlinks to Nisga’a Nation Requirements

This section provides the hyperlinks between Nisga’a Nation requirements found in Section 5.0 and the requirements identified here.

23.0 SUMMARY OF STATUTORY REQUIREMENTS UNDER THE FEDERAL IAA

As substitution for the Project was approved on November 29, 2022, the Application must contain information that addresses the statutory requirements under the IAA. This section must contain the location within the Application of where Federal requirements have been addressed, namely the effects within Federal jurisdiction as defined in Section 2 of the IAA (Table 10) and each of the factors set out in Section 22 of the IAA (Table 11). The Application must also address any additional conditions of substitution set out in the Notice of Substitution Approval[12] under the IAA issued by IAAC. If specific requirements of the IAA have not been addressed within the Application, a rationale for their exclusion must be provided. The Application should include a series of tables summarizing the following information:

- Potential environmental, health, social and economic effects and the potential impacts and effects on Indigenous peoples, their communities and their rights and interests;
- Potential mitigation and enhancement measures in relation to potential effects and impacts;
- Description of the residual effects of the Project;
- Cumulative effects and proposed mitigation measures to address them;
- Any other commitments made by the Proponent or recommendations made by the Proponent to other parties; and,
- Identifies the effects falling within federal jurisdiction, as well as direct or incidental effects. The effects within federal jurisdiction, and direct and incidental effects, are defined in Section 2 of the IAA.

[12] *https://www.projects.eao.gov.bc.ca/api/public/document/6387d9101c96ac0022c3f524/download/Eskay%20Creek%20-%20Federal%20Response%20to%20Request%20for%20Substitution%20-%2020221129.pdf*

Table 10: Effects within Federal Jurisdiction – Section 2 of IAA

Factor to be Considered (as defined in Section 2 of the *Impact Assessment Act*)	Section of Hybrid AIR Where the Requirements Have Been Included	Section of Application Where the Effect is Assessed	Description of Assessment	Assessment Findings
Effects within Federal jurisdiction means, with respect to a physical activity or a designated Project: (a) A change to the following components of the environment that are within the legislative authority of Parliament: (i) Fish and fish habitat, as defined in subsection 2(1) of the *Fisheries Act;*	Section 11.8 describes the requirements to address effects within Federal Jurisdiction in relation to fish and fish habitat, as defined in subsection 2(1) of the *Fisheries Act.*	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(ii) Aquatic species, as defined in subsection 2(1) of the *Species at Risk Act;*	Section 11.8 describes the requirements to address effects within Federal Jurisdiction in relation to aquatic species as defined in subsection 2(1) of the *Species at Risk Act.*	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(iii) Migratory birds, as defined in subsection 2(1) of the *Migratory Birds Convention Act,* 1994; and,	Migratory birds will be a sub-component of the Wildlife and Wildlife Habitat VC (Section 11.10), which describes the requirements to address effects within Federal jurisdiction for migratory birds as defined in subsection 2(1) of the *Migratory Birds Convention Act*, 1994.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(iv) Any other component of the *environment* that is set out in Schedule 3;	The legislative authority of Parliament that is set out in Schedule 3 is currently not available. This requirement is not applicable.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.

Factor to be Considered (as defined in Section 2 of the *Impact Assessment Act*)	Section of Hybrid AIR Where the Requirements Have Been Included	Section of Application Where the Effect is Assessed	Description of Assessment	Assessment Findings
(b) A change to the environment that would occur: (i) On Federal lands;	Any requirements to address changes to the environment within federal jurisdiction are provided in Section 11 (Valued Components Effects Assessment). There are no changes to the environment anticipated on Federal lands.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(ii) In a Province other than the one where the physical activity or the designated Project is being carried out; or,	There are no changes to the environment anticipated in a Province other than the one where the physical activity or the designated Project is being carried out.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(iii) Outside Canada;	There are no changes to the environment anticipated outside Canada. If effects outside Canada are anticipated, however small, the Application must describe those effects in a stand-alone section (either a subsection of the applicable VC effects assessment or in a separate chapter).	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(c) With respect to the Indigenous peoples of Canada, an impact — occurring in Canada and resulting from any change to the environment — on: (i) Physical and cultural heritage;	Sections 4 to 8 describe the community-specific assessment for Indigenous nations. Section 11.15 describes the requirements to address effects on physical and cultural heritage.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(ii) The current use of lands and resources for traditional purposes; or,	Section 11.16 describes the requirements to address effects the current use of lands and resources for traditional purposes.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.

Factor to be Considered (as defined in Section 2 of the *Impact Assessment Act*)	Section of Hybrid AIR Where the Requirements Have Been Included	Section of Application Where the Effect is Assessed	Description of Assessment	Assessment Findings
(iii) Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance;	Section 11.15 describes the requirements to address effects on any structure, site or thing that is of historical, archaeological, paleontological, or architectural value.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(d) Any change occurring in Canada to the health, social or economic conditions of the Indigenous peoples of Canada; and,	The Project's potential effects to health, social, and economic conditions of the Indigenous peoples of Canada are considered in Sections 4 to 8	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.
(e) Any change to a health, social or economic matter that is within the legislative authority of Parliament that is set out in Schedule 3.	The legislative authority of Parliament that is set out in Schedule 3 is currently not available. This requirement is not applicable.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must contain a description of effects relative to Federal assessment matters.	This column must provide the assessment findings where Federal assessment matters were assessed.

Table 11: Factors to be Considered – Section 22 of IAA

Factor to be Considered (as defined in Section 22 of the *Impact Assessment Act*)	Section of Hybrid AIR Where the Requirements have been Included	Section of Application Where the Factor is Assessed	Assessment Findings
(a) The changes to the environment or to health, social or economic conditions and the positive and negative consequences of these changes that are likely to be caused by the carrying out of the designated Project, including:	Sections 11.1 to 11.10 provide the changes to the environment and the positive and negative consequences of these changes that are likely to be caused by the Project. Sections 11.11 to 11.14 provide the changes to the social, health or economic conditions and the positive and negative consequences of these changes that are likely to be caused by the Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(i) The effects of malfunctions or accidents that may occur in connection with the designated Project;	Section 13 describes the effects of malfunctions or accidents that may occur in connection with the Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.

Factor to be Considered (as defined in Section 22 of the *Impact Assessment Act*)	Section of Hybrid AIR Where the Requirements have been Included	Section of Application Where the Factor is Assessed	Assessment Findings
(ii) Any cumulative effects that are likely to result from the designated Project in combination with other physical activities that have been or must be carried out; and,	Sections 4 to 8 describe the requirements to address any cumulative effects that are likely to result from the designated Project in combination with other physical activities that have been or will be carried out. The methods for the CEA are provided in Section 10.10.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(iii) The result of any interaction between those effects;	Sections 4 to 8 describe the requirements to address the interaction between the effects from malfunctions or accidents and any cumulative effects from the Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(b) Mitigation measures that are technically and economically feasible and that would mitigate any adverse effects of the designated Project;	Each of the effects assessment subsections in Section 11 includes a subsection called Effects Management (e.g., Section 11.1.5, Section 11.2.5, Section 11.3.5, etc.) that describes the requirements to address mitigation measures that are technically and economically feasible and that would mitigate any adverse effects of the designated Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(c) The impact that the designated Project may have on any Indigenous nation and any adverse impact that the designated Project may have on the rights of the Indigenous peoples of Canada recognized and affirmed by Section 35 of the *Constitution Act*, 1982;	Sections 4 to 8 describe the requirements to address the impact that the designated Project may have on any Indigenous nation and any adverse impact that the designated Project may have on the rights of the Indigenous peoples of Canada recognized and affirmed by Section 35 of the *Constitution Act*, 1982.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(d) The purpose of and need for the designated Project;	Sections 1.7.1 and 1.7.2 describe the requirements to address the purpose of a need for the designated Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(e) Alternative means of carrying out the designated Project that are technically and economically feasible, including through the use of best available technologies, and the effects of those means;	Section 1.7.4 describes the requirements to address the alternative means of carrying out the designated Project that are technically and economically feasible, including through the use of best available technologies, and the effects of those means.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.

