

Application Information Requirements Guidelines

VERSION 1.0

APRIL 2020



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ABOUT THIS GUIDANCE

This document provides a template for draft Application Information Requirements (AIR). Text that appears in *[square brackets and italics]*, is to be filled in and customized for the project. Instructions that are not to appear in the actual draft AIR appear in text boxes such as this.

TABLE OF CONCORDANCE

A Table of Concordance must be included in the Application. The Table of Concordance must demonstrate where the information requirements are found in the Application, with volume and section in the format of Table 1.

AIR Section & Page No.	AIR Title	AIR Section Language	Application Section Title	Application Volume, Section (or Sub-Section),	Relevant Appendix
Section 7.12 Pages 22 to 29	Freshwater Fish Assessment Boundaries	The Application must define assessment boundaries for the freshwater fish VC, including spatial, temporal, and administrative and technical boundaries.	Freshwater Fish Assessment Boundaries	Volume 2 Section 4.2.2	Volume 6 Appendix K

Table 1. Table of Concordance between AIR and Application

ABBREVIATIONS AND ACRONYMS

The Application must include a list of all acronyms and abbreviations used and their definitions. This list will likely be an expanded version of the list below, which consists of terms that appear in this document.

Act – The 2018 *Environmental Assessment Act*

AIR – Application Information Requirements

Application – An Application for an Environmental Assessment Certificate

BEC – Biogeoclimatic Ecosystem Classification

CDC – Conservation Data Centre

CO – Carbon Monoxide

COSEWIC – Committee on the Status of Endangered Wildlife in Canada

EA – Environmental Assessment

EAC – Environmental Assessment Certificate

EAO – Environmental Assessment Office

GHG – Greenhouse Gas

HHRA – Human Health Risk Assessment

H₂S – Hydrogen Sulphide

LAA – Local Assessment Area

NAD 83 – North American Datum of 1983

NO_x – Nitrogen Oxides

PM_{2.5} – Fine particulates smaller than 2.5 microns

PM₁₀ – Respirable particulates of less than 10 microns

RAA – Regional Assessment Area

SARA – Species at Risk Act

SO_x – Sulphur Oxides

VOCs – Volatile organic compounds

VC – Valued Component

[Abbreviation/Acronym – Full Text]

APPLICATION SUMMARY

The purpose of the Application summary is to give the public/readers an overview of the project, issues and mitigation approaches. Length should generally be kept to 20 to 30 pages. The summary should be written in plain language.

The Application must include a 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 nations, the public, local governments¹, provincial and federal government agencies and stakeholders;
- A summary of the key issues raised by Indigenous 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
- A summary of key effects on Indigenous nations and their rights, and proposed mitigation measures.

¹ Local governments include 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;
- 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.

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;
- Provide contact information for proponent representatives for the project (for example, name, address, phone, email); and
- Identify the main contractor/company responsible for the preparation of the Application. Refer to [Appendix 17.3](#) that identifies key personnel responsible for preparing the Application including their qualifications.

1.3. Project Location

Information that has been identified as confidential by Indigenous nations or the public should not be shown on maps or described in text in such a way that compromises its confidentiality. Refer to the Guide to Indigenous Knowledge in Environmental Assessments found [here](#) for information on Indigenous knowledge consent, policies and protocols.

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 (for centralized projects) and endpoints (for linear projects);
- Project access route and transportation corridors;
- Environmentally sensitive areas, such as national, provincial and regional parks, ecological reserves, marine protected areas, marine refuges, ecologically and biologically sensitive areas, wildlife habitat areas, old growth management areas, ungulate winter ranges, wetlands, estuaries, habitats of federally or provincially listed species at risk and other identified sensitive areas;
- Local and Indigenous communities, including distances to these communities;
- Distance to the international or provincial border (for example, Alberta, the Northwest Territories, the Yukon, or the United States) if the potential for effects to cross a border is identified;
- Indigenous traditional territories and/or consultation areas, Treaty and/or Title lands, and Reserve lands; and

- Summary of culturally and locally important features of the landscape.

The following information must be included on maps:

- On- and off-site project components;
- Indigenous traditional territories and/or consultation areas, Treaty and/or Title lands, and Reserve lands;
- Local and Indigenous communities;
- International, provincial and territorial boundaries, where applicable;
- Parks and protected areas; and
- Legally protected wildlife habitat.

A scale should be selected for each map which allows the information to be presented clearly and legibly when printed on 8.5 x 11 or 11 x 17-inch paper.

Map must include NTS Maps number, latitude and longitude references, titles, a north arrow, and relevant legends.

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 Area (LAA)s and Regional Assessment Areas (RAA)s for each VC.

Shapefiles must meet the following specifications:

- ESRI format and include four file types: .shp, .shx, .dbf, and .prj;
- B.C. Albers North American Datum of 1983 (NAD 83) projection;
- Shapefile polygons and their corresponding polygons on all maps must be identical in shape, extent, and location;
- All spatial features (.shp and .shx) must be represented as polygons, not as points or line features;
- Files named in a way that clearly describes the contents;
- Where different VCs have the same assessment boundaries, indicate this and provide only one set of shapefiles (for example, do not provide separate shapefiles for the soil and vegetation LAA if they are identical); and
- To avoid having ArcGIS generate random errors, follow these best practices:
 - Avoid starting names by number;
 - Add an underscore instead of a space or dash; and
 - Do not include a symbol outside of the underscore.

1.4. Project Components

The Application must provide a description of the project components determined to be within the scope of the project in the Process Order, including both on- and off-site facilities and associated activities.

If applicable, the Application must describe how existing infrastructure will be used for the project.

1.5. Project Activities

The Application must provide a description of the applicable construction, operations, closure, post-closure and decommissioning phases of the project, including their duration and proposed scheduling. Proposed scheduling should identify the time of year, frequency and duration for key project activities. Any overlapping phases should be described. Please note that the description of decommissioning is not required where it is explicitly excluded by the [Reviewable Projects Regulation](#).

If applicable, the Application should 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 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.

1.6. Workforce Requirements

The Application must describe the anticipated labour requirements, employee programs and policies (if available), and workforce development opportunities for the designated 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 and education levels required for the positions, and working conditions;
- Investment in training opportunities;
- Expected workforce requirements based on the National Occupational Classification (NOC) system and timelines for employment opportunities;
- Anticipated work rotation schedules and means to get employees to the project site (for example, fly-in/fly-out, bus);
- Anticipated housing arrangements for the workforce for each project phase;
- Anticipated hiring policies including hiring programs;
- Workplace policies and programs for Indigenous employment and employment of underrepresented groups;
- Employee assistance programs and benefits including career planning, employee counselling, family support, transition planning, pension plan and group insurance benefit plans; and
- Workplace policies and programs including codes of conduct, workplace safety programs and cultural training and awareness programs.

1.7. 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, and the potential 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 Application must:

- Describe all alternative means considered;
- Describe the methods and criteria used to determine the technical and economic feasibility of the alternative means;
- Identify alternative means that are technically and economically feasible;
- Describe the methods and criteria for comparing the alternative means that are technically and economically feasible and identify the preferred means. Criteria must include consideration of the following factors and may also include economic, logistic or other factors relevant to the comparison:
 - Environmental, economic, social, cultural and health effects;
 - Effects to Indigenous interests;
 - Effects on greenhouse gas (GHG) emissions; and
 - Risks and uncertainties;
- Identify the potential effects, risk and uncertainties of each technically and economically alternative means;

- Identify the preferred means of carrying out the project;
- Discuss how the best available technologies have been considered in identifying the preferred means; and
- Summarize the potential effects, risks and uncertainties of the preferred means and how these are addressed (refer to other parts of the Application where applicable for more detail).

Further guidance on considering alternative means of carrying out the project is available in the Effects Assessment Policy, found [here](#).

Note that if a proponent requests alternative options to be allowed in their Environmental Assessment Certificate (EAC) (for example, multiple transmission line or transportation routes where one will eventually be selected), each alternative must be assessed in the Environmental Assessment (EA).

2.0 REGULATORY FRAMEWORK

2.1. Environmental Assessment Process

The Application must identify where the project has met 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. It must also state if there is a federal review and whether it is coordinated or substituted with the provincial assessment and whether there is an Indigenous-led assessment. Provide a reference to the Assessment Plan which provides details of the process.

2.2. Relevant Policies, Initiatives and Assessments

The Application must:

- Identify government policies, study initiatives, and regional and strategic assessments relevant to the project and/or EA and their implications.

2.3. Land and Marine Use Plans

The Application must summarize any land and/or marine use plans of a government (municipal, provincial, federal, or an Indigenous nation) that may be relevant to the project area including whether the project is consistent with the identified plans.

2.4. Indigenous Nation Arrangements

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

- Any applicable Indigenous nation arrangements between federal or provincial governments and Indigenous nations that are pertinent to the project and/or EA (for example, any treaty, self-government, land claims); and
- Any agreements between the proponent and Indigenous nations applicable to the assessment of the project.

2.5. Permitting

The Application must provide an update to the information provided on permitting in the Detailed Project Description, which must:

- Describe existing licenses, permits, approvals or tenures and the date received; and
- Describe anticipated authorizations and permits, their expected submission dates and an indication of whether they would be submitted during the EA.

3.0 PUBLIC ENGAGEMENT

The Application must describe the proponent's ongoing and proposed public and stakeholder engagement activities regarding the project and during the development of the Application. The proponent's public and stakeholder engagement strategy will be informed in part by the Assessment Plan issued by the Environmental Assessment Office (EAO). The Application must describe whether the engagement is consistent with the requirements in the Assessment Plan, and if not, provide a rationale.

The Application must describe the efforts made to distribute project information and the information and materials that were distributed during the proponent's engagement in Early Engagement, Process Planning and Application development. Indicate the methods used, where the consultation was held, the number of people, organizations and groups consulted, the views expressed and the extent to which this information was incorporated in the design of the project as well as in the Application.

The Application must provide a summary of key issues related to the project, which were 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 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 the public and stakeholder concerns that were not addressed, if any, and provide reasons why the concerns were not addressed.

The Application must also provide details regarding how the public and stakeholders will be kept involved during all phases of the project, if the project is approved and proceeds.

