

CRAB/EUROPA HYDROELECTRIC DEVELOPMENT

DRAFT TERMS OF REFERENCE

With Respect To:
An Application for an Environmental Assessment
Certificate Pursuant to the
British Columbia *Environmental Assessment Act*,
S.B.C. 2002, c. 43

Prepared by:



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Preface

The Application for an Environmental Assessment Certificate (Application) Preface will include the following:

- Statement indicating that the Crab/Europa Hydroelectric Development (the Project) is subject to review under the BC Environmental Assessment Act (BCEAA) pursuant to an Order issued under Section 10 of the Act.
- Statement indicating the Crab/Europa Hydroelectric Development is also subject to review under the Canadian Environmental Assessment Act (CEAA) pursuant to the Law List Regulations.
- Notation that the Application was developed pursuant to the Crab/Europa Hydroelectric Development Terms of Reference approved by the British Columbia Environmental Assessment Office (EAO), and that it complies with any other relevant instructions provided in the Section 11 Order.
- Identification of the federal and provincial agencies, First Nations, and other parties involved in the development of the Application.
- A Table of Concordance, which cross-references the information presented in the Application with the information requirements identified in the Crab/Europa Hydroelectric Development Approved Terms of Reference.

Executive Summary

The Executive Summary of the Application will contain the following:

- Description of key facets of the Project (facilities and associated activities) suitable for use as a stand-alone document.
- Description of information distribution activities and First Nations, public and government agency consultation measures undertaken, and a summary of the issues raised and solutions suggested during these consultations.
- General overview of key environmental and socio-economic issues and benefits along with proposed mitigation measures.
- Conclusions from the assessment.

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LIST OF APPENDICES

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List of Abbreviations

Preamble:

A List of Abbreviations will be provided for the Application. It will be based on the following list, developed for the Terms of Reference document.

AIA	Archaeological Impact Assessment
ATOR	Approved Terms of Reference
BCEAA	British Columbia Environmental Assessment Act
CDC	Conservation Data Centre
CEA	Cumulative Effects Assessment
CEAA	Canadian Environmental Assessment Act
CEE	Cumulative Environmental Effects
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWH	Coastal Western Hemlock
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EAO	British Columbia's Environmental Assessment Office
EMP	Environmental Management Plan
IPP	Independent Power Producer
KLRMP	Kalum Land and Resource Management Plan
kV	kilovolt
masl	metres above sea level
MH	Mountain Hemlock
MOE	British Columbia's Ministry of Environment
MW	megawatt
MWLAP	British Columbia's Ministry of Water, Land and Air Protection
NCLRMP	North Coast Land and Resource Management Plan
RA(s)	Responsible Authority(ies) under CEAA
RISC	Resources Information Standards Committee
SARA	Canada Species at Risk Act
Section 11 Order	Procedural Order issued under Section 11 of BCEAA
TEM	Terrestrial Ecosystem Mapping
VEC	Valued Ecosystem Components

1.0 Introduction

The proposed Crab/Europa Hydroelectric Development (the Project) consists of 2 run-of-river hydroelectric facilities, one on the Crab River and the other on Europa Creek. The Project sites are located 50 km and 70 km south of Kitimat, British Columbia. Run-of-river water power developments are hydroelectric generation plants that use the natural flow of water rather than a storage reservoir to feed the turbines. The Crab River facility will have an average generating capacity of 15.2 MW (with a rated nameplate capacity of approximately 32.0 MW during high flow conditions) and the Europa Creek facility will have an average generating capacity of 36.1 MW (with a rated nameplate capacity of approximately 102 MW during high flow conditions).

The two projects will be connected to the BCTC transmission grid via a 70 km, 138 kV transmission line running from the project facilities and connecting to the Alcan 230 kV transmission line between Kildala Arm and Kitimat BC. At the interconnection point, the line voltage will be stepped up to connect to the 230 kV transmission line and power will be transmitted along the Alcan line to the BCTC transmission grid in Kitimat. 728078 BC Ltd. has negotiated an exclusive arrangement with Alcan concerning the interconnection with its transmission line between Kildala Arm and Kitimat. A second option for the transmission line route includes a 70 km, 138 kV line running from the Crab Hydroelectric Plant to Kitimat, where it would connect directly to the BCTC grid. Figure 1-1 provides an overview of the Project location and proposed transmission line route.

As the planned capacity for the Project exceeds the *BC Environmental Assessment Act* (BCEAA) trigger of 50 MW, the Project constitutes a reviewable project pursuant to Part 4 of the Reviewable Projects Regulations (BC Reg. 370/2002). In addition permit applications under other BC provincial enactments are required and will be included for concurrent review. The Project is also expected to require a screening level assessment in accordance with the Law List Regulations under the *Canadian Environmental Assessment Act* (CEAA) due to authorizations required under the federal *Fisheries Act* and *Navigable Waters Protection Act*.

1.1 Proponent Identification

The Project is proposed by Kitimaat Renewable Energy Corporation, whose majority partner is 728078 BC Ltd. (a partnership between the Haisla Nation and Dr. Alexander Eunall). Alexander Eunall has developed similar projects, two of which are currently operating in British Columbia.