Factor to be Considered (as defined in Section 22 of the *Impact Assessment Act*)	Section of Hybrid AIR Where the Requirements have been Included	Section of Application Where the Factor is Assessed	Assessment Findings
(f) Any alternatives to the designated Project that are technically and economically feasible and are directly related to the designated Project;	Section 1.7.3 describes the requirements to address any alternatives to the designated Project that are technically and economically feasible and are directly related to the designated Project	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(g) Indigenous Knowledge provided with respect to the designated Project;	Each of the effects assessment subsections in Section 11 includes a subsection called Existing Conditions (e.g., Section 11.1.3, Section 11.2.3, Section 11.3.3, etc.) that describes the requirement to discuss available Indigenous or local knowledge related to the applicable VCs. Section 10.4 describes the requirements for the collection and use of Indigenous knowledge in the Application. Section 11 outlines the requirements of how Indigenous knowledge was used in designing and carrying out studies on existing conditions, effects assessment and identification of mitigation measures for each VC.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(h) The extent to which the designated Project contributes to sustainability;	Section 22 contains the requirement to describe the extent to which the designated Project contributes to sustainability.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(i) The extent to which the effects of the designated Project hinder or contribute to the Government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change;	Section 21 contains the requirement to describe the extent to which the effects of the designated Project hinder or contribute to the Government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(j) Any change to the designated Project that may be caused by the environment;	Section 14 contains the requirement to describe any change to the designated Project that may be caused by the environment.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.

Factor to be Considered (as defined in Section 22 of the *Impact Assessment Act*)	Section of Hybrid AIR Where the Requirements have been Included	Section of Application Where the Factor is Assessed	Assessment Findings
(k) The requirements of the follow-up program in respect of the designated Project;	Section 10.11, as well as subsections called Follow-up Strategy found in each of the effects assessment subsections in Section 11 (e.g., Section 11.1.10, Section 11.2.10, Section 11.3.10, etc.), describe the requirements of the follow-up program in respect of the designated Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(l) Considerations related to Indigenous cultures raised with respect to the designated Project;	Sections 4 to 8, 11.15, 11.16, and 11.17 describe the requirements to summarize considerations related to Indigenous cultures raised with respect to the designated Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(m) Community knowledge provided with respect to the designated Project;	Sections 2 and 4 through 8 describe the requirements to summarize community knowledge provided with respect to the designated Project. Sections 15, 16 and 17 describe the requirements to summarize feedback received from the ATTAC, public and local government with respect to the designated Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(n) Comments received from the public;	Section 16 describes the requirements to summarize feedback received from the public with respect to the designated Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(o) Comments from a jurisdiction that are received in the course of consultations conducted under Section 21;	Section 17 describes the requirements to summarize feedback received from jurisdictions received in the course of consultations conducted under Section 21 with respect to the designated Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(p) Any relevant assessment referred to in Section 92, 93 or 95;	Section 3 contains the requirements to describe any relevant regional or strategic assessment referred to in Section 92, 93, or 95.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.

Factor to be Considered (as defined in Section 22 of the *Impact Assessment Act*)	Section of Hybrid AIR Where the Requirements have been Included	Section of Application Where the Factor is Assessed	Assessment Findings
(q) Any assessment of the effects of the designated Project that is conducted by or on behalf of an Indigenous governing body and that is provided with respect to the designated Project;	Sections 2 and 4 contain assessment of the effects of the designated Project that is conducted by or on behalf of TCG and that is provided with respect to the designated Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(r) Any study or plan that is conducted or prepared by a jurisdiction — or an Indigenous governing body not referred to in paragraph (f) or (g) of the definition jurisdiction in Section 2 — that is in respect of a region related to the designated Project and that has been provided with respect to the Project;	Sections 3 through 8 contain the requirements to address any study or plan that is conducted or prepared by a jurisdiction — or an Indigenous governing body not referred to in paragraph (f) or (g) of the definition jurisdiction in Section 2 — that is in respect of a region related to the designated Project and that has been provided with respect to the Project.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(s) The intersection of sex and gender with other identity factors; and,	Sections 11.11 through 11.17 and Section 19 contain the requirements to assess the effects of the Project in consideration of the intersection of sex and gender with other identity factors.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.
(t) Any other matter relevant to the impact assessment that IAAC requires to be taken into account.	To be determined.	This column must provide a cross-reference to the section of the Application where Federal assessment matters are addressed.	This column must provide the assessment finding where Federal assessment matters were assessed.

24.0 REFERENCES

The Application must include a list of the information sources cited. These references may include many of the same sources used in preparation of this document (as listed below).

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25.0 APPENDICES

25.1. Summary of Mitigation Measures

The Application must include a summary table of mitigations for potential Project effects by Project phase and indicate where the mitigation would be housed including the proponent's proposed EA level commitments and requirements associated with permitting authorizations. The Application must describe how disproportionate effects that were identified in the results of the analysis as per GBA Plus were used to inform mitigation and enhancement measures. The BC EAO must use this table during issues resolution, in updating the Regulatory Coordination Plan to describe how issues are being addressed in the assessment or could be further addressed in permitting, and in the development of the draft Environmental Assessment Certificate including proposed conditions or Federal Decision Statement.

The Application must also describe the Project's environmental Project plan and its environmental management system through which the proponent must deliver this plan. The plan must provide an overall perspective on how potentially adverse effects would be minimized and managed over time.

25.2. Requested Project for Certification

The Application must provide the proponent's requested Project description for the Environmental Assessment Certificate, including maps and the requested duration of the Environmental Assessment Certificate.

25.3. Authorship

The Application must identify key personnel responsible for preparing the Application including, their employers, qualifications, and the sections for which they were contributors.

The Application must identify key information, reports and data used to support the development of the Application and the associated contributing organization and relevant qualifications. The Application must demonstrate that a qualified individual has prepared the information or studies provided. A qualified individual would include someone who, through education, experience or knowledge relevant to a matter, may be relied on by the proponent to provide advice within their area of expertise. Knowledge relevant to a matter may include Indigenous and local knowledge. Where applicable, analysis completed by a qualified professional must be signed/sealed according to the guidelines/rules set out by the governing body overseeing the practice of said professional.

25.4. Reviews of Information

The Application must provide a summary of the reviews of information from the Technical Advisory Committee that have supported the development of the Application, in a tracking table showing:

- The reviewer;
- The date information was provided to the reviewer;
- The information that was provided to the reviewer;
- The date comments were received from the reviewer;
- The comments received from the reviewer; and,
- How comments were addressed.

The Application must provide a summary of the reviews of information supporting the development of the Application in a tracking table showing the reviewers, the date information was provided to reviewers, the information that was provided to reviewers, the date comments were received from reviewers, the comments that were received from reviewers, and how those comments were addressed.