4.0 LOCAL GOVERNMENT ENGAGEMENT

The Application must describe the proponent's ongoing and proposed local government engagement activities regarding the project and during the development of the Application. The proponent's engagement strategy will be informed in part by the Assessment Plan issued by the EAO. The Application must describe whether the engagement is consistent with the requirements in the Assessment Plan, and if not, provide a rationale.

The Application must describe the efforts made to distribute project information and the information and materials that were distributed during the consultation process. Indicate the methods used, where the consultation 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.

The Application must provide a summary of key issues related to the project, which were raised through engagement with local government and the potential environmental, economic, social, cultural and health effects, including disproportionate effects on distinct human populations 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.

The Application must also provide details regarding how local governments will be kept involved during all phases of the project, if the project is approved and proceeds.

5.0 VALUED COMPONENTS SELECTION

The Application must provide a list of the VCs considered in the Effects Assessment.

The following is a standard list of Valued Components (VCs) and subcomponents to be used as a starting point for the assessment of the project. Refer to the Effects Assessment Policy found [here](#) for guidance on the identification and selection of VCs. The proponent may propose changes to the standard list of VCs and subcomponents with supporting rationale during Early Engagement to ensure that the VCs are relevant to their specific project and capture the appropriate topics for assessment, including Indigenous interests and Indigenous requested VCs and subcomponents. In identifying VCs to be assessed, it is important to consider potential interactions between the project and the biophysical and human environment, as well as the potential for overarching effects of the project on biophysical factors that support ecosystem function and human environment factors that support community well-being. Taken together, the VCs should provide an understanding of the potential effects of the project on the biophysical environment and overall community well-being including Indigenous interests.

The EAO will confirm the VCs during Process Planning through engagement with the proponent, members of the Technical Advisory Committee and Community Advisory Committee, and a consensus-based process with

Valued Components	Subcomponents	Topics to be Captured by the Assessment	Anticipated Linkages to other Valued Components or Sections
Air Quality	Air quality	<ul style="list-style-type: none"> Criteria Air Contaminants Volatile Organic Compounds (VOCs) Other air pollutants 	Human Health Vegetation Water Quality
	Acidifying emissions Eutrophying emissions	<ul style="list-style-type: none"> Acidification and eutrophication 	Summary of Biophysical Factors that Support Ecosystem Function
	n/a	<ul style="list-style-type: none"> Odour 	
Acoustic	Noise	<ul style="list-style-type: none"> Audible noise levels Low-frequency noise levels 	Human Health Wildlife
	Vibration	<ul style="list-style-type: none"> Vibration 	Land and Resource Use Summary of Biophysical Factors that Support Ecosystem Function
Surface Water	Surface water quality	<ul style="list-style-type: none"> Acidification and eutrophication Metals Acid Rock Drainage Nutrients Sedimentation 	Freshwater Fish Human Health Wildlife Summary of Biophysical Factors that Support Ecosystem Function
	Surface water quantity (Hydrology)	<ul style="list-style-type: none"> In-stream flow Runoff dynamics and pattern 	
Groundwater	Groundwater quality	<ul style="list-style-type: none"> Groundwater contamination (drilling fluids, seepage, acid mine drainage) 	Surface Water Human Health
	Groundwater quantity	<ul style="list-style-type: none"> Groundwater quantity Interactions with surface water 	Vegetation Summary of Biophysical Factors that Support Ecosystem Function
Marine Water and Sediment Quality	Marine Water Quality	<ul style="list-style-type: none"> Contaminants Contaminants Nutrients Total Suspended Solids Turbidity 	Marine Resources Human Health Summary of Biophysical Factors that Support Ecosystem Function
	Marine Sediment Quality	<ul style="list-style-type: none"> Sediment disturbance Sediment quality 	

Valued Components	Subcomponents	Topics to be Captured by the Assessment	Anticipated Linkages to other Valued Components or Sections
Soil	Soil quality	<ul style="list-style-type: none"> • Acidification • Eutrophication • Contamination • Erosion • Dust accumulation 	Vegetation Human Health Summary of Biophysical Factors that Support Ecosystem Function
	Soil quantity	<ul style="list-style-type: none"> • Soil disturbance • Soil alteration and removal 	
Unique Geologic Landforms		<ul style="list-style-type: none"> • Areal extent or condition of unique geological landforms <ul style="list-style-type: none"> ◦ Examples include: Karst, Sand dunes, Lava beds, Caves, cliffs, rocky outcrops, talus slopes, hot springs 	Land and Resource Use Biophysical Factors that Support Ecosystem Function
Vegetation	Plant species of interest	<ul style="list-style-type: none"> • Rare plants • Traditional use species • Species of conservation concern • Invasive species 	Land and Resource Use Wildlife Summary of Biophysical Factors that Support Ecosystem Function
	Plant communities of interest	<ul style="list-style-type: none"> • Ecological communities of conservation concern 	
	Wetland functions	<ul style="list-style-type: none"> • Wetland ecosystems 	
	Ecosystems	<ul style="list-style-type: none"> • Old forest • Grasslands • Alpine/subalpine • Riparian 	
Wildlife	Birds (including individual species or species groups as appropriate)	<ul style="list-style-type: none"> • Species at risk • Traditional use species • Migratory birds • Habitat (including sensory disturbance / zone of influence as appropriate) 	Land and Resource Use Human Health Summary of Biophysical Factors that Support Ecosystem Function
	Mammals (including individual species or species groups as appropriate)		

Valued Components	Subcomponents	Topics to be Captured by the Assessment	Anticipated Linkages to other Valued Components or Sections
	Reptiles and Amphibians (including individual species or species groups as appropriate)	<ul style="list-style-type: none"> • Important habitat features (for example, protected nests; leks, breeding sites, mineral licks; roosts; dens) • Mortality • Movement • Health 	
Freshwater Fish	Fish habitat	<ul style="list-style-type: none"> • Riparian ecosystems • In-stream flow 	Human Health Land and Resource Use Summary of Biophysical Factors that Support Ecosystem Function
	Aquatic resources	<ul style="list-style-type: none"> • Benthic invertebrates • Periphyton • Bioaccumulation 	
	Fish	<ul style="list-style-type: none"> • Fish tissue • Fish communities • Species at risk • Traditional use species • Other aquatic species of management concern 	
Marine Resources	Fish habitat	<ul style="list-style-type: none"> • Eelgrass • Kelp • Marine plants 	Marine Use Human Health Summary of Biophysical Factors that Support Ecosystem Function
	Marine mammals	<ul style="list-style-type: none"> • Species at risk • Underwater noise 	
	Fish	<ul style="list-style-type: none"> • Underwater noise • Species at risk • Other species of management concern • Traditional use species 	
	Marine Invertebrates	<ul style="list-style-type: none"> • Species at risk • Other species of management concern • Traditional use species 	
Employment and Economy	Employment	<ul style="list-style-type: none"> • Jobs and training • Labour income • Access to economic opportunities / economic equity 	Land and Resource Use Marine Use

Valued Components	Subcomponents	Topics to be Captured by the Assessment	Anticipated Linkages to other Valued Components or Sections
	Economy	<ul style="list-style-type: none"> • Tax revenues and government expenditures • GDP contributions • Business revenue • Land and resource valuations (including tourism) • Cost of living (for example, housing, food, goods and services) 	Summary of Human and Community Well-being
Land and Resource Use	Private property	<ul style="list-style-type: none"> • Use and enjoyment of private property 	Air Quality Acoustic Vegetation Wildlife Freshwater Fish Unique Geologic Landforms Summary of Human and Community Well-being
	Tenured land and resource use	<ul style="list-style-type: none"> • Industrial land uses (for example, mining, oil and gas) • Other tenured, permitted or licensed land uses 	
	Public land and resource use	<ul style="list-style-type: none"> • Consumptive land uses (for example, hunting, fishing, trapping, vegetation gathering) • Non-consumptive land uses (for example, camping, hiking, skiing, boating, climbing, caving) • Agriculture • Tourism 	
	Parks and protected areas	<ul style="list-style-type: none"> • Federal, provincial, regional, municipal parks • Other protected areas • Recreation Sites and Trails B.C. areas 	
	Visual resources	<ul style="list-style-type: none"> • Visual resources 	
Marine Use	Navigation	<ul style="list-style-type: none"> • Marine navigation 	Marine Resources Summary of Human and Community Wellbeing
	Tenured marine use	<ul style="list-style-type: none"> • Tenured, permitted or licensed marine uses (for example, aquaculture, moorage, commercial fishing) 	
	Public marine use	<ul style="list-style-type: none"> • Consumptive marine uses (for example, hunting, fishing, vegetation gathering) • Non-consumptive marine uses (for example, boating, kayaking) • Tourism 	
	Marine protected areas	<ul style="list-style-type: none"> • Marine protected areas 	
	Visual resources	<ul style="list-style-type: none"> • Visual resources 	

Valued Components	Subcomponents	Topics to be Captured by the Assessment	Anticipated Linkages to other Valued Components or Sections
Infrastructure and Services	Community infrastructure and services	<ul style="list-style-type: none"> • Health care and social services and facilities • Emergency response services • Domestic water supply • Sewage and water treatment facilities • Landfills and recycling facilities • Community recreational facilities • Educational services and facilities, including day care • Other public and private sector services 	Employment and Economy Human Health Summary of Human and Community Wellbeing
	Transportation infrastructure	<ul style="list-style-type: none"> • Transportation infrastructure 	
	Housing and accommodation	<ul style="list-style-type: none"> • Housing and accommodation 	
Human Health		<ul style="list-style-type: none"> • Air quality • Drinking water quality • Noise • Soil quality • Quality and quantity of country foods • Population health¹ 	Air Quality Acoustic Surface Water Groundwater Marine Resources Soil Vegetation Employment and Economy Infrastructure and Services Land and Resource Use Marine Use Culture Summary of Human and Community Wellbeing
Archaeological and Heritage Resources ²		<ul style="list-style-type: none"> • Sites of historical importance • Sites of archaeological importance (including CMTs) • Paleontological resources 	Land and Resource Use Marine Use Culture Summary of Human and Community Wellbeing