Contact information for the proponent is provided below:

Kitimaat Renewable Energy Corporation

PO Box 23, Postal Station A

Vancouver, BC V6C 2L8

Telephone: 604.737.3929

E-mail: aeunall@shaw.ca

Company Representative: Dr. Alexander Eunall

The proponent has retained Triton Environmental Consultants Ltd. (Triton) to manage and conduct environmental studies and to prepare the Application for an Environmental Assessment Certificate for the Project. Contact information for Triton is provided below:

Triton Environmental Consultants Ltd.

#300 - 4546 Park Avenue

Terrace, BC V8G 4A2

Telephone: 250.635.1494

Fax: 250.635.1495

E-mail: jharris@triton-env.com

Company Representative: Jason Harris, R.P.Bio

1.2 General Application Background

This section of the Application will include an outline of the structural components of the Application, a brief description of the Project planning and review history, and rationale for the preferred location. Any legal orders or agreements applying to the review of the Project will also be included in this section.

1.3 Project Overview

1.3.1 Project Purpose

This section of the Application will expand on the Project purpose provided below.

The Province of British Columbia and BC Hydro are encouraging the private sector to pursue independent power projects (IPPs) that will help BC meet its goals of energy self sufficiency in the future. The proposed generating capacity of the Project would be a step forward in meeting the goal of domestic power generation as well as deliver 'green' power in response to the BC Government Green Plan.

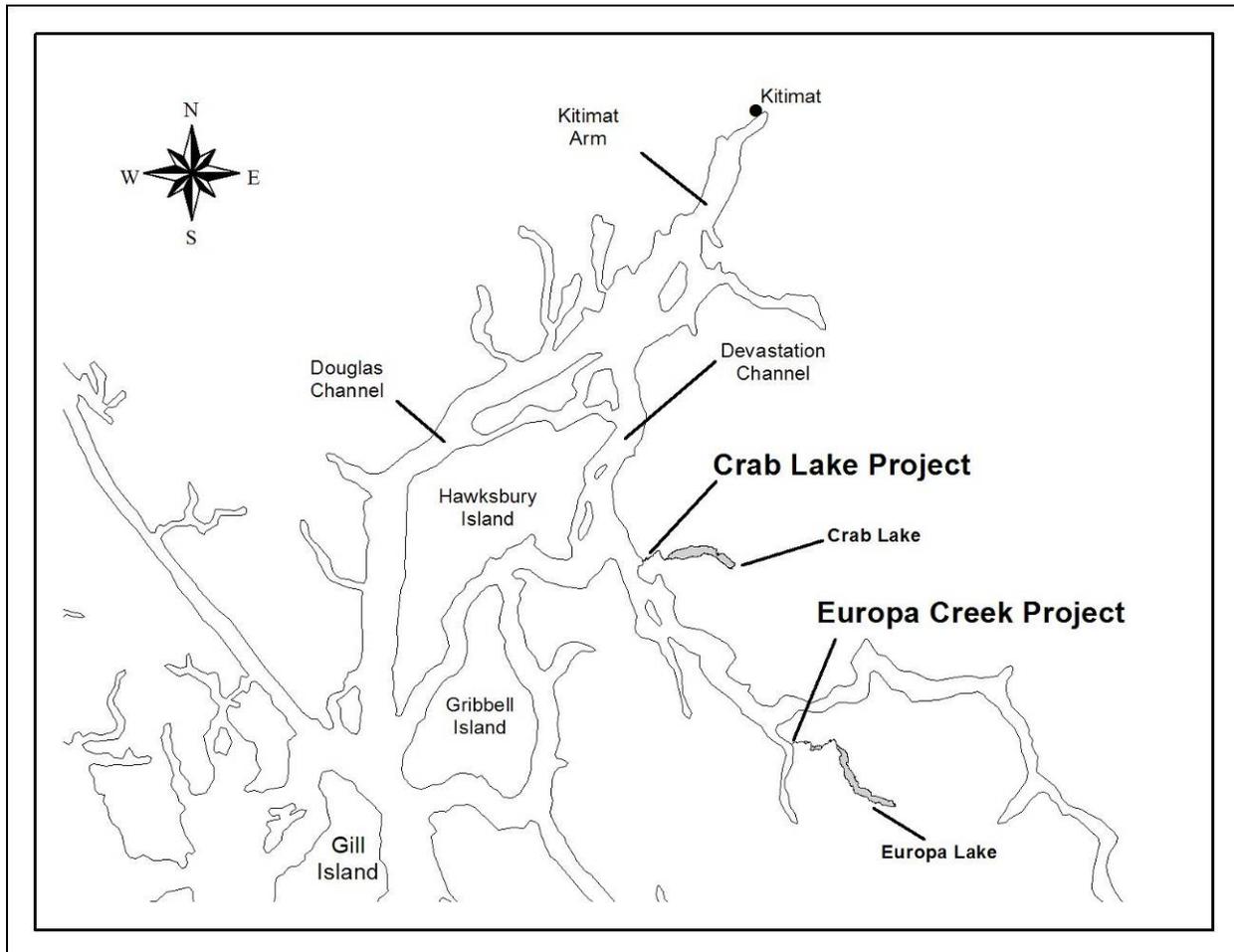
The proponent is anticipating a BC Hydro call for energy bids in early 2008 and is planning to submit the project to BC Hydro in response to this call. Should the Project receive an Energy Supply Contract, which could be issued as early as spring 2008, the Project would be constructed to provide energy to BC Hydro for domestic and industrial purposes.