Prior to Application submission, the proponent must provide an Application Development Engagement Plan for the review of information supporting the development of the Application that meets the following specifications:

- Information must be provided to reviewers for a review period that is a minimum of 4 weeks in duration, or a length of time that is determined in detailed planning sessions with agencies and Indigenous nations;
- Reviewers and the EAO must be provided with two weeks of advance notice before the proponent sends information for review;
- Information for different VCs may be provided at different times; however, the proponent should consider sending information in packages that make efficient use of reviewers' time and support their understanding of materials and the effects of the Project;
- The proponent must track comments received from reviewers and its responses in a tracking table and provide this table to the EAO;
- The reviewers for information must be identified by organization (see example in Table 12), considering the following factors:
    - Reviewers must vary based on the composition of the Technical Advisory Committee for the Project;
    - The EAO can provide guidance based on the organizations and specific participants to represent organizations for individual Projects;
    - Information to be reviewed must depend on the VCs identified for the Project; and,
    - Indigenous nation reviewers should be identified based on their identified Indigenous interests and based on their interest in reviewing information; and,
- The expected timelines for providing information to reviewers must be identified.

Table 12: Information to Be Reviewed and Potential Reviewers

Information	Potential Reviewers*
Air Quality existing conditions and predictive studies	Ministry of Environment and Climate Change Strategy (ENV) - Air Quality Section
Acoustic existing conditions and predictive studies	Relevant Health Authority, Health Canada
Visual Resource predicted impacts	Ministry of Forests (FOR)
Geoscience studies	Ministry of Energy, Mines and Low Carbon Innovation (EMLI)
Geotechnical studies	EMLI
Reclamation plans	EMLI
Water Quality existing conditions and predictive studies	ENV, Environment and Climate Change Canada (ECCC)
Surficial hydrology existing conditions and predictive studies	ECCC, ENV, FOR
Hydrogeology existing conditions and predictive studies	EMLI

Information	Potential Reviewers*
Soil studies	EMLI, ENV
Unique Geological Landform studies	EAO+
Vegetation existing conditions and predictive studies	FOR, ECCC
Wildlife existing conditions and predictive studies	FOR, ECCC
Freshwater Fish and aquatic life existing conditions and predictive studies	FOR, DFO
Employment and Economy existing conditions and predictive studies	EAO+
Infrastructure and Services studies	EAO, local governments, Health Canada, Northern Health
Human Health Risk Assessment	Northern Health, Health Canada, Ministry of Health
Archaeology Impact Assessments	FOR- Heritage Branch
Cultural studies	Applicable Indigenous nation
Greenhouse Gas predictive studies	ECCC, Climate Action Secretariat
Malfunction and Accidents analyses	ECCC, EMLI, ENV, EAO+
Alternatives assessment, including tailings alternatives assessment, where applicable	ECCC, EMLI, EAO+

Notes:

* Indigenous nations may be reviewers for any type of information, based on their identified interest.

+ Other ministries may also be identified.

APPENDIX A – PROPOSED SPATIAL ASSESSMENT AREA BOUNDARIES

The following maps present the proposed LAA and RAA boundaries for identified VCs, as described in Section 10.3. The assessment area boundaries follow the directions provided in EAO's Effects Assessment Policy. Assessment area boundaries may be revised if analysis indicates that the Project's effects will have a greater geographic extent than currently anticipated. Table A-1 describes the rationale for the selection of each spatial boundary.

For clarity, the Application is required to assess the effects of the following transportation facilities and activities for each VC:

- Road use and transportation of concentrate, supplies, and personnel: between the mine site and the port facilities located in the District of Stewart; between the mine site and Iskut; from the mine site along Highway 37 to the Nass Area; and along Highway 37 within the Nass Area and the Nass Wildlife Area;
- Loading, unloading, handling, and storage of concentrate at the port facilities located in the District of Stewart, up to and including the point at which the loading of concentrate onto a vessel is completed;
- Access and haul roads; and,
- Temporary and permanent vehicle maintenance, truck parking and wash facilities.

The Application must include a map or maps of the assessment boundaries used for the assessment.

Table A-1: Rationales for Selected Local and Regional Assessment Areas

Valued Component	Local Assessment Area	Regional Assessment Area
Air Quality	• The air quality LAA is based on the CALPUFF modelling domain: a square 40 km east-west by 40 km north-south centred on the Project; and, • The LAA is the area within which air quality effects of the Project are most likely to occur.	• The air quality RAA is a square 60 km east-west by 60 km north-south centred on the Project and the LAA, trimmed along the BC-Alaska border. • This area was chosen in order to consider potential effects of the Project in more distant areas, sensitive receptor sites, and to account for other current activities that may cumulatively affect air quality. • The RAA is the maximum spatial extent over which effects of the Project (direct, indirect, or cumulative) are expected.
Noise and Vibration	• A single Noise and Vibration Assessment Area will be determined using modelling to include the area where the predicted levels from the Project are less than the most stringent noise criteria: Ln of 40 dBA; • At this time, Skeena estimates this Assessment Area to extend to 10 km from the boundary of the Project site and at least 1 km from the Eskay Creek Mine Access Road; • In addition to this Assessment Area, the effect of an increase in road traffic to a representative residential receptor within 1 km of Highways 37 and 37A will be considered; and, • Based on the model, the Assessment Area will be expanded to consider sensitive receptors near these roads.	

Valued Component	Local Assessment Area	Regional Assessment Area
Groundwater	• The LAA consists of the model domain area used in the Groundwater Model Report, plus a 500 m buffer around the transmission line footprint; and, • The model domain encompasses approximately 61.7 km^2 with maximum north-south and east-west dimensions of 9.1 km and 10.6 km, respectively. The domain includes the proposed mine pits, WRSF (as well as the historic underground mine workings), and the proposed and historic Tom MacKay tailing storage facility. The boundary follows the centrelines of Unuk River (to the southeast) and Harrymel Creek (to the west), which are regional and local groundwater discharge zones, respectively. The rest of the domain boundary follows the natural surface water catchment divides that are assumed to also be groundwater divides.	• The RAA expands the LAA to the south between the Harrymel Creek and Unuk River and ends at the confluence of these two watercourses; and, • The RAA represents the extent of potential Projects effects on groundwater resources.
Surface Water/Fish and Fish Habitat	• The LAA includes the following sub-watersheds: Ketchum Creek, Tom Mackay Creek, Argillite Creek, Eskay Creek, Coulter Creek, Harrymel Creek, Unuk River, Volcano Creek, and a portion of the Iskut River. The LAA includes the watercourses listed, their tributaries within the LAA boundary, and a riparian buffer around all waterbodies; • The LAA includes tributary watersheds within the Project area and downstream, the adjacent section of the Unuk River, and confirmed fish-bearing waterways which may be influenced by the Project. Tom Mackay Creek, Argillite Creek, Eskay Creek, Volcano Creek and Ketchum Creek are included in the LAA because they are potentially affected by Project infrastructure. Harrymel Creek, Coulter Creek, and the Unuk River are potentially affected by seepage and/or effluent discharge from the Project. The Iskut River was included as a result of expressed interest during early engagement; and, • At the local scale, the north part of the Project area is drained by Tom MacKay and Argillite creeks, tributaries to Ketchum Creek and the Unuk River. The southern portion is drained by Eskay Creek, a tributary to the Unuk River. Runoff from operations may affect Argillite, Tom MacKay, Ketchum, and Eskay creeks and the Unuk River. Coulter and Harrymel creeks drain to the southwest of the Prout Plateau into the Unuk River and may receive seepage or effluent discharge into Coulter Creek.	• The RAA is the Unuk River Watershed upstream of the Canada-US Border, the Volcano Creek sub-watershed, and a portion of the Iskut River/Stikine River Watershed. The RAA includes the watercourses listed, their tributaries within the RAA boundary, and a riparian buffer around all waterbodies; • The RAA was chosen as a result of expressed interest in the Unuk River Watershed during Early Engagement and because it comprises the migratory fish distribution in the region; and, • The RAA provides regional context for the effects assessment and is based on the watersheds that delineate ecological boundaries.