Valued Components	Subcomponents	Topics to be Captured by the Assessment	Anticipated Linkages to other Valued Components or Sections
Culture ³		<ul style="list-style-type: none"> • Governance and stewardship systems • Customs, beliefs and values • Language and intergenerational knowledge transfer • Community and cultural cohesion 	Summary of Human and Community Wellbeing
Indigenous nation identified VC ⁴		<ul style="list-style-type: none"> • Specific to an Indigenous nation's interests 	Other related VCs depending on VC Indigenous nation specific assessment
<p>Notes:</p> <p>¹ Population health includes an integrated analysis of the social, economic and cultural determinants of health that may be captured under other VCs (for example, Employment and Economy, Infrastructure and Services, and Culture) and which would then support the characterization of receptors for a human health risk assessment.</p> <p>² Includes intangible values related to these sites and resources as applicable.</p> <p>³ Effects related to Indigenous culture may be better addressed under Section 11 (Effects on Indigenous nations) with individual consideration for each nation, depending on the scale of the project, potential effects, and concerns identified by nations.</p> <p>⁴ It is expected that many Indigenous interests can be captured by the standard VC list. In cases where an Indigenous interest is identified that is not able to be represented by a standard VC and it is conducive to assessment via the VC framework it may be appropriate to identify a new Indigenous specific VC.</p>			

Table 2. Potential Valued Components and Subcomponents for Assessment

6.0 VALUED COMPONENT ASSESSMENT METHODS

The Application must describe the methods used to assess the potential effects of the project. The Application must describe how scientific, Indigenous, and local knowledge was used in the assessment. For Indigenous knowledge, the Application must outline how the Indigenous knowledge was used in alignment with the Indigenous 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 Indigenous knowledge has been appropriately characterized within the Application.

The Effects Assessment Policy found [here](#) provides guidance on the assessment matters identified in [Section 25](#) of the [Environmental Assessment Act](#) (2018) (Act) which must be considered in every EA. The policy provides the typical steps for evaluating effects using a valued component (VC) framework. Other frameworks may be used for some topics that are not conducive to assessment under the VC framework to ensure effective and efficient consideration of all topics relevant in a project's EA. This may include alternative assessment frameworks identified by a participating Indigenous nation for assessments carried out under [Section 19\(4\)](#) of the Act.

[Section 2\(2\)](#) of the Act requires the EAO to use the best available science, Indigenous knowledge, and local knowledge in decision making under the Act.

Refer [here](#) to the Guide to Indigenous Knowledge in Environmental Assessments for further information on Indigenous knowledge consent, policies and protocols.

6.1. Relevant Statutes, Policies and Frameworks

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

6.2. Assessment Boundaries

The Application must describe the spatial, temporal, administrative, and technical boundaries of each VC (or subcomponent) to be used in assessing the potential effects. The Application must also describe the methods used to identify the boundaries and provide a rationale for each boundary. Information on boundaries for each VC (or subcomponent) must be included in the appropriate VC sections of the Application, and must encompass all relevant project phases, components, and activities. Transboundary spatial boundaries must be identified where transboundary effects are expected outside of the Province of British Columbia's or Government of Canada's jurisdiction. The spatial boundary maps for VCs (or subcomponents) must clearly identify parts of the project footprint located on lands and waters that lie within federal jurisdiction or treaty lands.

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

- *[List spatial boundaries (for example, project footprint, LAA, RAA and cumulative effects assessment area) and describe the extent of each boundary.]*

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

- *[List the temporal limits of the project (for example, construction, operation, decommissioning) and describe the duration and activities of each phase.]*
- *[Where relevant, VC-specific temporal boundaries that reflect how long the VC will experience effects should be described.]*

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.

6.3. Existing Conditions

For each VC (or subcomponent), the Application must describe the existing conditions (for example, “baseline”) within the study areas in enough detail to enable potential project-VC interactions to be identified, understood and assessed. This description may include the characteristics of the VC (or subcomponent) 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 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 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 (for example, climate change);
- An explanation of if and how other past and present projects and activities in the study area have affected, or are affecting, each VC;
- Documentation of the methods and information sources used to compile information on existing (or baseline) conditions, including any standards or guidelines followed;
- Where additional project- and VC-specific field studies are undertaken, the scope and methods used should 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; and
- Description of local and Indigenous knowledge used in the assessment.

The Application may provide technical reports that present the existing conditions data in Appendices and summarize the key findings of these technical reports directly in the Application. Regardless of the approach, 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 subcomponent).

To describe climate impacts on VCs, climate projections based on climate models are required for some VCs. The level of information available will differ based on the region the project is in and the length of project effects.

6.4. Potential Effects

The Application must describe the potential positive and negative direct and indirect effects for each phase of the project. The Application will summarize the methods used to identify and assess the potential effects of the project on the identified VCs and subcomponents, including the results of any interaction between effects (to one VC 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 subcomponent). 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 matrix is a useful tool for demonstrating potential interactions and key potential interactions. Diagrams and tables are useful tools to illustrate complex direct and indirect potential effect pathways and interactions between potential effects that may involve multiple VCs or subcomponents. Refer to the Effects Assessment Policy for examples of both, found [here](#).

6.5. Effects Management

For each VC section, the Application must:

- Apply the mitigation hierarchy of avoid, minimize, restore on-site and offset;
- 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;
- Describe any standard mitigation to be implemented, including consideration of best management practices, environmental management plans, environmental protection plans, contingency plans, emergency response plans and other general practices;
- Describe the approach used to identify and select additional mitigation measures to be implemented to address potential adverse effects (including any offset plans);
- Describe measures that are specific to each identified effect and clearly indicate how the mitigation measures will reduce the potential adverse effects or enhancement measures will 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);
- Describe how disproportionate effects to distinct human populations were used to inform mitigation and enhancement measures;
- 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;
- 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; and

- Assess any potentially negative effects associated with the mitigation method itself.

For projects that propose offsetting, the Application must provide offsetting or compensation plans following the *Procedures for Mitigating Impacts on Environmental Values (Environmental Mitigation Procedures)* (Ministry of Environment 2014b or as updated) which:

- Describe the existing conditions;
- Describe mitigation measures;
- Identify and describe residual effects;
- Describe the proposed offsetting and provide a rationale;
- Describe how the proposed offsetting aligns with published recovery, management, or action plans and strategies;
- Identify the location and timing of implementation of offsetting;
- Describe the success criteria; and
- Identify the parties responsible for implementation, including monitoring and reporting.

6.6. Assessing Positive Effects

Potential positive effects may be directly related to the project or may be identified after considering the consequences of technically and economically feasible mitigation measures that maximize a wider range of benefits. Proponents are encouraged to look for opportunities to create positive effects and practically extend the scope or extent of project-specific mitigation, restoration, and enhancement measures to produce net project benefits. Where appropriate, information regarding potential positive effects on human and community well-being should be presented by sex, age and other community relevant identity factors to identify disproportionate potential effects for diverse subgroups.

The Application must:

- Identify and assess predicted positive 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.

6.7. 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:

- Describe the analytical methods used to assess the negative effect, including modelling approaches;

- Identify assumptions used in analytical methods;
- 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); and
- Describe in qualitative terms the nature and degree of uncertainty or conservatism related to the data, modelling and methods used for the analysis. Describe the effectiveness of mitigation measures and proposed adaptive management measures and describe the prediction 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 will be assessed and additional studies, mitigation or contingency plans may be required.

Where appropriate, information regarding potential effects on the human environment should 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 should be described quantitatively using these criteria. Where a quantitative description is not possible, effects should 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.

6.8. Characterization of Residual Effects

For negative residual effects, the Application must:

- Provide a detailed characterization of residual effects following the implementation of mitigation measures;
- For every residual effect, the context needs to be fully described 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;
- For every residual effect use the following criteria in characterizing residual effects:
 - Magnitude;
 - Extent;
 - Duration;
 - Reversibility;
 - Frequency;
 - Affected populations; and

- Risk and uncertainty;
- Where applicable, consider importance in characterizing residual effects;
- Define the criteria/terms used to characterize the residual effects; and
- Describe the likelihood of whether a residual effect is likely to occur using appropriate quantitative or qualitative terms and enough description to understand how the conclusions were reached.

6.9. Cumulative Effects Assessment

The Application must:

- Identify and provide a rationale for the VCs that will be the focus of the cumulative effects assessment;
- Provide a rationale to justify the exclusion of other VCs from the cumulative effects assessment, as applicable;
- Identify and justify the spatial and temporal boundaries for the cumulative effects assessment for each VC selected;
- 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;
- 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 the current and future conditions. 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 provide a rationale to justify the exclusion of climate change impacts on the VC;
- 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;
 - An assessment of the effectiveness of the measures and adaptive management measures applied to mitigate the cumulative effects; and
 - In cases where measures to mitigate these effects are beyond the control of the proponent, what parties have authority to act on the measures and commitments made by the other parties regarding the implementation of the measures and any associated plans;
- Quantify, where appropriate, and evaluate residual cumulative effects using the characterization of residual effects described above.

6.10. Follow-up Strategy

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

- Identifies the measures to ensure that mitigation measures are implemented as planned and evaluates the accuracy of the predicted effects;
- Identifies the measures to 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 a mechanism to disseminate follow-up results among interested parties; and
- 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.

7.0 VALUED COMPONENTS EFFECTS ASSESSMENT

7.1. Environmental and Community Context

This section provides a landscape-level overview of the project area that sets the context for the assessment and will 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 13.0](#)) and factors that support human and community well-being (in [Section 14.0](#)), based on the results of the VC assessments completed in the following sections. Detailed information on the baseline conditions for each VC should be included in the relevant VC assessment section.

7.2. Air Quality

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

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

7.2.1. 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 Air Quality Objectives;
- Canadian Ambient Air Quality Standards;
- British Columbia Air Quality Dispersion Modelling Guideline; and
- *[Additional sector-specific statutes, policies and frameworks as applicable]*
 - For example, Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations.

7.2.2. Assessment Boundaries

Assessment boundaries will be defined for the air quality VC, including spatial, temporal, and administrative and technical boundaries.