1.3.2 Project Location

This section of the Application will include an expanded description of the Project location with reference to the location of specific Project components. Maps will be provided and land tenure status for all Project component locations will be outlined. An overview of the Project location is provided in the following paragraph.

The Crab River facility is located on the Crab River between Crab Lake and its outlet into Allan Reach. The Europa Creek facility is located on Europa Creek between Europa Lake and Kiltuish Inlet. Figure 1-1 provides a general overview of the Project area, which is situated in the Kitimat-Stikine Regional District.

Figure 1-1. Overview location of the Project



1.3.3 Project Components

This section of the Application will include a description of the Project size, main features, and a listing of the Project elements to be included in the “Project Scope”.

1.3.4 Project Benefits

This section of the Application will summarize the Project benefits including estimation of total labour force (direct jobs) required during construction and operation.

1.3.5 Estimated Capital Cost

This section of the Application will provide a capital cost estimate for the Project.

1.4 Regulatory Framework

The Application will outline the regulatory framework of the Project, including:

- A summary of relevant provincial and federal legislative and policy requirements governing the Project, and any applicable local government planning and zoning requirements.
- An outline of reasons for environmental review.
- Licenses, permits and authorizations required for Project construction and operation.
- Orders and agreements applying to the review.
- Advise if a request for concurrent EA certification and permitting is being requested under the BCEAA.

1.4.1 Need for Regulatory Review

This Project is subject to review under the BCEAA given that the planned capacity exceeds the 50 MW threshold under the Reviewable Projects Regulation. The Project will also require a screening-level review under CEAA as it will require at least one license, permit or approval listed in the Law List Regulations.

The following are the major permits or authorizations required for the development of the Project:

1. *Fisheries Act* Authorizations
2. *Land Act* – land tenure
3. *Water Act* – Water Licence
4. *Forest and Range Protection Act* – Licence to Cut
5. *Navigable Waters Protection Act* Approval

Other permits and authorizations required will be identified as the Project proceeds and may include a *Species at Risk Act* permit. The proponent intends to apply for concurrent permitting under the BCEAA review process and the details of these permits will be addressed as design and construction planning proceeds.

The *Land Act*, *Water Act* and *Forest and Range Practices Act* permits and licences fall under provincial jurisdiction and the proponent intends to apply for these concurrently with the Environmental Assessment Certificate Application as outlined in the BC Environmental Assessment Act. The *Fisheries Act* authorizations and the *Navigable Waters Protection Act* Approval fall under federal jurisdiction and, while they are normally dealt with under the concurrent CEAA review, it is expected that the provincial review will take these authorizations and Approval into account as part of the granting of environmental certification.

2.0 Information Distribution and Consultation

This section will summarize the Proponents past and proposed consultation (approach and associated activities), in accordance with the consultation provisions of the Section 11 Order, once issued. The public consultation measures will also be in compliance with the “Public Consultation Policy Regulation” (BC Reg 373/2002).

2.1 Consultation Overview

This section of the Application will provide an overview of the consultation activities undertaken with First Nations, government agencies, stakeholders and the public.

2.2 First Nations Consultation

2.2.1 Pre-Application Consultation

This section of the Application will describe the pre-Application consultation undertaken with First Nations. Specifically, it will:

- Provide a listing of contacts made with study area First Nations during the Project technical studies (i.e., environmental and socio-economic) as well as during consultation events.
- Describe the efforts undertaken to distribute Project information to the First Nations.
- Identify the information and materials distributed to First Nations.
- Provide a summary of questions and concerns raised and responses provided through the environmental and socio-economic impact assessments as well as at consultation events and through direct contact. This will include an indication as to whether the issue is considered resolved or outstanding.
- Identify how any unresolved issues will be addressed.

This section will also provide a description of the understandings reached with First Nations regarding consultation related to the Project (excluding any confidential information).

As the Project advances, the scope of the First Nation consultation activities necessary to meet government consultation guidelines will be discussed with the Environmental Assessment Office and the required studies and consultation activities completed. It is anticipated that the Haisla Nation will be actively involved with the Project and participate as representatives of the Kitimaat Renewable Energy Corporation in public and local government consultation activities.

2.2.2 Future Consultation Activities

This section will outline the Proponent’s proposed First Nations consultation program during the Application review stage and during construction and operations, where required. It will also document the proposed process for attempting to resolve outstanding issues.

2.3 Consultation with Government Agencies

This section of the Application will describe consultation with federal, provincial, regional and local government agencies.

2.3.1 Pre-Application Consultation

This section of the Application will describe the pre-Application consultation undertaken with government agencies. Specifically, it will:

- Provide a listing of contacts made during the Project technical studies (i.e., environmental and socio-economic) as well as during consultation events.
- Describe the efforts undertaken to distribute Project information to government agencies and identify the information and materials distributed.
- Provide a summary of questions and concerns raised and responses provided through the environmental and socio-economic impact assessments as well as at consultation events and through direct contact. This will include an indication as to whether the issue is considered resolved or outstanding.
- Identify how any unresolved issues will be addressed.

2.3.2 Future Consultation Activities

This section will outline the consultation proposed to be undertaken with government agencies during the Application review stage and, should the Project be approved, during construction and operations, where required. It will also document the proposed process for attempting to resolve outstanding issues.