Valued Component	Local Assessment Area	Regional Assessment Area
Terrain and Soils	• Terrain: ○ The LAA includes the areas that drain to the mine site and the existing Eskay Creek Mine Access Road plus the area located downslope from the mine site to the Unuk River; ○ The Terrain Stability Mapping (TSM) in the LAA surrounding the mine site and transmission line was completed at 1:10,000 scale in areas covered by LiDAR and 1:20,000 scale where LiDAR was unavailable; and, ○ The LAA also contains the Mine Site Study Area, which includes a 500 m buffer around the mine site wherein the TSM was conducted at 1:5,000 scale.	• The RAA was delineated to match the RAA for the Vegetation and Ecosystems/Wildlife and Wildlife Habitat given the considerable overlap between the disciplines; • Terrain and soil existing conditions studies provide site-specific information on the distribution and characteristics of landforms, parent materials, soils, and the interrelationships among these and other ecosystem components (e.g., vegetation distribution, wildlife habitat); and, • The terrain and soil features within the RAA directly influence wildlife habitat and therefore, the species that may come into contact with proposed Project infrastructure.
	• Soils: ○ The LAA is based on a buffer of 500 m around the boundary of the Project site; and, ○ The LAA was chosen to document soil conditions in and around the proposed development areas and to provide information to facilitate reclamation activities.	
Vegetation and Ecosystems/ Wildlife and Wildlife Habitat	• The LAA includes a buffer extending to the height of land or 1 to 1.5 km around the outer limits of the proposed infrastructure and linear developments (the exploration access road and the proposed mine site), whichever comes first; and, • The LAA surrounding the mine site and transmission line is based on the terrestrial ecosystem mapping (TEM) study area.	• The RAA was delineated to reflect the area anticipated to provide habitat for wildlife species that may come in contact with proposed Project infrastructure during the course of a season or lifetime; • Species information, including home range sizes, habitat use, and seasonal movement patterns, were considered when selecting the RAA boundary; and, • Other ecological factors, such as height of land (which can act as a barrier to movement), and watershed boundaries were also considered when delineating the RAA.
Human Health (Environmental Determinants)	• The LAA focuses on biophysical factors that can affect human health. The LAA encompasses the area where there is the highest potential for direct effects of the Project on ecological organisms used as traditional foods and humans through exposure to COPCs and noise. Transport pathways for COPCs from the project are primarily through air (e.g., through deposition of fugitive dust onto plants and soils) and water (through effluent discharge or seepage), and noise also has a direct effect on health. Therefore, the LAA is derived by combining the outermost boundaries of the LAAs for Air Quality, Surface Water, and Noise.	• The RAA is derived from the outermost boundaries of the RAAs for VCs that are factors in the environmental determinants of health: Air Quality, Noise, Surface Water, Groundwater, Fish and Fish Habitat, Vegetation and Ecosystems, and Wildlife and Wildlife Habitat, based on the rationales provided for these VCs.

Valued Component	Local Assessment Area	Regional Assessment Area
Social and Economic VCs (including Infrastructure and Services, Non-traditional Land and Resource Use, and Employment and Economy) / Human Health (Social Determinants)	• The LAA comprises of the Tahltan Territory within BC and a portion of the unincorporated Stikine Region, including the communities, villages, unincorporated towns, reserve lands, and other settlements within these areas; and, • The LAA is the area within which all or most Project effects are most likely to occur.	• The Social and Economic RAA comprises a discontinuous area in northwest BC (the outermost boundary of which is mapped) including the Tahltan Nation, other Indigenous nation groups, municipalities, the Regional District of Kitimat-Stikine, the Regional District of Bulkley Nechako, and unincorporated communities; • The Human Health (Social Determinants) RAA follows the Social and Economic RAA along the western, northern, and eastern extent. An additional area in the south, derived by combining the boundary of the Bulkley Nechako Regional District Electoral Area B and the Northwest Health Service Delivery Area, has been added in order to include the communities of Prince Rupert, Kitimat, Houston, and Burns Lake; and, • The RAAs includes areas where there could be possible interactions with other Projects.
Heritage Resources	• The LAA is based on a buffer of 1 km around the boundary of the Project site and around the existing access road that connects to Highway 37; • The LAA comprises the area where physical disturbances associated with the Project are expected to have the potential for direct impacts to heritage resources; and, • The LAA is used to identify known archaeological sites, traditional use sites, trails and paleontological sites located in close proximity to the Project.	• The RAA is a 90,000 ha square (30 km by 30 km) surrounding the Project site and a 10 km wide buffer around the existing access road that connects to Highway 37; and, • The RAA is designed to capture all of the Project components and include an area large enough to provide regional context for any heritage resources located within the LAA.
Current and Future Use of Land and Resources for Traditional Purposes / Quiet Enjoyment of Land	• The LAA consists of the LAAs for all VCs combined (i.e., using the outermost LAA boundary), excluding the Social and Economic LAA.	• The RAA consists of the RAAs for all VCs combined (i.e., using the outermost RAA boundary), excluding the Social and Economic RAA.