7.2.3. Existing Conditions

As applicable, the Application must:

- Describe major sources of baseline air emissions, including mobile, stationary and fugitive;
- Provide baseline information to characterize ambient air quality by identifying and quantifying emission sources of criteria/common air contaminants (for example, total suspended particulates, fine particulates smaller than 2.5 microns (PM_{2.5}), respirable particulates of less than 10 microns (PM₁₀), carbon monoxide (CO), ozone, sulphur oxides (SO_x), nitrogen oxides (NO_x), volatile organic compounds (VOCs), hydrogen sulphide (H₂S), any other hazardous air pollutants (mobile and stationary sources);
- Address seasonal variability in the baseline survey and include a determination of background or ambient contaminant concentrations, and provide 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);
- 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 Indigenous or local knowledge related to current air quality conditions;
- Describe sources of nuisance odour in the study area; 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 study area.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.2.4. Potential Effects

The Application must define potential effects to air quality, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.2.5. Effects Management

The Application must describe effects management approaches for air quality, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects as appropriate.

7.2.6. Assessing Positive Effects

The Application must describe any positive effects on air quality that are anticipated as a result of the project and its associated effects management approaches.

7.2.7. Assessing Negative Effects

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

7.2.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to air quality, including the criteria outlined in [Section 6.8](#).

7.2.9. Cumulative Effects

The Application will include an assessment of cumulative effects on air quality following the methods outlined in [Section 6.9](#) 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.

7.2.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the air quality VC following the approach outlined in [Section 6.10](#).

7.3. Acoustic

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.3.1. Relevant Statutes, Policies and Frameworks

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

- Municipal bylaws;
- Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise (Health Canada 2017); and
- British Columbia Noise Control Best Practices Guideline (B.C. Oil and Gas Commission 2018).

7.3.2. Assessment Boundaries

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

7.3.3. 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 a baseline ambient noise survey and permissible sound levels for each receptor;
- Describe typical sound sources, geographic extent and temporal variations;
- Describe noise-sensitive receptors in the study area, including any foreseeable future receptors, and distances of receptors from the project; and
- Describe available Indigenous or local knowledge related to current noise conditions.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.3.4. Potential Effects

The Application must define potential effects to the acoustic VC, identify interactions between the project and these effects and outline indicators that will be used to measure these effects.

7.3.5. Effects Management

The Application must describe effects management approaches for the acoustic VC, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.3.6. Assessing Positive Effects

The Application must describe any positive effects to the acoustic VC that are anticipated as a result of the project and its associated effects management approaches.

7.3.7. Assessing Negative Effects

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

7.3.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to acoustic, including the criteria outlined in [Section 6.8](#).

7.3.9. Cumulative Effects

The Application will include an assessment of cumulative effects on the acoustic VC following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.3.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the acoustic VC following the approach outlined in [Section 6.10](#).

7.4. Surface Water

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.4.1. 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*;
- *Fisheries Act*;
- *Drinking Water Protection Act*;
- B.C. Water Quality Guidelines;
- Manual of Standard Operation Procedures for Hydrometric Surveys in British Columbia
- B.C. Environmental Flow Needs Policy;
- Government Actions Regulation under the *Forest & Range Practices Act*; and
- *[Mining-specific statutes, policies and frameworks as applicable:]*
 - *Mines Act*;
 - Metal and Diamond Mining Effluent Regulations;
 - Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations;
 - Manual of British Columbia Hydrometric Standards; and
 - Policy for Metal Leaching and Acid Rock Drainage at Mine sites in British Columbia.

7.4.2. Assessment Boundaries

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

7.4.3. Existing Conditions

As applicable, the Application must:

- Describe the regional and local surface water quantity and quality conditions, including a description of the local watersheds;
- Describe any project-specific baseline 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);
- Provide surface water quantity and quality data used to develop or inform water balance and water quality models, if required for the assessment;
- Provide regional and local hydrologic and climatologic data (hydrometric data collection is to adhere to standardized practices and procedures - refer to the most recent version of the Manual of British Columbia Hydrometric Standards);

- 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 hydrology;
- Provide local water quality data (water quality data collection is to adhere to standardized practices and procedures - refer to Cavanaugh et al 1998, MWLAP 2003, MELP 1998, or MOE 2010);
- Describe seasonal and inter-annual patterns in streamflow;
- Describe seasonal and inter-annual trends in water quality parameters;
- Describe water quality relative to B.C. Water Quality Guidelines; and
- Describe available Indigenous or local knowledge related to surface water.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*
 - For example, describe regional geological and geochemical conditions

7.4.4. Potential Effects

The Application must define potential effects to surface water, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.4.5. Effects Management

The Application must describe effects management approaches for surface water, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.4.6. Assessing Positive Effects

The Application must describe any positive effects to surface water that are anticipated as a result of the project and its associated effects management approaches.

7.4.7. Assessing Negative Effects

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

7.4.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to surface water, including the criteria outlined in [Section 6.8](#).

7.4.9. Cumulative Effects

The Application will include an assessment of cumulative effects on surface water following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.4.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the surface water VC following the approach outlined in [Section 6.10](#).

7.5. Groundwater

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.5.1. Relevant Statutes, Policies and Frameworks

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

- B.C. Guidelines for Groundwater Modelling to Assess Impacts of Proposed Natural Development Activities;
- *Water Sustainability Act*;
- *Environmental Management Act*;
- *Drinking Water Protection Act*;
- B.C. Water Quality Guidelines;
- Government Actions Regulation under the *Forest & Range Practices Act*; and
- *[Additional sector-specific statutes, policies and frameworks as applicable:]*
 - Mines Act;
 - Metal and Diamond Mining Effluent Regulations;
 - Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operations;
 - Manual of Standard Operating Procedures for Hydrometric Surveys in British Columbia; and
 - Policy for Metal Leaching and Acid Rock Drainage at Mine Sites in British Columbia.

7.5.2. Assessment Boundaries

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

7.5.3. Existing Conditions

As applicable, the Application must:

- Describe the regional and local groundwater quantity and quality conditions;
- Describe any project-specific baseline 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);
- Provide groundwater quantity and quality data used to develop or inform water balance and water quality models, if required for the assessment;
- Describe seasonal trends in groundwater quality and quantity parameters;
- Describe possible groundwater-surface water interactions;
- Describe water quality relative to B.C. Water Quality Guidelines; and
- Describe available Indigenous or local knowledge related to groundwater.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.5.4. Potential Effects

The Application must define potential effects to groundwater, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.5.5. Effects Management

The Application must describe effects management approaches for groundwater, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.5.6. Assessing Positive Effects

The Application must describe any positive effects to groundwater that are anticipated as a result of the project and its associated effects management approaches.

7.5.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to groundwater 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 brief characterization of negative residual effects of the project to groundwater, including the criteria outlined in [Section 6.8](#).

7.5.9. Cumulative Effects

The Application will include an assessment of cumulative effects on groundwater following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.5.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the groundwater VC following the approach outlined in [Section 6.10](#).

7.6. Marine Water and Sediment Quality

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.6.1. Relevant Statutes, Policies and Frameworks

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

- *Environmental Management Act* and regulations;
- B.C. Water Quality Guidelines;
- *Fisheries Act* and regulations;
- *Migratory Birds Convention Act* and regulations;
- *Canadian Shipping Act* and regulations;
- *Canadian Environmental Protection Act, 1999* and regulations; and
- The Canadian Environmental Quality Guidelines.

7.6.2. Assessment Boundaries

The Application must define assessment boundaries for the marine water quality VC, including spatial, temporal, and administrative and technical boundaries.

7.6.3. Existing Conditions

As applicable, the Application must:

- Describe any project-specific baseline 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);
- Provide marine water quality data used to develop or inform water quality models, if required for the assessment;
- 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 marine water and sediment quality;
- Describe water quality relative to B.C. Water Quality Guidelines and Canadian Environmental Quality Guidelines; and
- Describe available Indigenous or local knowledge related to marine water and sediment quality.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.6.4. Potential Effects

The Application must define potential effects to marine water and sediment quality, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.6.5. Effects Management

The Application must describe effects management approaches for marine water and sediment quality, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.6.6. Assessing Positive Effects

The Application must describe any positive effects to marine water and sediment quality that are anticipated as a result of the project and its associated effects management approaches.

7.6.7. Assessing Negative Effects

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

7.6.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to marine water and sediment quality, including the criteria outlined in [Section 6.8](#).

7.6.9. Cumulative Effects

The Application will include an assessment of cumulative effects on marine water and sediment quality following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the

likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.6.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the marine water and sediment quality VC following the approach outlined in [Section 6.10](#).

7.7. Soil

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.7.1. Relevant Statutes, Policies and Frameworks

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

- Contaminated Sites Regulation under the *Environmental Management Act*;
- *Agricultural Land Commission Act* and Agricultural Land Reserve regulations; and
- *Forest Range and Practices Act*.

7.7.2. Assessment Boundaries

The Application must include assessment boundaries for the soil VC, including spatial, temporal, and administrative and technical boundaries.

7.7.3. Existing Conditions

As applicable, the Application must:

- Describe general information about baseline physiography;
- Provide baseline soil map units and data (soil series distribution and extent);
- Provide baseline maps and data for soil erosion potential;
- Provide baseline maps and data for land or agricultural capability as relevant;
- Characterize topsoil and subsoil for suitability as growth media for reclamation;
- Characterize land or agricultural capability as relevant; and
- Describe available Indigenous or local knowledge related to soil.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.7.4. Potential Effects

The Application must define potential effects to soil, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.7.5. Effects Management

The Application must describe effects management approaches for soil, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.7.6. Assessing Positive Effects

The Application must describe any positive effects to soil that are anticipated as a result of the project and its associated effects management approaches.

7.7.7. Assessing Negative Effects

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

7.7.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to soil, including the criteria outlined in [Section 6.8](#).

7.7.9. Cumulative Effects

The Application will include an assessment of cumulative effects on soil following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.7.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the soil VC following the approach outlined in [Section 6.10](#).

7.8. Unique Geologic Landforms

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.8.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the unique geologic landforms VC include:

- Protecting Karst in Coastal B.C. Special Report (Forest Practices Board 2007);
- Land use plans;
- *Land Act* Notations of Interest; and
- Government Actions Regulation under the *Forest & Range Practices Act*.

7.8.2. Assessment Boundaries

The Application must define assessment boundaries for the unique geological landforms VC, including spatial, temporal, and administrative and technical boundaries.