2.4 Consultation with the Public, Special Interest Groups and Key Stakeholders

This section of the Application will describe consultation undertaken with the public, special interest groups and key stakeholders with interests that could potentially be affected by the Project.

2.4.1 Pre-Application Consultation

This section of the Application will describe the pre-Application consultation undertaken with the public and special interest groups. Specifically, it will:

- Provide a listing of contacts made during the Project technical studies (i.e., environmental and socio-economic) as well as during consultation events.
- Describe the efforts undertaken to distribute Project information and identify the information and materials distributed.
- Provide a summary of questions and concerns raised and responses provided through the environmental and socio-economic impact assessments as well as at consultation events

and through direct contact. This will include an indication as to whether the issue is considered resolved or outstanding.

- Identify how any unresolved issues will be addressed.

2.4.2 Future Consultation Activities

This section will outline the consultation proposed to be undertaken with the public and special interest groups during the Application review period and, should the Project be approved, during construction and operations, where required. It will also document the proposed process for attempting to resolve outstanding issues.

3.0 Project Description and Scope of Project

This section of the Application will describe the Project facilities and activities associated with the construction, operation/maintenance and decommissioning/reclamation phases of the Project. Where appropriate, each section will contain separate descriptions of the Crab River and Europa Creek facilities. The description of the Project will be consistent with the scope established in the Section 11 Order.

3.1 Project Background and Rationale

The Application will describe:

- Project history.
- Rationale for the Project, and description of the Project objectives.
- Description of any sustainability principles which have guided Project planning.

3.2 Location of Project and Mapping

Maps and drawings provided in the Application will be georeferenced and will include:

- General regional setting and layout of Project components and activities (as described in Section 3.3).
- Site plans/sketches/photographs with Project location, site features and activities identified on maps.
- Plan and section drawings for the weir, intake, penstock and the powerhouse/tailrace for the Crab River and Europa Creek facilities.
- Scale plan showing proposed upgrades and/or installation of barge ramp facilities and any new infrastructure required.
- Proximity to designated environmentally sensitive areas or cultural sites, such as national/provincial/regional parks, ecological reserves, heritage sites and other sensitive areas.

Figure 3-1 provides a conceptual general layout for the Crab River facility. Figure 3-2 provides a conceptual general layout for the Europa Creek facility. Figure 3-3 provides a conceptual overview of the proposed transmission line locations. All elevations will be subject to confirmation once the conceptual design has been completed.