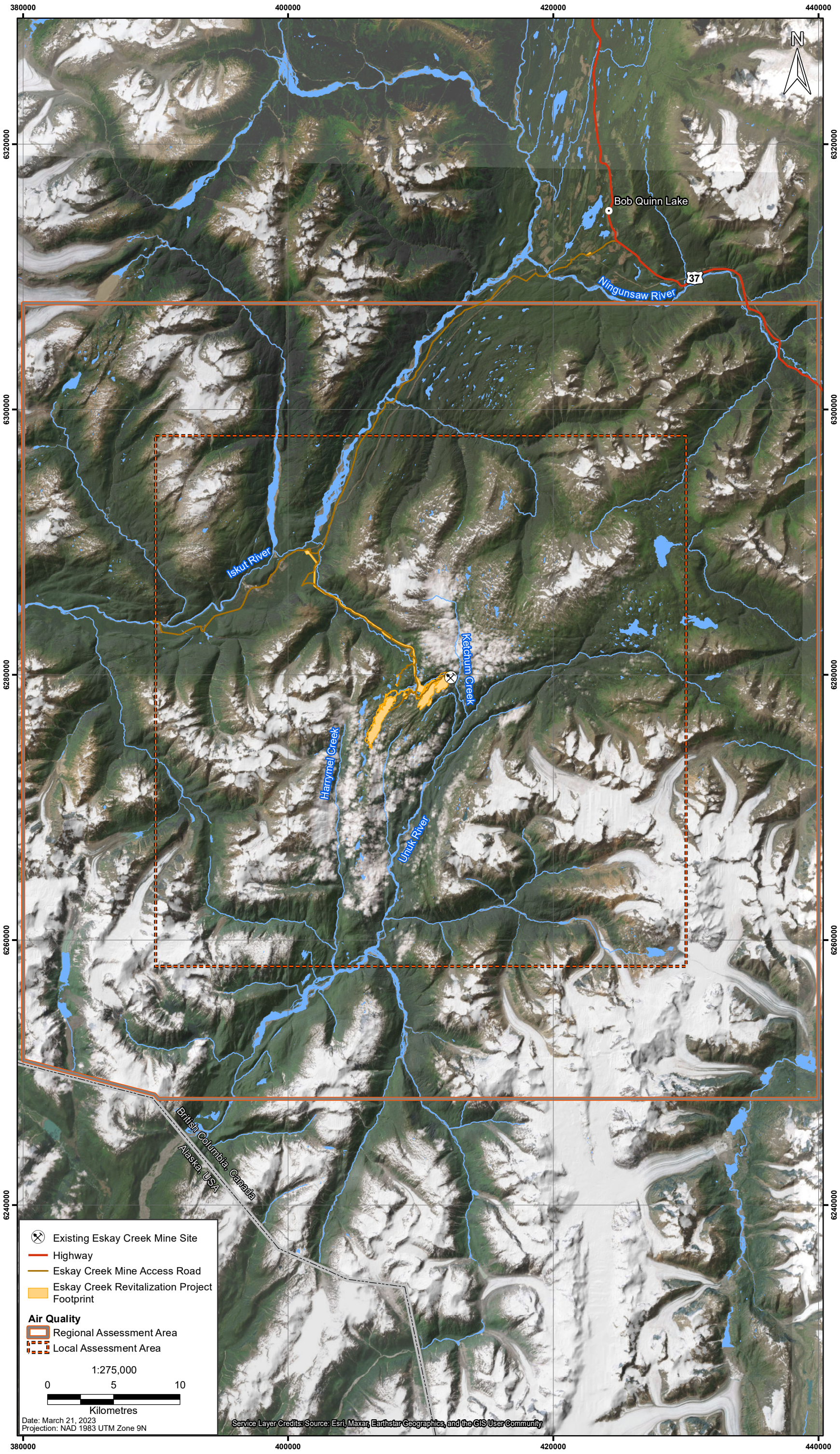


Figure A-1: Eskay Creek Revitalization Project Proposed Assessment Areas – Air Quality

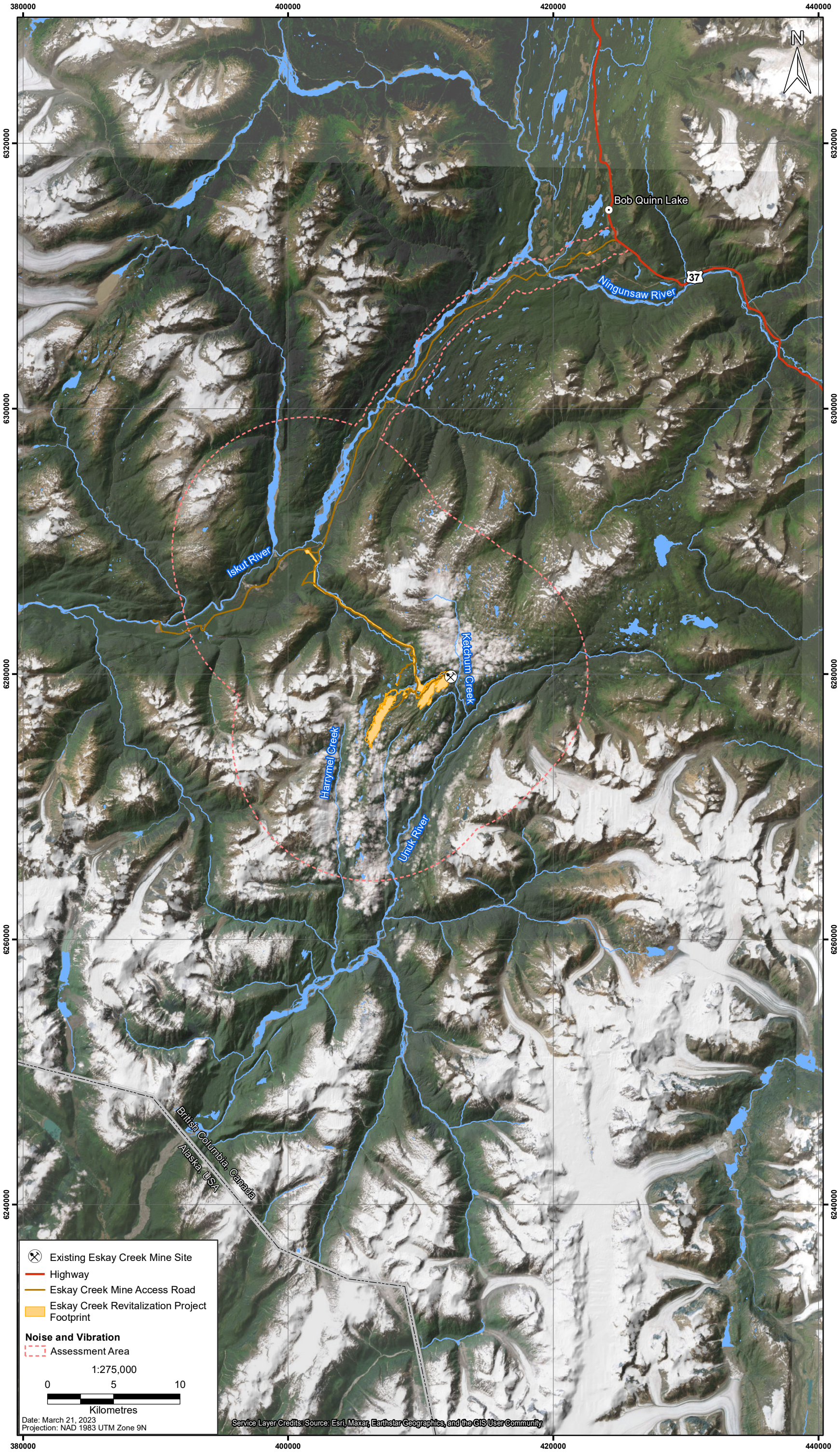


Figure A-2: Eskay Creek Revitalization Project Proposed Assessment Area – Noise and Vibration