7.8.3. Existing Conditions

As applicable, the Application must:

- Describe any unique geological landforms that may interact with the project;
- Provide maps showing the extents of the unique geological landforms; and
- Describe available Indigenous or local knowledge related to the unique geological landforms.
- *[Additional regional or site-specific information as applicable]*

- *[Additional sector-specific information requirements as applicable]*

7.8.4. Potential Effects

The Application must define potential effects to unique geologic landforms, identify interactions between the Project and these effects, and outline indicators that will be used to measure these effects.

7.8.5. Effects Management

The Application must describe effects management approaches for unique geologic landforms, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.8.6. Assessing Positive Effects

The Application must describe any positive effects to unique geologic landforms that are anticipated as a result of the project and its associated effects management approaches.

7.8.7. Assessing Negative Effects

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

7.8.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to unique geologic landforms, including the criteria outlined in [Section 6.8](#).

7.8.9. Cumulative Effects

The Application will include an assessment of cumulative effects on unique geologic landforms following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.8.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the unique geologic landforms VC following the approach outlined in [Section 6.10](#).

7.9. Vegetation

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.9.1. Relevant Statutes, Policies and Frameworks

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

- *Oil and Gas Activities Act* and associated regulations and guidelines;
- *Forest and Range Practices Act*;
- *Forest Act*;
- *Weed Control Act* and regulation;
- *Water Sustainability Act* and regulations;

- B.C. Conservation Framework;
- *Species at Risk Act* (SARA); and
- Federal Policy on Wetland Conservation.

7.9.2. Assessment Boundaries

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

7.9.3. Existing Conditions

As applicable, the Application must:

- Identify and classify terrestrial ecosystems in the Local Study Area 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 (for example, Terrestrial Ecosystem Mapping or Sensitive Ecosystem Mapping) with appropriate field verification;
- 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 impacts on vegetation;
- Describe the location, extent and condition of ecological communities of conservation concern;
- Identify and classify wetland associations following *Wetlands of British Columbia: A Guide to Identification* (Mackenzie and Moran 2004);
- Identify the location and extent of old forest ecosystems;
- Identify the location and abundance of rare plant species, based on targeted field surveys as applicable;
- Describe the presence and abundance of invasive and non-native species in the project area;
- Provide information on the presence and abundance of traditional use plants in the project area, integrating available Indigenous and local knowledge as applicable; and
- Describe available Indigenous or local knowledge related to vegetation.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.9.4. Potential Effects

The Application must define potential effects to vegetation, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.9.5. Effects Management

The Application must describe effects management approaches for vegetation, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.9.6. Assessing Positive Effects

The Application must describe any positive effects to vegetation that are anticipated as a result of the project and its associated effects management approaches.

7.9.7. Assessing Negative Effects

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

7.9.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to vegetation, including the criteria outlined in [Section 6.8](#).

7.9.9. Cumulative Effects

The Application will include an assessment of cumulative effects on vegetation following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.9.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the vegetation VC following the approach outlined in [Section 6.10](#).

7.10. Wildlife

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.10.1. Relevant Statutes, Policies and Frameworks

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

- *Wildlife Act*;
- *SARA*;
- *Migratory Birds Convention Act* and regulation;
- B.C. Conservation Framework;
- *Oil and Gas Activities Act* and associated regulations and guidelines; and
- Government Actions Regulation under the *Forest & Range Practices Act*.

7.10.2. Assessment Boundaries

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

7.10.3. Existing Conditions

As applicable, the Application must:

- Include a current list of species expected to occur in the largest spatial boundary for the VC;
- For each species, provide federal (Committee on the Status of Endangered Wildlife in Canada [COSEWIC] and SARA) and provincial (Conservation Data Centre [CDC] List and Conservation Framework Rank) conservation status and expected occurrence (for example, months; seasons), distribution (for example, extent of project interaction), and general habitat associations (for example, old forest; wetlands);

- Describe the occurrence, distribution, population status, threats and conservation goals of each VC sub-component (for example, species or species group);
- Describe and provide any project-specific baseline 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);
- Describe the location, distribution, condition, and amount of suitable habitat that provides the seasonal and/or annual life requisites for a VC subcomponent. Provide the habitat mapping used to describe baseline conditions, which should be Terrestrial Ecosystem Mapping (for example, RIC 1998, 1999), Predictive Ecosystem Mapping (RIC 2000), or other well-supported and appropriate habitat mapping methods (for example, habitat suitability index model using vegetation resources inventory data);
- 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 wildlife and suitable habitat and/or migration patterns of each VC subcomponent;
- Describe the location, distribution, condition, and amount of 'critical habitat' (for example, as defined in a recovery strategy, conservation plan, or similar document);
- Provide a list of Ungulate Winter Ranges, Wildlife Habitat Areas, Wildlife Management Areas, Important Bird Areas, Bird Conservation Regions, or sanctuaries and the extent to which these overlap with the wildlife VC spatial boundaries;
- Provide a list or description of wildlife and wildlife habitat management objectives as defined in Land and Resource Management Plans or Sustainable Resource Management Plans;
- Describe the location and relative importance or significance of wildlife habitat features (for example, breeding colonies, travel corridors, mineral licks, protected nests, dens, roosts);
- Describe any established conservation thresholds (for example, as defined in a recovery strategy, conservation plan, or similar document) and whether these are exceeded at baseline (for example, linear feature density, core security habitat, critical habitat);
- Describe any relevant current conditions from B.C. Cumulative Effects Framework reports;
- Reference species of Indigenous cultural use and value; and
- Describe available Indigenous or local knowledge related to wildlife.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.10.4. Potential Effects

The Application must define potential effects to wildlife, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.10.5. Effects Management

The Application must describe effects management approaches for wildlife, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.10.6. Assessing Positive Effects

The Application must describe any positive effects to wildlife that are anticipated as a result of the project and its associated effects management approaches.

7.10.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to wildlife that are anticipated as a result of the project and present the results of this assessment, after taking mitigation into account. If habitat offsetting is proposed, requirements outlined in [Section 6.7](#) must be addressed.

7.10.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to wildlife, including the criteria outlined in [Section 6.8](#).

7.10.9. Cumulative Effects

The Application will include an assessment of cumulative effects on wildlife following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.10.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the wildlife VC following the approach outlined in [Section 6.10](#).

7.11. Freshwater Fish

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.11.1. Relevant Statutes, Policies and Frameworks

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

- *Fisheries Act* and regulations;
- Fisheries and Oceans Canada policies;
- *SARA*;
- Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada;
- *Oil and Gas Activities Act* and associated regulations and guidelines;
- *Riparian Areas Protection Act*;
- Government Actions Regulation under the *Forest & Range Practices Act*; and
- B.C. Environmental Flow Needs Policy.

7.11.2. Assessment Boundaries

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

7.11.3. Existing Conditions

As applicable, the Application must:

- Provide maps of the watershed(s) in the vicinity of the project showing key watercourses and waterbodies;
- Describe and provide maps of relevant fish habitats, including characteristics that directly and indirectly support fish in carrying out their life processes;
- Describe the historical occurrence, distribution, and conservation status of freshwater fish in the watercourses and waterbodies;
- Describe and provide any project-specific baseline surveys completed, including the methods used and how the results helped to characterize existing conditions (for example, filled an information gap; confirmed or refuted older information);
- Describe the fish species present and an estimate of the abundance of those species;
- Describe the location of important fish habitats and their relative significance;
- Describe habitat use, including seasonal variability in habitat use;
- 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 reference to species of Indigenous cultural use and value; and
- Describe available Indigenous or local knowledge related to freshwater fish.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.11.4. Potential Effects

The Application must define potential effects to freshwater fish, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.11.5. Effects Management

The Application must describe effects management approaches for freshwater fish, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.11.6. Assessing Positive Effects

The Application must describe any positive effects to freshwater fish that are anticipated as a result of the project and its associated effects management approaches.

7.11.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to freshwater fish that are anticipated as a result of the project and present the results of this assessment, after taking mitigation into account. If fish habitat offsetting is proposed, requirements outlined in [Section 6.7](#) must be addressed.

7.11.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to freshwater fish, including the criteria outlined in [Section 6.8](#).

7.11.9. Cumulative Effects

The Application will include an assessment of cumulative effects on freshwater fish following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.11.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the freshwater fish VC following the approach outlined in [Section 6.10](#).

7.12. Marine Resources

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.12.1. Relevant Statutes, Policies and Frameworks

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

- *Fisheries Act* and regulations;
- *SARA*;
- Fisheries Protection Policy Statement;
- *Canadian Environmental Protection Act, 1999*;
- *Oceans Act*;
- *Canada Shipping Act*;
- *Oil and Gas Activities Act* and associated regulations and guidelines; and
- *Wildlife Act*.

7.12.2. Assessment Boundaries

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

7.12.3. 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 maps of the marine environment in the vicinity of the project showing proximity to marine protected areas and important watercourses supporting fisheries;
- Describe and provide maps of relevant habitats, including characteristics that directly and indirectly support marine resources in carrying out their life processes;
- Describe the historical occurrence, distribution, and conservation status of marine fish, marine mammals and marine invertebrates;
- Describe and provide any project-specific baseline surveys completed, including the methods used and how the results helped to characterize existing conditions (for example, filled an information gap; confirmed or refuted older information);

- Describe the biological marine resources present and an estimate of the abundance of those species;
- Describe the location, distribution, condition, and amount of fish habitat that provides the seasonal and/or annual life requisites;
- Describe the location and characteristics of any relevant 'critical habitat' (as defined in a recovery strategy, conservation plan, or similar document);
- Describe habitat use, including seasonal variability in habitat use;
- 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 marine resources;
- Describe ambient underwater noise levels in the study area and at the project site from various sources based on acoustic measurements;
- Describe the underwater vibration and sound sources including geographic extent and spatial and temporal variations within the water column and at the seafloor;
- Reference species of Indigenous cultural use and value; and
- Describe available Indigenous or local knowledge related to marine resources.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

7.12.4. Potential Effects

The Application must define potential effects to marine resources, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.12.5. Effects Management

The Application must describe effects management approaches for marine resources, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.12.6. Assessing Positive Effects

The Application must describe any positive effects to marine resources that are anticipated as a result of the project and its associated effects management approaches.