Figure 3-1. Conceptual general layout of Crab River facility

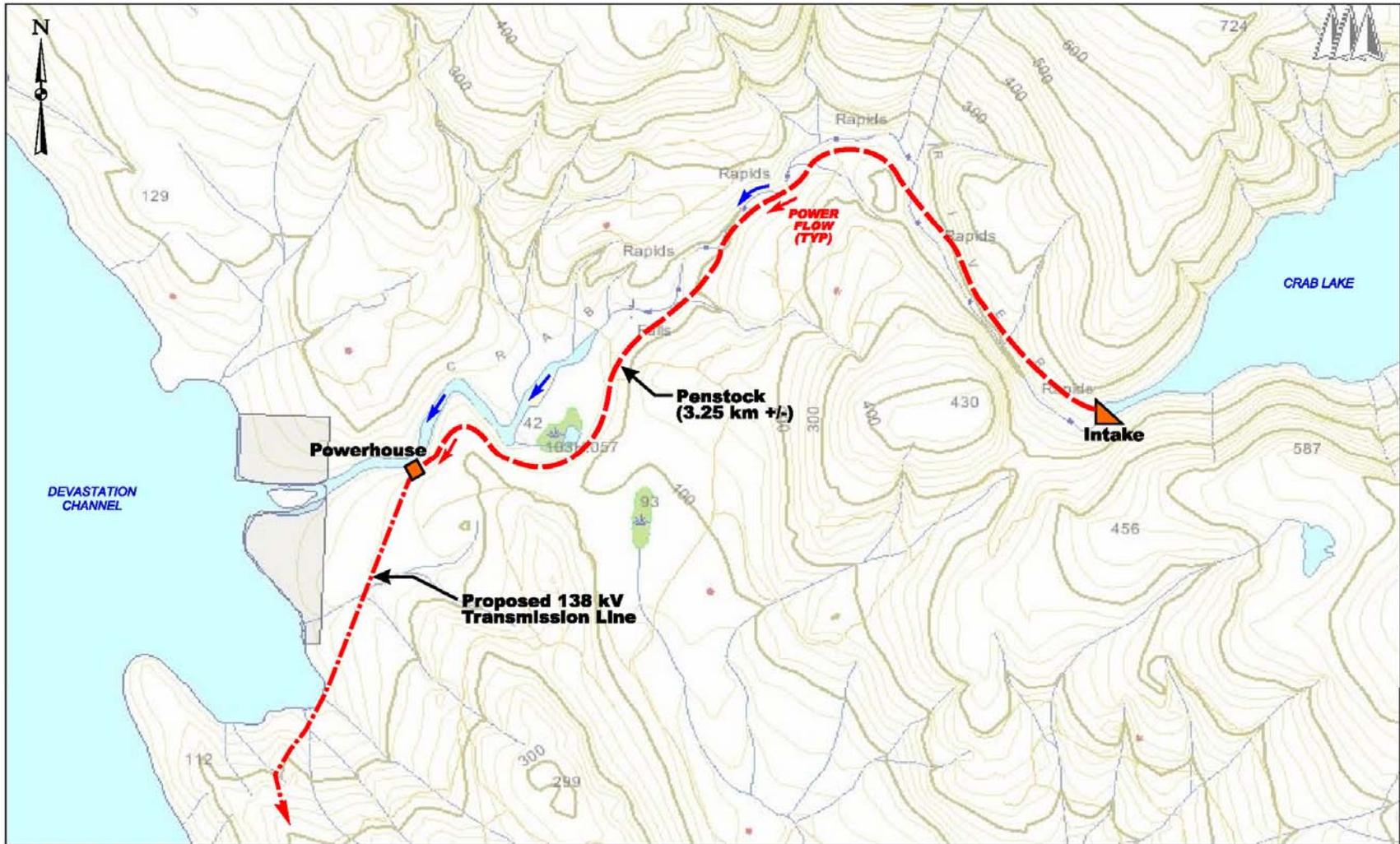


FIGURE B
Crab Lake Project Area
EUROPA AND CRAB LAKE HYDROELECTRIC PROJECT
Kitimaat Renewable Energy Corp.
AUGUST 17, 2007