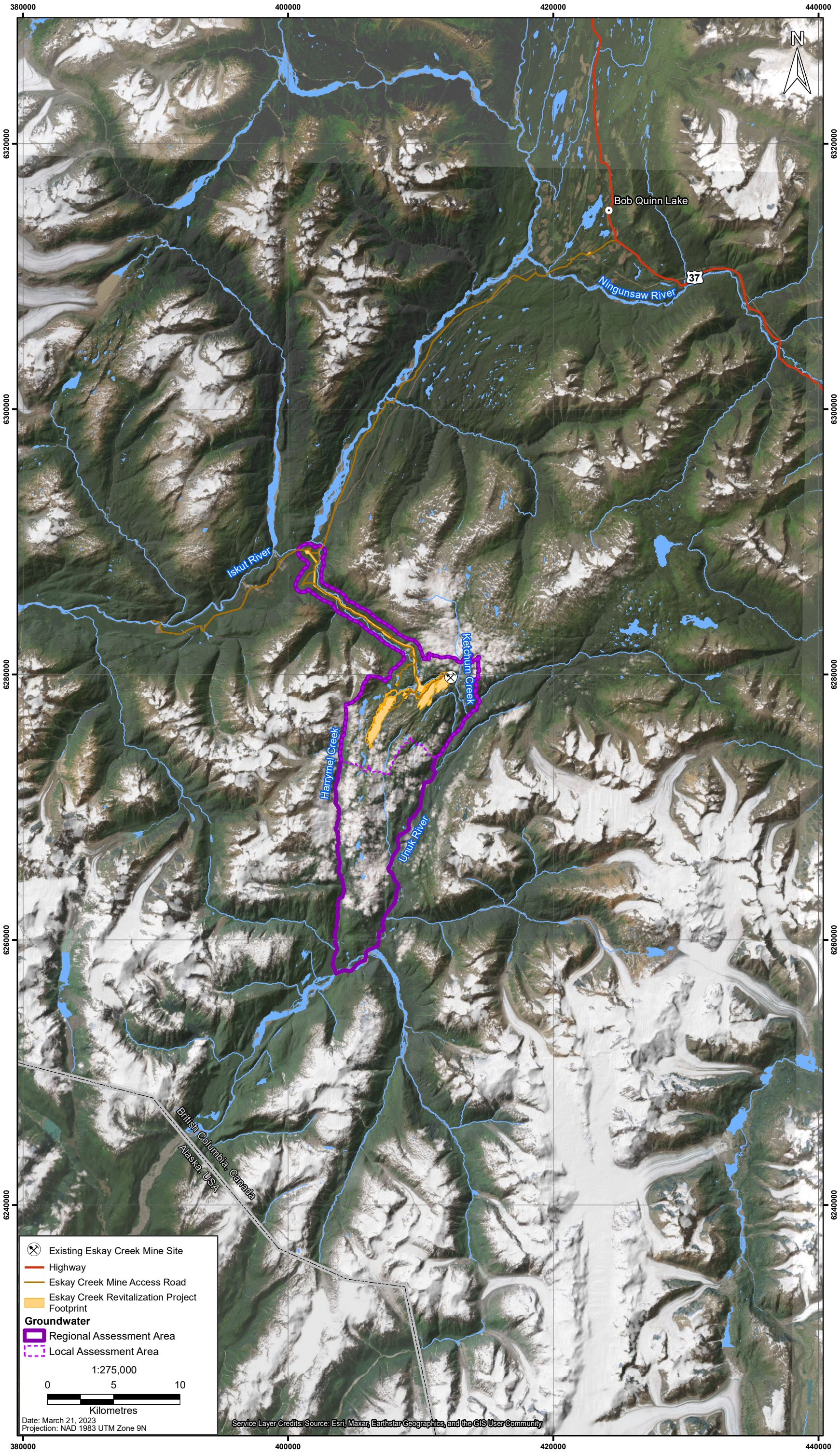


Figure A-3: Eskay Creek Revitalization Project Proposed Assessment Areas – Groundwater

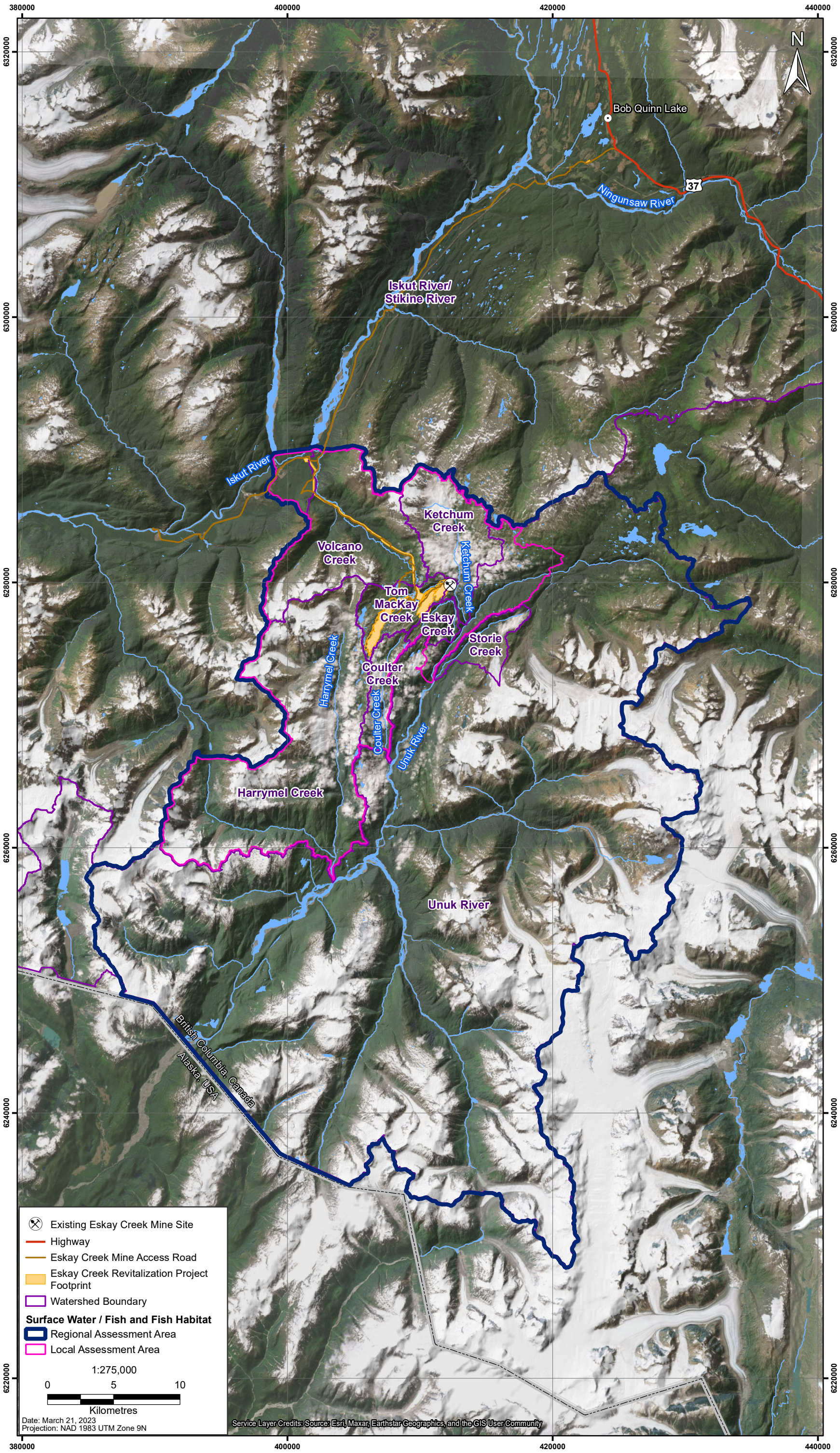


Figure A-4: Eskay Creek Revitalization Project Proposed Assessment Areas – Surface Water / Fish and Fish Habitat