7.12.7. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to marine resources that are anticipated as a result of the project and present the results of this assessment, after taking mitigation into account. If fish habitat offsetting is proposed, requirements outlined in [Section 6.7](#) must be addressed.

7.12.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to marine resources, including the criteria outlined in [Section 6.8](#).

7.12.9. Cumulative Effects

The Application will include an assessment of cumulative effects on marine resources following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.12.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the marine resources VC following the approach outlined in [Section 6.10](#).

7.13. Employment and Economy

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.13.1. Relevant Statutes, Policies and Frameworks

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

7.13.2. Assessment Boundaries

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

7.13.3. Existing Conditions

As applicable, the Application must:

- Describe the local and regional economy;
- Describe trends in labour force and employment statistics for residents in the local and regional study areas;
- Describe wage and income information;
- 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; and
- Describe available Indigenous or local knowledge related to employment and economy.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

Information must be sufficiently disaggregated and analysed to support the analysis of potential effects to distinct human populations.

7.13.4. Potential Effects

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

7.13.5. Effects Management

The Application must describe effects management approaches for employment and economy, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.13.6. Assessing Positive Effects

The Application must describe any positive effects to employment and economy that are anticipated as a result of the project and its associated effects management approaches.

7.13.7. Assessing Negative Effects

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

7.13.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to employment and economy, including the criteria outlined in [Section 6.8](#).

7.13.9. Cumulative Effects

The Application will include an assessment of cumulative effects on employment and economy following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.13.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to employment and economy VC following the approach outlined in [Section 6.10](#).

7.14. Land and Resource Use

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.14.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the land and resource use VC include:

- Crown land policies;
- Land use plans;
- Official Community Plans;
- Regional Growth Strategies;
- Municipal and Regional District bylaws;
- *Agricultural Land Commission Act*;
- *Forest Act*;
- *Forest and Range Practices Act*
- *Water Sustainability Act*;
- *Land Act*;
- *Mineral Tenure Act*;
- *Mines Act*;
- *Oil and Gas Activities Act*;
- *Parks Act*;
- *Wildlife Act*;

- *Fisheries Act*; and
- *Local Government Act*.

7.14.2. Assessment Boundaries

The Application must define assessment boundaries for the land and resource use VC, including spatial, temporal, and administrative and technical boundaries.

7.14.3. 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 study area and their vulnerability to land and resource use effects (for example, Indigenous people, farmers);
- Describe the following types of land or resource uses, including location and access, in the vicinity of the Project:
 - Private property and residential areas;
 - Industrial land uses (for example, mining, oil and gas);
 - Other tenured, permitted or licensed land uses (for example, trapping, guiding);
 - 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; and
 - Other;
- Describe current conditions with respect to air quality, 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 impacts on land and resource use;
- Describe the visual landscape from key use areas; and
- Describe available Indigenous or local knowledge related to land and resource use.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

Information must be sufficiently disaggregated and analysed to support the analysis of potential effects to distinct human populations.

7.14.4. Potential Effects

The Application must define potential effects to land and resource use, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.14.5. Effects Management

The Application must describe effects management approaches for land and resource use, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.14.6. Assessing Positive Effects

The Application must describe any positive effects to land and resource use that are anticipated as a result of the project and its associated effects management approaches.

7.14.7. Assessing Negative Effects

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

7.14.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to land and resource use, including the criteria outlined in [Section 6.8](#).

7.14.9. Cumulative Effects

The Application will include an assessment of cumulative effects on land and resource use following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.14.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the land and resource use VC following the approach outlined in [Section 6.10](#).

7.15. Marine Use

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.15.1. Relevant Statutes, Policies and Frameworks

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

- *Canadian Navigable Waters Act*;
- *Canada Marine Act* and regulations;
- *Pilotage Act*;
- *Canada Shipping Act*;
- *Marine Transportation Security Act* and regulations; and
- *Fisheries Act*.

7.15.2. Assessment Boundaries

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

7.15.3. Existing Conditions

As applicable, the Application must:

- Identify and describe navigable waters;
- Describe relevant marine use plans;
- Describe all marine protected areas;
- Describe Port operations, management plans, policies and objectives;
- Describe Canadian Coast Guard services in the area;
- Describe marine infrastructure, and navigation aids;
- Describe applicable marine communication policies and procedures;
- Describe and quantify shipping and other marine traffic (for example, cruise ships, ferries, fishers, recreational boaters, commercial tour operators, military, coast guard, tugboats, and barges);
- Describe and quantify commercial fisheries;
- Describe other tenured, permitted or licensed marine uses (for example, aquaculture, moorage);
- Describe recreational fishing;
- Describe Indigenous fisheries and boating routes;
- Describe other marine harvesting uses and activities;
- Describe marine recreation and tourism in the area;
- Describe the visual landscape from key use areas; and
- Describe available Indigenous or local knowledge related to marine use.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

Information must be sufficiently disaggregated and analysed to support the analysis of potential effects to distinct human populations.

7.15.4. Potential Effects

The Application must define potential effects to marine use, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.15.5. Effects Management

The Application must describe effects management approaches for marine use, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.15.6. Assessing Positive Effects

The Application must describe any positive effects to marine use that are anticipated as a result of the project and its associated effects management approaches.

7.15.7. Assessing Negative Effects

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

7.15.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to marine use, including the criteria outlined in [Section 6.8](#).

7.15.9. Cumulative Effects

The Application will include an assessment of cumulative effects on marine use following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.15.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the marine use VC following the approach outlined in [Section 6.10](#).

7.16. Infrastructure and Services

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.16.1. Relevant Statutes, Policies and Frameworks

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

- Official Community Plans;
- Regional Growth Strategies;
- Municipal and Regional District bylaws;
- Service provider management/development plans and strategies;
- Community Charters;
- *Transportation Act*; and
- *Local Government Act*.

7.16.2. Assessment Boundaries

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

7.16.3. Existing Conditions

As applicable, the Application must:

- Describe relevant population demographics and trends (for example, health status, community safety and crime, education and training);
- Describe the capacity and availability of the following;
 - Health care and social services and facilities;

- 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;
- Describe the capacity of housing and accommodation; and
- Describe available Indigenous or local knowledge related to infrastructure and services.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

Information must be sufficiently disaggregated and analysed to support the analysis of potential effects to distinct human populations.

7.16.4. Potential Effects

The Application must define potential effects to infrastructure and services, identify interactions between the Project and these effects, and outline indicators that will be used to measure these effects.

7.16.5. Effects Management

The Application must describe effects management approaches for infrastructure and services, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.16.6. Assessing Positive Effects

The Application must describe any positive effects to infrastructure and services that are anticipated as a result of the project and its associated effects management approaches.

7.16.7. Assessing Negative Effects

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

7.16.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to infrastructure and services, including the criteria outlined in [Section 6.8](#).

7.16.9. Cumulative Effects

The Application will include an assessment of cumulative effects on infrastructure and services following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.16.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the infrastructure and services VC following the approach outlined in [Section 6.10](#).

7.17. Human Health

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.17.1. Relevant Statutes, Policies and Frameworks

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

- *Public Health Act* and regulations;
- Contaminated Sites Regulation under the *Environmental Management Act*;
- *Drinking Water Protection Act*;
- Health Canada Guidance for Evaluating Human Health Impacts in Environmental Assessment: Human Health Risk Assessment;
- Ministry of Health Guidance document for Prospective Human Health Risk Assessment (HHRA) [currently in draft and expected to be finalized in 2020]; and
- Relevant statutes, policies and frameworks for the air quality, surface water, groundwater and noise VCs.

7.17.2. Assessment Boundaries

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

7.17.3. Existing Conditions

As applicable, the Application must:

- Describe baseline conditions for VCs that are linked to human health, which may include:
 - Air quality;
 - Acoustic;
 - Surface Water;
 - Groundwater;
 - Marine Resources; and
 - Soil quality;
- Describe baseline conditions for quality of country foods. Information can be pulled from relevant VCs, such as:
 - Vegetation;
 - Wildlife;
 - Marine Resources; and
 - Freshwater Fish;

- Describe baseline conditions identified for VCs linked to population health (for example, employment and economy, infrastructure and services, culture) that contribute to population health, such as:
 - Population demographics;
 - Employment and income;
 - Access to health services;
 - Personal health practices (for example, substance use, diet, exercise);
 - Behaviours and activities (for example, recreational, traditional, or other land uses); and
 - Health status (for example, mental health, chronic illnesses);
- Describe available Indigenous or local knowledge related to human health.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

Information must be sufficiently disaggregated and analysed to support the analysis of potential effects to distinct human populations.

7.17.4. Potential Effects

The Application must define potential effects to human health, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.17.5. Effects Management

The Application must describe effects management approaches for human health, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.17.6. Assessing Positive Effects

The Application must describe any positive effects to human health that are anticipated as a result of the project and its associated effects management approaches.

7.17.7. Assessing Negative Effects

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

7.17.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to human health, including the criteria outlined in [Section 6.8](#).

7.17.9. Cumulative Effects

The Application will include an assessment of cumulative effects on human health following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.17.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the human health VC following the approach outlined in [Section 6.10](#).

7.18. Archaeological and Heritage Resources

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.18.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the archaeological and heritage resources VC include:

- *Heritage Conservation Act*;
- Fossil Management Framework;
- Fossil Management Policy including Fossil Impact Assessment Guidelines; and
- *[Local Government Act or Vancouver Charter, as applicable]*.

7.18.2. Assessment Boundaries

The Application must define assessment boundaries for the archaeological and heritage resources VC, including spatial, temporal, and administrative and technical boundaries.

7.18.3. Existing Conditions

As applicable, the Application must:

- Describe and provide archaeological studies completed in the local and regional study area 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; and
- Describe available Indigenous or local knowledge related to archaeological and heritage resources.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

Information must be sufficiently disaggregated and analysed to support the analysis of potential effects to distinct human populations.

7.18.4. Potential Effects

The Application must define potential effects to archaeology and heritage resources, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.18.5. Effects Management

The Application must describe effects management approaches for archaeology and heritage resources, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.18.6. Assessing Positive Effects

The Application must describe any positive effects to archaeology and heritage resources that are anticipated as a result of the project and its associated effects management approaches.