Figure 3-2. Conceptual general layout of Europa Creek facility

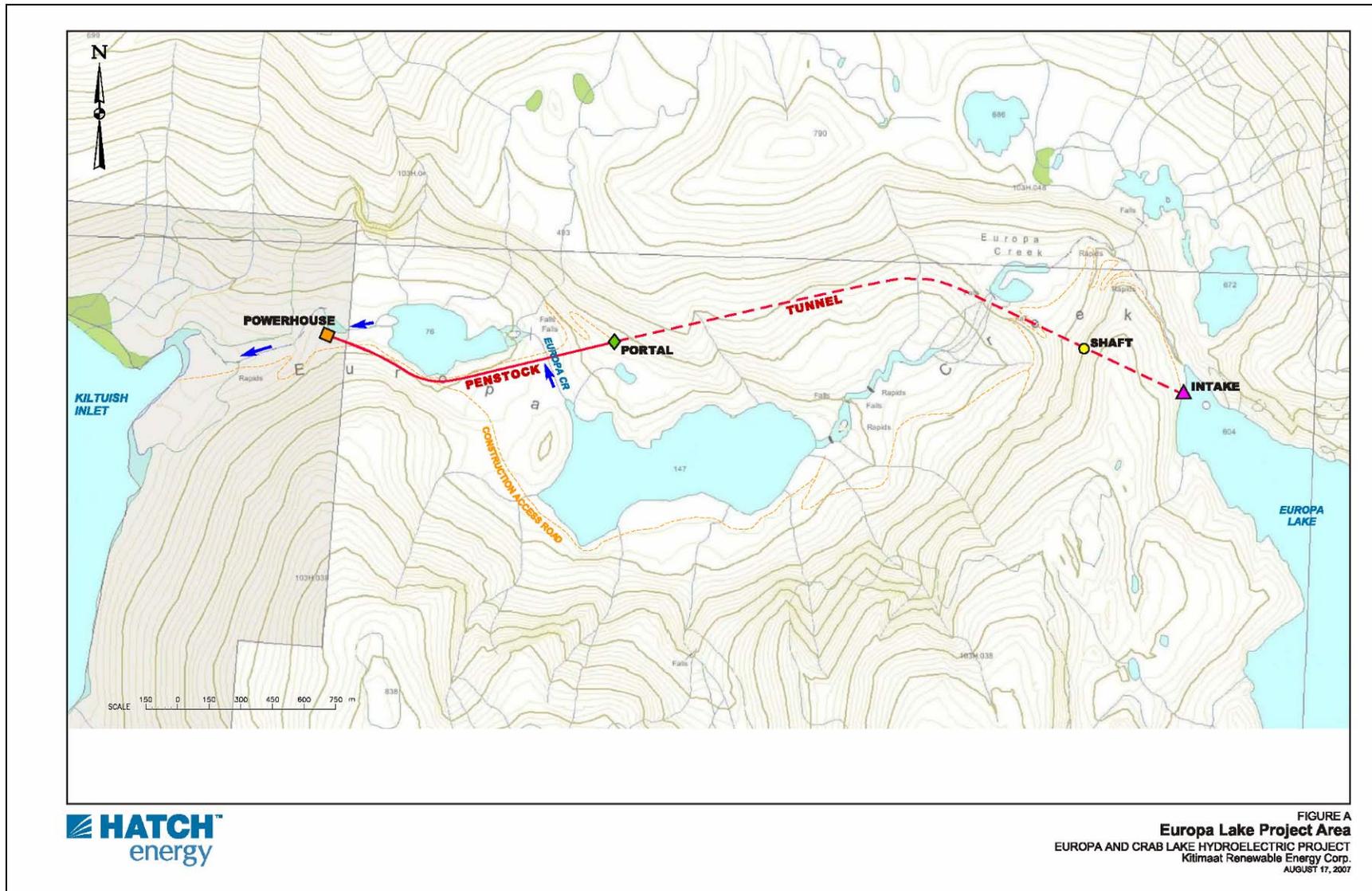
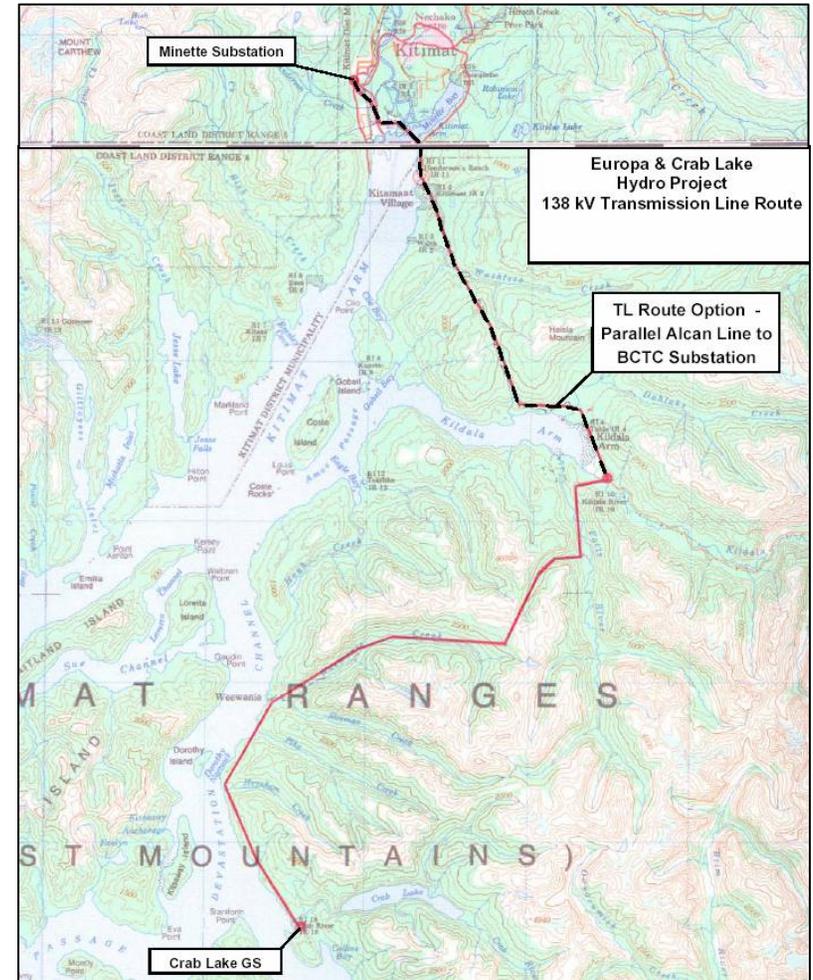
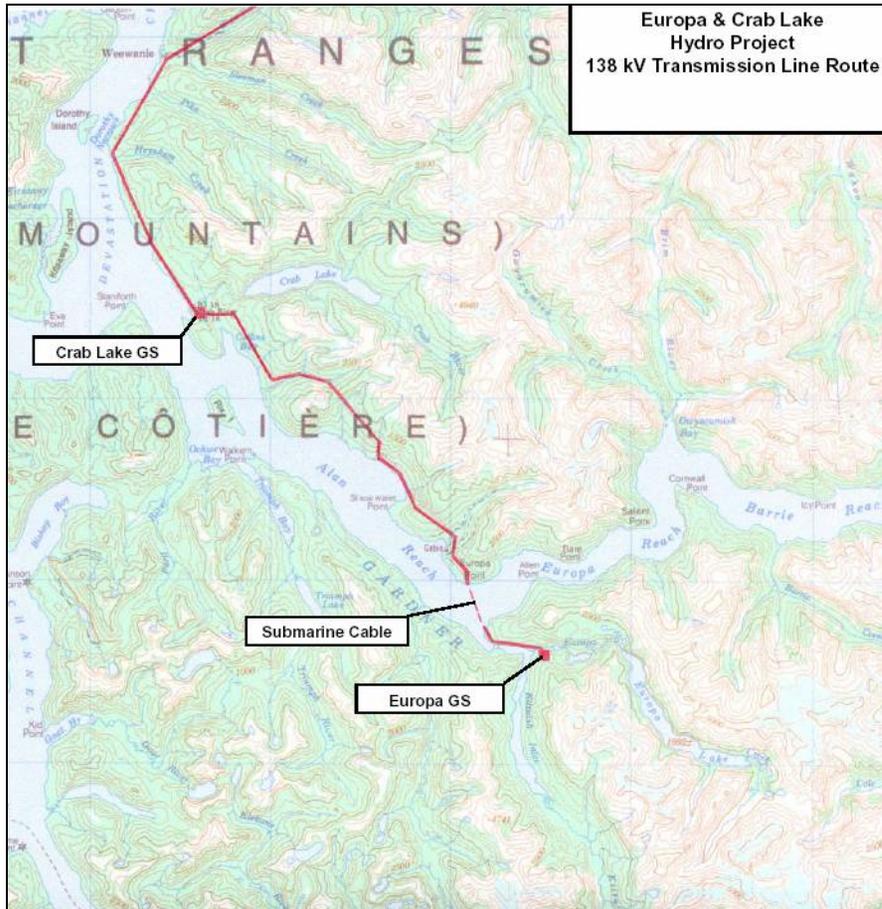


Figure 3-3. Proposed transmission line route



3.3 Project Facilities

The Application will include a description of proposed on-site Project components and associated on-site and off-site infrastructure and other facilities to be developed for the Project. A complete list of conceptual details of the Project components will be provided in the Application including:

- o Powerhouses (turbines, capacity, types).
- o Penstocks.
- o Headponds, weirs and tailrace facilities.
- o Plan and section drawings of the transmission corridor including aerial crossings and stream crossings.
- o Connection to grid (transmission corridor).
- o Access details including upgrades to/installation of barge facilities and helipad.
- o Access roads.
- o Staging areas (including camp facilities).
- o Spoil areas including disposal methods for tunnel spoils.
- o Location of intakes and outfalls for camp water supplies and sewage disposal.