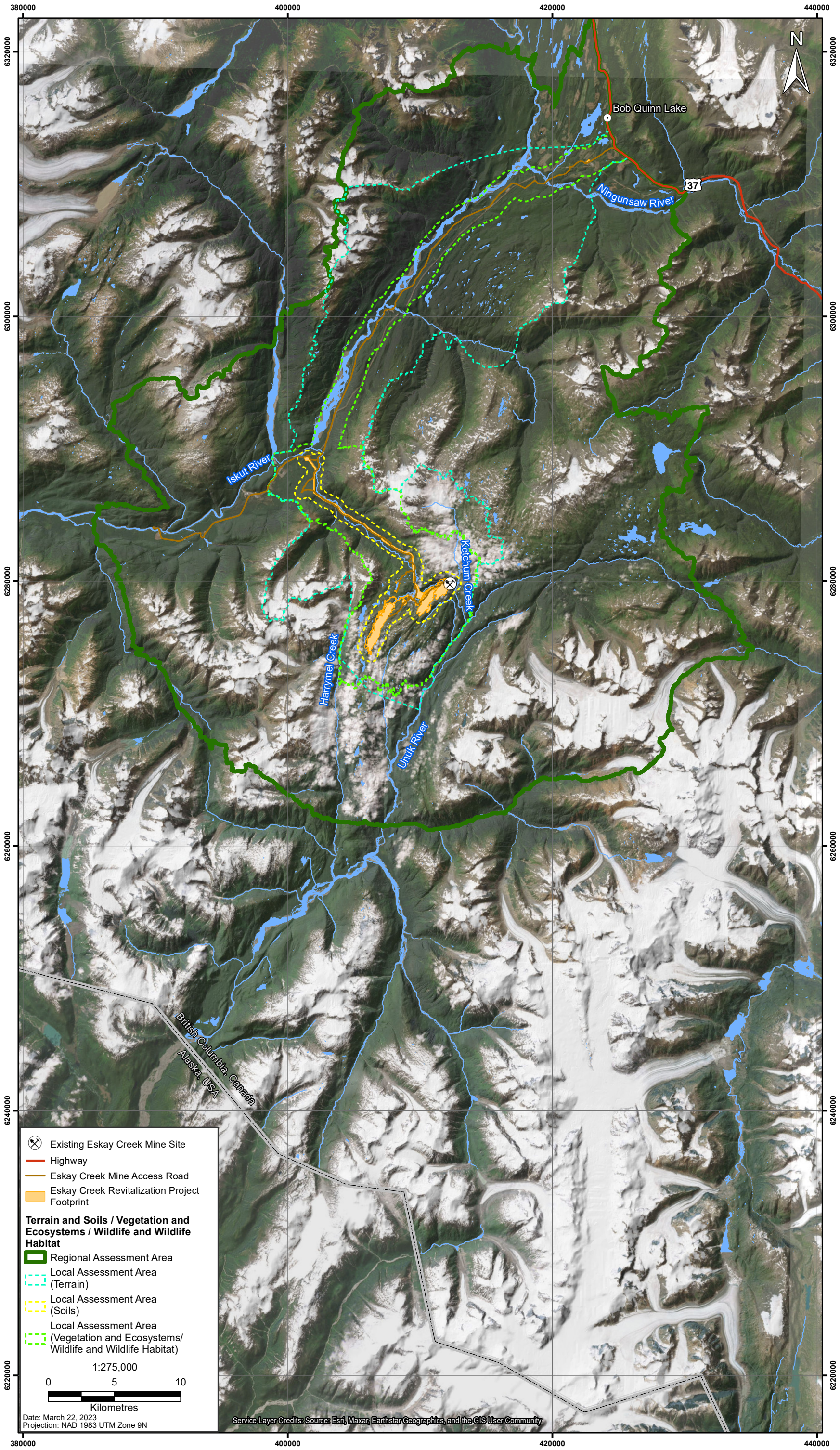


Figure A-5: Eskay Creek Revitalization Project Proposed Assessment Areas – Terrain and Soils / Vegetation and Ecosystems / Wildlife and Wildlife Habitat

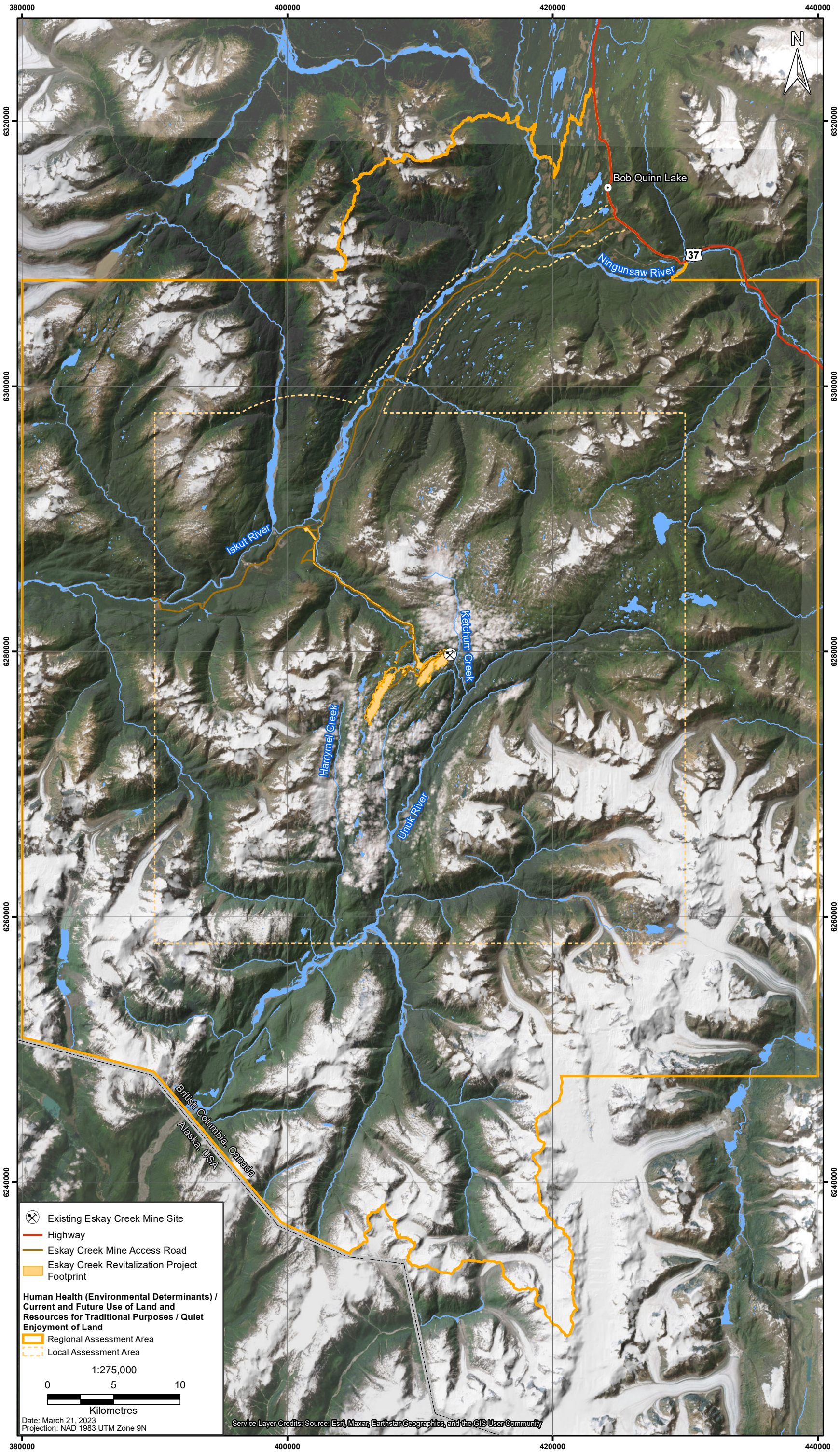


Figure A-6: Eskay Creek Revitalization Project Proposed Assessment Areas – Human Health (Environmental Determinants) / Current and Future Use of Lands and Resources for Traditional Purposes / Quiet Enjoyment of Land