7.18.7. Assessing Negative Effects

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

7.18.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to archaeology and heritage resources, including the criteria outlined in [Section 6.8](#).

7.18.9. Cumulative Effects

The Application will include an assessment of cumulative effects on archaeology and heritage resources following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.18.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the archaeological and heritage resources VC following the approach outlined in [Section 6.10](#).

7.19. Culture

This section of the Application will include the following headings and information. The approach will generally follow the methods outlined in [Section 6.0](#), and any VC-specific deviations will be described.

7.19.1. Relevant Statutes, Policies and Frameworks

Statutes, policies and frameworks that may be relevant to the culture VC include Indigenous and non-Indigenous community and land use plans that overlap the project site.

7.19.2. Assessment Boundaries

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

7.19.3. Existing Conditions

As applicable, the Application must:

- Describe the cultural history and identity in the project area including governance and stewardship systems, customs, beliefs and values;
- Describe language and intergenerational knowledge transfer;
- Describe community and cultural cohesion; and
- Describe available Indigenous or local knowledge related to culture.
- *[Additional regional or site-specific information as applicable]*
- *[Additional sector-specific information requirements as applicable]*

Information must be sufficiently disaggregated and analysed to support the analysis of potential effects to distinct human populations.

7.19.4. Potential Effects

The Application must define potential effects to culture, identify interactions between the project and these effects, and outline indicators that will be used to measure these effects.

7.19.5. Effects Management

The Application must describe effects management approaches for culture, including approaches to avoid, reduce or otherwise address potential negative effects and enhance positive effects, as appropriate.

7.19.6. Assessing Positive Effects

The Application must describe any positive effects to culture that are anticipated as a result of the project and its associated effects management approaches.

7.19.7. Assessing Negative Effects

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

7.19.8. Characterization of Residual Effects

The Application must provide a brief characterization of negative residual effects of the project to culture, including the criteria outlined in [Section 6.8](#).

7.19.9. Cumulative Effects

The Application will include an assessment of cumulative effects on culture following the methods outlined in [Section 6.9](#) and identify any additional mitigation measures. The Application will describe the likelihood of any adverse residual cumulative effects and provide a summary of the results of the cumulative effects assessment.

7.19.10. Follow-up Strategy

The Application will describe proposed monitoring and follow-up programs applicable to the culture VC following the approach outlined in [Section 6.10](#).

8.0 GREENHOUSE GAS EMISSIONS

The Application must:

- Describe the project's main source(s) of GHG emissions by GHG type;
- Update the estimate of the annual GHG emissions by project phase as identified during Early Engagement;
- Describe the project's potential positive or negative effects on carbon sinks as identified during Early Engagement;
- Describe measures identified to mitigate GHG emissions, including using Best Available Technologies and project design; and
- 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*.

The information requirements and effects assessment for GHG emissions will be scaled to each project based on estimated GHG emissions and the potential for effects on carbon sinks. Additional information may include:

- Description of the GHG emissions intensity;
- Description of monitoring, follow-up and reporting requirements to confirm findings from the EA;
- Description of emissions offsetting options;
- Description of other relevant emissions targets, including those of a local, federal, or Indigenous government and how the project would affect those targets;
- Description of carbon capture and storage options; and
- Any other information requirements identified during Process Planning.

Where there is uncertainty in the GHG emissions identified, the source and level of uncertainty should be identified and discussed. In some cases, it may be appropriate to provide a range of values or identify different possible emissions scenarios. See the Effects Assessment Policy found [here](#) for more information.

9.0 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 should 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 should be used to develop plans to reduce or eliminate the likelihood of an incident or reduce the consequence of incidents. All phases of the project must be considered.

The Application must:

- 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;
- Describe the methods for assessing the potential risk of each incident, including definitions for classifications of likelihood, consequence and risk, and identification of threshold for incidents that will be carried forward for detailed analysis (for example, incidents determined to be moderate or high-risk);
- 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, cultural 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 will 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 boundaries described for the assessment area;
 - 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;
- 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;
 - Contingency and emergency response procedures if such events do occur;
 - Monitoring, evaluation, 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.

The specific malfunctions or accidents to be considered in the Application include the following:

- *[Insert project-specific list here]*

10.0 EFFECTS OF THE ENVIRONMENT ON THE PROJECT

The Application must:

- 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:
 - *[Provide a preliminary list of possible effects of the environment that will be assessed in the Application;]*
- 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.

Additional information related to assessing climate risk is available in the [Preliminary Strategic Climate Risk Assessment for B.C.](#) led by the Climate Action Secretariat at the Ministry of Environment and Climate Change Strategy.

11.0 INDIGENOUS NATION

One chapter should be developed for each Indigenous nation. AIR content below should be customized in collaboration with the Nation, where possible. The name of the specific Indigenous nation should be the title of this chapter and should replace where *[Indigenous nation]* appears below. Efforts should be made to incorporate Nation-specific information and requirements below, based on work with the Nation. Indigenous interests to be assessed will be finalized in the AIR, following from the preliminary understanding of Indigenous interests developed during Early Engagement. Indigenous interests are those interests related to an Indigenous nation and their rights recognized and affirmed by Section 35 of the *Constitution Act, 1982*, including Treaty rights and Aboriginal rights and title, that may be impacted by a proposed project.

In some cases, it may be useful to summarize information from the VC assessments that feeds into the assessment for several Indigenous nations. In these cases, a summary chapter of potential effects may be appropriate before the individual Indigenous nation chapters.

11.1. Overview

The Application must include an assessment of the effects of the project on *[Indigenous nation]* that may be impacted by the project, as identified in the Process Order.

This assessment in the Application must be informed by engagement with *[Indigenous nation]*, as required in the Assessment Plan and in [Appendix 17.4](#) of the AIR.

11.2. *[Indigenous Nation]* Context

The information in this section may be varied to an Indigenous nation, to better reflect their information expectations and requirements, according to the nature of their interests.

11.2.1. Understanding of Indigenous Interests and Current Context

The Application must include background information on *[Indigenous nation]* including ethnography, language, governance, economy, population, communities, Reserves, Indigenous land use plans (as required under [Section 2.3](#)),

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 [*Indigenous nation*] 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 [*Indigenous nation*]'s governance context of the area affected by the project including information regarding, where that is 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 values 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.

11.3. 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 [*Indigenous nation*] with respect to the project including:
 - The engagement activities undertaken with [*Indigenous nation*] including the timeframe, means, and results of engagement;
 - Efforts to engage diverse populations of the [*Indigenous nation*] community in culturally appropriate ways, including groups identified by gender, age, or other community relevant factors;
 - How engagement activities by the proponent support [*Indigenous nation*] to understand the project and its effects on the Nation and its rights; and
 - [*Indigenous nation's*] views on the proponent's engagement approach and resolution of issues raised;
- Provide an analysis of the input received from [*Indigenous nation*] with respect to the project including:
 - Description of how the proponent responded to questions, comments and issues raised by [*Indigenous nation*], the Nation's perspective on the resolution of issues, how unresolved input has been addressed in the Application, and/or how unresolved input will be addressed through the EA or another regulatory process or government initiative;
 - Where and how [*Indigenous nation'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 or decommissioning;
- Identification of VCs.
- Describe any arrangement or agreement between the proponent and the [*Indigenous 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.

A summary table of input received from each Indigenous nation with the following information is a useful tool to submit with the Application and keep updated through the EA:

- Each question, comment or issue raised;
- Proponent's response including reference, where appropriate, to proposed measures to avoid, mitigate or otherwise manage effects;
- Nation's perspective on response; and
- Status of issue or next steps.

11.4. Information Sources

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

11.4.1. Indigenous Knowledge

Refer to the Guide to Indigenous Knowledge in Environmental Assessments found [here](#) for further information.

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

- Provide an outline of the steps taken by the proponent to work with [*Indigenous nation*] to incorporate Indigenous knowledge including a summary of any arrangements with the Indigenous nation regarding the use and application of Indigenous knowledge;
- Provide a statement indicating that [*Indigenous nation*] 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 [*Indigenous nation*] to further incorporate Indigenous knowledge into project implementation (for example, monitoring and management plans).

11.5. Assessing Effects on Indigenous Interests

11.5.1. Introduction

This section must provide a comprehensive description of the effects of the project on *[Indigenous nation's]* interests. A subsection should be drafted for each Indigenous interest; however, interests may be combined, where appropriate (for example, where the supporting information and analysis is similar), and not all sections are required for each interest.

The name of the specific Indigenous interest should replace where *[Indigenous interest]* appears below. An Indigenous interest may be directly assessed through a representative VC or an assessment of Indigenous interests may be supported by the information provided from the assessment of one or more VCs. In some instances, projects effects on Indigenous interests may be assessed with little to no application of information from the assessment of VCs. This section should summarize and present the appropriate information from the analysis of any relevant VCs in the context relevant for the *[Indigenous nation]*.

Generally, sections [11.5.1](#) to [11.5.9](#) must be completed for each Indigenous interest that is not directly assessed through a representative VC, but the assessment of one or more VCs provides relevant input. Sections [11.5.7](#) to [11.5.9](#) must be completed for each Indigenous interest that is assessed through a representative VC.

See the Effects Assessment Policy found [here](#) for guidance on assessing effects on Indigenous interests.

The Application must:

- Describe how *[Indigenous interest]* was identified, through engagement with *[Indigenous nation]* or otherwise;
- Summarize the VCs used in the assessment of effects on *[Indigenous interest]* and whether they were carried forward from the assessment of [Section 25\(2\)](#) assessment matters presented in [Section 7.0](#) or developed specifically for the assessment of *[Indigenous interest]*;
- Describe any other assessment methods and analysis used to undertake the assessment of effects to *[Indigenous interest]*; and
- Describe linkages with other Indigenous interests.

11.5.2. Assessment Boundaries

The Application must define the assessment boundaries for the effects on *[Indigenous interest]*, including spatial and temporal boundaries. Where relevant, administrative and technical boundaries should also be identified.

11.5.3. 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 *[Indigenous interest]* (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 [*Indigenous interest*] has been affected by cumulative effects to date.

11.5.4. Potential Effects

11.5.4.1. Indigenous Interests

The Application must include an assessment of the effects to [*Indigenous interest*]. The Application must:

- Describe potential pathways by which the project components and activities could impact [*Indigenous interest*];
- 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.