3.4 Construction Phase Activities

The Application will include:

- A detailed description of planned construction activities, such as site-clearing and preparation, tunneling activities, foundations, utilities and building structures.
- An estimate of construction scheduling, using best available information.
- Description of intended approaches for delivery of services required for the construction phase and associated logistics.
- Plans for disposal of tunnel spoils, including any reactive waste rock generated from intake, power tunnel and powerhouse excavation.
- Barge site upgrades required for materials delivery.

3.5 Operations Phase Activities

The Application will include:

- Description of operations-phase activities including intended approaches for delivery of services and associated logistics. Scheduling estimates will be provided using best available information for all activities associated with the operations phase of the Project. Operations activities will include:

- o Maintenance procedures for roads, transmission lines and other infrastructure (including transmission line corridor vegetation management activities, including any proposed herbicide use).
- o Operations-stage transportation/traffic.
- o Operating workforce services.
- o Emergency procedures.

3.6 *Decommissioning and Reclamation*

The Application will include:

- Expected lifetime of the Project or of any temporary Project components.
- Conceptual plans for decommissioning (where applicable) such as removal of structures and equipment and remediation plans.

4.0 Scope of Assessment and Study Areas

This section of the Application will outline the scope of assessment and define study area boundaries.

4.1 Scope of Assessment

This section of the Application will define the scope of the assessment, which includes the potential direct and indirect Project effects (and benefits) and will take into account practical means to prevent or reduce to an acceptable level any potential adverse effects of the Project. Where appropriate, each section will contain separate descriptions of the Crab River and Europa Creek facilities.

4.1.1 Defining Study Areas for Assessment Purposes

In the Application, study area boundaries will be defined in time and space. The Application will clearly indicate the study area boundaries used for each component of the impact assessment, and will include an explanation of the rationale adopted for establishing study area boundaries.

Studies within the defined study areas will take into account the timeframes over which the effects originating from the construction, operation and maintenance and, where relevant, decommissioning of Project components are anticipated to occur. Spatial boundaries will be based on the zone of Project influence and areas outside of which the effects of the Project are expected to be minimal. Multiple study area boundaries will be employed, if necessary, reflecting the range of geographic areas within which specific effects may be experienced.

Temporal boundaries will consider the length of time (short term/long term) over which construction and operations-related effects of the Project are expected to occur. Temporal boundaries may differ for each environmental component. Effects associated with decommissioning will not be included in the scope of this assessment as run-of-river hydro projects typically are expected to be operational for the foreseeable future.

4.2 Study Area Boundaries

The determination of study area boundaries will take into account all project components and their individual zone of influence, beyond which Project effects are expected to be undetectable.

4.2.1 Biological Resources

The Application will include a description of the spatial and temporal study area boundaries identified for assessment of biological resources potentially affected by the Project. The boundaries may vary between environmental components and rationale will be provided as to how assessment areas were determined. The Application will include maps of appropriate scale showing the geographical areas and timeframes used for documenting the baseline setting and assessing potential project impacts.

4.2.2 Socio-Economic Resources

The Application will identify study area(s) timeframe(s) used for baseline characterization and assessment of socio-community and First Nations issues.

5.0 Project Setting and Characteristics

This section of the Application will present a general description of the existing biophysical environment and the socio-economic/community and cultural/heritage settings of the Project, including surrounding areas within the zone of potential influence of the Project as described in the study area boundaries. Each project component (Crab River, Europa Creek and transmission line corridor) will be presented as a separate section including all of the following sections.

With respect to the biophysical environment, this section will focus on the environmental components that may be affected by the Project. A rationale will be provided for considering certain environmental components and not others in the EA review. This section will provide a similar treatment for the land use interests and archaeological setting within the Project area.

The baseline information presented in this section will be used as the basis for analysis of Project impacts, proposed mitigation and compensation (if required).

5.1 Geophysical Environment

A brief description of the geophysical environment in the Project area will be included in the Application. The description will include information on:

- **Physiography and Topography:** description of regional/area setting and identification of key terrain features (*e.g.*, mountains, rivers, lakes, marine environment).
- **Soils and Geology:** general geotechnical/soils/stability information for the Project area, including soil classification, information on erosion potential.
- **Hydrogeology and Groundwater:** overview of hydrogeology, groundwater flow regimes and groundwater quality, including quantified estimates of baseline flow regimes and any planned extraction volumes to supply groundwater to the Project, as required.
- **Natural Hazards:** background information on seismology and earthquake potential, avalanche potential, landslide and debris flow potential, flood potential and other possible natural hazards, as required.
- **Subsurface Resources:** discussion of how Project will affect access to subsurface resources and plans to address concerns of pre-existing tenure holders in the vicinity of permanent works.