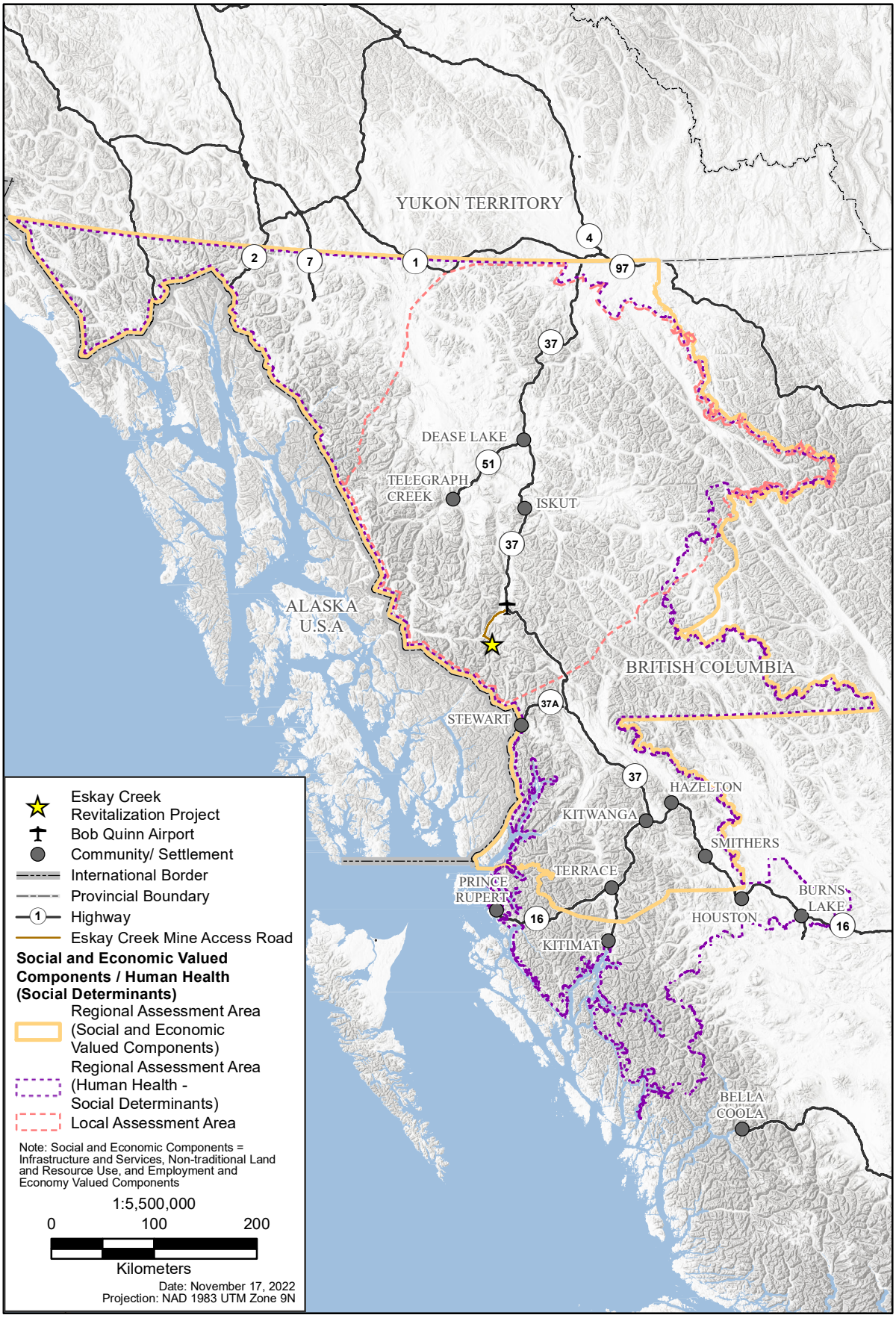


Figure A-7: Eskay Creek Revitalization Project Proposed Assessment Areas – Social and Economic Valued Components / Human Health (Social Determinants)

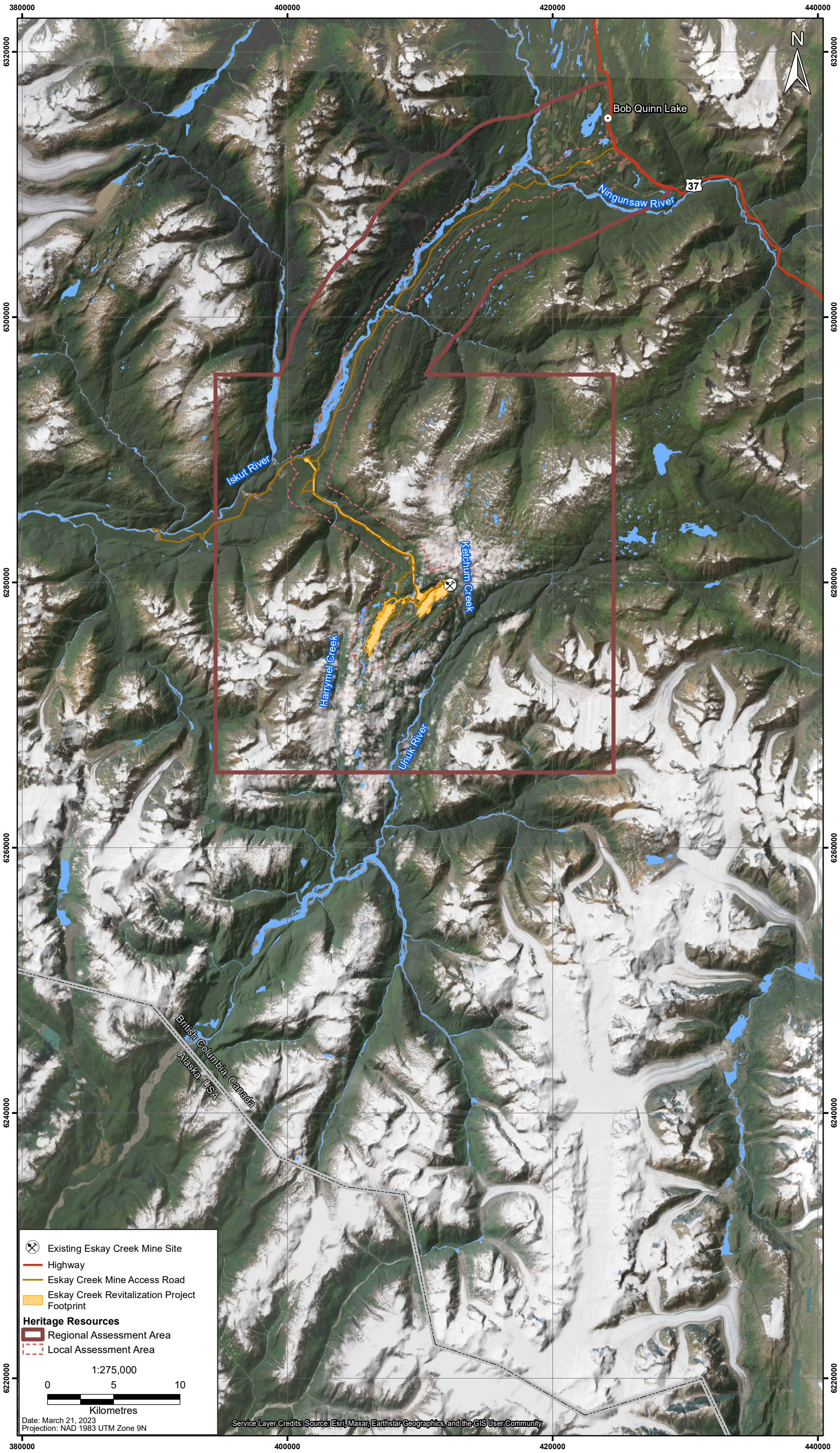


Figure A-8: Eskay Creek Revitalization Project Proposed Assessment Areas – Heritage Resources