Effects may occur through multiple pathways including but not limited to the following:

- Environmental conditions;
- Specific Sites or areas of importance;
- Indigenous peoples and community well-being; and
- Governance.

See the Effects Assessment Policy found [here](#) for further details.

11.5.5. Effects Management

The Application must:

- Provide project design and mitigations identified for the relevant VCs that are proposed to mitigate effects on [*Indigenous interest*];
- Provide additional mitigations that are specific to [*Indigenous nation*] or [*Indigenous interest*]; and
- Provide proposed monitoring initiatives or review processes related to the effect on [*Indigenous interest*].

[*Indigenous 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.

11.5.6. Assessing Negative Effects

The Application must provide a detailed description of the methods used to assess negative effects to [*Indigenous interest*] that are anticipated as a result of the project, and present the results of this assessment, after taking mitigation into account.

11.5.7. Characterization of Residual Effects

The Application must provide a characterization of negative residual effects of the project to [*Indigenous interest*].

See the Effects Assessment Policy, found [here](#), for an example of how the VC residual effects characterizations may be considered in the context of effects to an Indigenous nation's interest. Other types of characterization criteria may also be appropriate and developed with a Nation.

11.5.8. Cumulative Effects

The Application must include an assessment of cumulative effects on [*Indigenous interest*] 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 [*Indigenous interest*] and provide a summary of the results of the cumulative effects assessment.

11.5.9. Views of [*Indigenous nation*]

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

11.6. Positive Effects

The Application must describe any positive effects to individual [*Indigenous interests*] or [*Indigenous 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 [*Indigenous nation*], including any collaboration with the [*Indigenous nation*] as a participating Indigenous nation, or integrated the [*Indigenous nation's*] perspectives into, the assessment of positive effects on [*Indigenous interest*]. The Application must clearly state any views of the [*Indigenous nation*] on the potential positive effects identified.

11.7. Summary

The Application must include a summary of the assessment for [*Indigenous 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 [*Indigenous nation*]; and
- Efforts taken to address any points of disagreement.

The Application should not assess the seriousness of the impact of the project on individual Indigenous interests or Indigenous nations as a whole. This step will be taken by the EAO and done through a consensus seeking process with participating Indigenous nations.

12.0 SUMMARY OF STATUTORY REQUIREMENTS UNDER THE FEDERAL IMPACT ASSESSMENT ACT (SUBSTITUTED PROJECTS ONLY)

Specific details on requirements for substituted projects will be provided in a future iteration of this document.

13.0 SUMMARY OF BIOPHYSICAL FACTORS THAT SUPPORT ECOSYSTEM FUNCTION

The intent of the section is to provide a holistic assessment of the project effects to ecosystem function recognizing the interdependence of components of an ecosystem and that impacts to specific biophysical factors within an ecosystem can have impacts to the function of the ecosystem.

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 Application must:

1. Provide an overview of the current ecosystem function in the vicinity of the project at a landscape-and watershed level;
2. Identify the key biophysical factors that support ecosystem function that the project effects may interact with;
3. Discuss how the VC assessments and cumulative effects assessments considered effects on these biophysical factors;
4. Summarize the positive and negative effects, including adverse cumulative effects, on biophysical factors that support ecosystem function based on appropriate information from the VC assessments;
5. Identify proposed measures required to manage potential effects on biophysical factors that support ecosystem function; and

6. Describe any predicted changes to ecosystem function as a result of the project.

Refer to the Effects Assessment Policy, found [here](#), for additional details on the assessment of biophysical factors that support ecosystem function.

14.0 SUMMARY OF HUMAN AND COMMUNITY WELL-BEING

The intent of the section is to summarize the broad range of potential social, economic, health and culture effects that contribute to changes in human and community well-being with the understanding that these effects can be highly dependent on each other and inter-related. These effects are also often closely intertwined with the state of and trends in the biophysical environment, which demonstrates the need to consider potential effects on human and community well-being from a holistic perspective (refer to the Human and Community Well-being Guidelines, found [here](#)).

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;
- Summarize potential positive and negative effects including residual adverse cumulative effects of the project on human and community well-being based on the results of the VC assessments under social, economic, health and culture and the assessment of effects to Indigenous interests;
- Identify how the project interacts differently with distinct human populations;
- 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; and
- Describe any anticipated changes to human and community well-being more generally as a result of the project.

15.0 SUMMARY OF IMPACTS TO CURRENT AND FUTURE GENERATIONS

The results of the analysis of the effects of the project on current and future generations will provide the decision makers with greater insight into the sustainability of the project, particularly how it would protect the environment and foster a sound economy and the well-being of British Columbians and their communities. For guidance on the assessment of project effects on current and future generations refer to the Effects Assessment Policy, found [here](#).

The Application must summarize the analysis and conclusions for environmental, economic, social, cultural and health VCs and Indigenous interests that contribute to the project's positive or negative effects on current and future generations.

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 B.C. 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 will 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.

16.0 REFERENCES

- Cavanagh, N., R.N Nordin, L.W. Pommen, and L.G. Swain. 1998. *Guidelines for Designing and Implementing a Water Quality Monitoring Program in British Columbia*. Field Test Edition. Resource Information Standards Committee, Province of B.C.
- Mackenzie and Moran 2004. *Wetlands of British Columbia: A Guide to Identification*. Resource Branch, B.C. Ministry of Forests, Victoria BC. Land Management Handbook 52.
- Ministry of Water, Land and Air Protection (MWLAP). 2003. *British Columbia Field Sampling Manual - For Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment and Biological Samples*. Province of B.C. www.env.gov.bc.ca/epd/wamr/labsys/field_man_03.html
- Ministry of Environment, Lands and Parks (MELP). 1998. *Guidelines for Interpreting Water Quality Data*. Resource Information Standards Committee, Province of B.C.
- Ministry of Environment (MOE). 2010. *Approved Water Quality Guidelines*. www.env.gov.bc.ca/wat/wq/wq_guidelines.html#approved
- RIC (Resource Inventory Committee) 1998. *Standard for Terrestrial Ecosystem Mapping in British Columbia*. Prepared by Ecosystems Working Group Terrestrial Ecosystems Task Force. 100 pp.
- RIC. 1999. *British Columbia Wildlife Habitat Rating Standards*. Version 2.0. Prepared by Ministry of Environment, Lands and Parks Resources Inventory Branch for the Terrestrial Ecosystems Task Force. 97 pp.
- RIC. 2000. *Standards for Predictive Ecosystem Mapping (PEM) - Digital Data Capture Predictive Ecosystem Technical Standards and Database Manual*. Prepared by PEM Data Committee for the TEM Alternatives Task Force. 31 pp.

17.0 APPENDICES

17.1. 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. This table will be used by the EAO during issues resolution, in updating the Regulatory Coordination Plan to describe how issues are being addressed in the EA or could be further addressed in permitting, and in the development of the draft EAC including proposed conditions.

17.2. Requested Project for Certification

The Application must provide the proponent's requested project description for the EAC including maps and the requested duration of the EAC.

See the Environmental Assessment Certificate Policy found [here](#) for further guidance on the project description including maps. The EAO will use the proponent's requested project description as the starting place for engagement with the technical and community advisory committees, participating Indigenous nations and make refinements as appropriate through the Effects Assessment phase. The draft EAC including the project description is made available to the public for comment prior to referral to ministers.

The project description maps and spatial data provided by the proponent through the assessment will be used by the EAO to capture a spatial representation of the project in the EAC decision referral package and may also be used by permitting agencies to inform permitting considerations.

17.3. 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 his or her area of expertise. Knowledge relevant to a matter may include Indigenous and local knowledge.

17.4. 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 AIR must provide a 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;
- Reviewers and the EAO must be provided with 2 weeks of advance notice before the proponent sends information for review;
- Information for different VCs may be provided at different times; however, proponents should consider sending information in packages that make efficient use of reviewer's 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, by an organization, for information must be identified (see example table below), considering the following factors:
 - Reviewers will 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 will depend on the VCs identified for the project; and
 - Indigenous nations reviewers should be identified based on their identified Indigenous interests and based on their interest in reviewing information;
- The expected timelines for providing information to reviewers must be identified.

Information	Potential Reviewers*
Air Quality baseline and predictive studies	Ministry of Environment and Climate Change Strategy (ENV)-Air Quality Section, Oil and Gas Commission (OGC)
Acoustic baseline and predictive studies	Relevant Health Authority, Health Canada, OGC
Visual Resource predicted impacts	Ministry of Forest, Lands, Natural Resources and Rural Development (FLNR)
Geoscience studies	Ministry of Energy Mines and Petroleum Resources (EMPR)
Geotechnical studies	EMPR
Reclamation plans	EMPR
Water Quality baseline and predictive studies	ENV, Environment and Climate Change Canada (ECCC)
Surficial hydrology baseline and predictive studies	ENV, FLNR, OGC
Hydrogeology baseline and predictive studies	EMPR, OGC
Marine water and sediment baseline and predictive studies	Department of Fisheries and Oceans (DFO), ECCC, ENV
Soil studies	EMPR, ENV, OGC
Unique Geological Landform studies	EAO+

Vegetation baseline and predictive studies	FLNR, ECCC, OGC
Wildlife baseline and predictive studies	FLNR, ECCC, OGC
Freshwater Fish and aquatic life baseline and predictive studies	FLNR, DFO
Marine Resource studies	DFO
Employment and Economy baseline and predictive studies	EAO ⁺
Infrastructure and Services studies	EAO, local governments
Human Health Risk Assessment	Relevant Health Authority, Health Canada, Ministry of Health
Archaeology Impact Assessments	FLNRORD- Heritage Branch
Cultural studies	Applicable Indigenous nation
Greenhouse Gas predictive studies	ECCC, Climate Action Secretariat
Malfunction and Accidents analyses	EMPR, ENV, OGC, EAO ⁺
Alternatives assessment, including tailings alternatives assessment, where applicable	EMPR, OGC, EAO ⁺
Notes: *Indigenous nations may be reviewers for any type of information, based on their identified interest. + Other ministries may also be identified.	

Table 3. Example of table showing information to be reviewed and reviewers to be identified in the AIR