5.2 Atmospheric Environment

A brief description of the atmospheric environment in the Project area will be included in the Application. The description will include information on:

- **Climate:** description of the prevailing climate, and identification of data sources, including recording stations, used for characterizing baseline conditions.
- **Precipitation:** data on area precipitation, including volume and frequency.

5.3 Aquatic Environment and Surface Hydrology

The Application will contain a description of the aquatic habitats and fauna, surface hydrology, and surface water quality found within the Project zone of influence, including along the transmission line corridor and construction and operations-phase access routes.

5.3.1 Aquatic Environment

The Application will contain a description of the aquatic environment in the Project and will include the following:

- Identification of watercourses within the Project area.
- Fish habitat assessments completed on RISC Site Cards as per the *Reconnaissance Fish and Fish Habitat Inventory: Procedures and Standards Version 2.0* (Resource Inventory Committee, 2001).
- Description of fish habitat within mesohabitat types with reference to available Habitat Suitability Indices (HSI).
- In-stream flow requirements for the maintenance of fish habitat, according to the principles found in Lewis *et al.* (2004).

5.3.2 Aquatic Fauna

The Application will contain a description of freshwater species and their distribution within the Project area. The Application will supplement the existing background fisheries information with Project-specific studies to provide the following:

- Fish-bearing status of tributaries within the facility footprints, as per the *Fish Stream Identification Guidebook* (Forest Practices Code of British Columbia 1998).
- A general assessment of fish presence and absence throughout the Project area, based both on field sampling, historical data and on conservative GIS gradient analysis.
- An assessment of fish distribution within the Project area in space and time, including the timing of spawning, incubation, migration, rearing and over-wintering for species within the zone of influence.

5.3.3 Aquatic Listed Species

The Application will identify listed aquatic species identified under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and federal Species at Risk Act (SARA), and by the BC Conservation Data Centre. Table 5-1 outlines the currently identified listed aquatic species with the potential to occur within the Project Area.

Table 5-1. Aquatic listed species

English Name	Scientific Name	BC Status ¹	COSEWIC ²	Type
Cutthroat Trout, <i>clarkii</i> Subspecies	<i>Oncorhynchus clarkii clarkii</i>	Blue		Fishes

English Name	Scientific Name	BC Status¹	COSEWIC²	Type
Dolly Varden	<i>Salvelinus malma</i>	Blue		Fishes
Eulachon	<i>Thaleichthys pacificus</i>	Blue		Fishes

5.3.4 Surface Hydrology

The Application will provide information on surface hydrological regimes, including quantified estimates of baseline flow regimes and proposed extraction volumes. The hydrology assessment will be based on the principles found in *Assessment Methods for Aquatic Habitat and Instream Flow Characteristics in Support of Applications to Dam, Divert or Extract Water from Streams in British Columbia* (Lewis *et al.*, 2004) and the *Draft Guidelines for Instream Flow Measurement for Waterpower Projects* (Land and Water BC, 2003). Stream flow hydrographs will be developed for the Crab River and Europa Creek diversion points.

Automated gauging stations have been installed on both the Crab River and Europa Creek to establish baseline flows for the Project. Periodic flow gauging will be undertaken to Resource Inventory Committee (1998) *Manual of Standard Operating Procedures for Hydrometric Surveys in British Columbia* and consistent with Water Survey of Canada system of national standards for hydrometric surveys. The manual flow gauging and data from the gauging station will be used to complete the assessment and establish a stage-discharge curve for the Project.

5.3.5 Surface Water Quality

The Application will characterize water quality including:

- Baseline water quality parameters including total suspended solids, specific conductance, total alkalinity, pH, total phosphorus, turbidity, soluble reactive phosphorus (SRP), ammonia, nitrite and nitrate.
- The range of dissolved oxygen and Total Gas Pressure (TGP) within the Project footprint area.
- The seasonal water temperature regime in Crab River and Europa Creek, as recorded by remote data loggers.

The Application will also describe:

- How the water quality sampling program will be consistent with standards found in the *British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment and Biological Samples* (Clark, 2003) and *Guidelines for the Collection and Analysis of Water and Wastewater Samples for Legal Evidence. For Ministry Use Only. 2001 Edition* (Ministry of Environment, Lands and Parks, 2001).
- How the water quality analysis for evaluating observed data and current conditions will be consistent with both *Approved and Working Water Quality Guidelines* (MOE, 2006; Nagpal *et al.*, 2001) as well as the *Canadian Water Quality Guidelines for the Protection of Freshwater and Aquatic Life* (CCME, 1987 and updates).

- Baseline water quality sample site locations on Crab River and Europa Creek and the rationale used to locate the sites.
- Available historical water quality data collected for the watersheds.

5.4 Marine Environment

The Application will contain a description of the marine habitat and fauna found within the zone of influence of the Project area, including the transmission line corridor and construction and operations-phase of access routes.

5.4.1 Marine Environment

The Application will contain a description of the marine environment in the Project area, and will include the following:

- Results of marine habitat assessments for species potentially affected by the Project.
- Results of intertidal and subtidal marine surveys and marine mammal habitat assessments for areas and species affected by the Project.

5.4.2 Marine Fauna

The Application will contain results of a survey of marine species and distribution within the Project area including fish, invertebrates, shellfish and marine mammals.

Preliminary observations of the marine foreshore in the Project area indicate the sites are characterized by steep sided bedrock and boulder foreshore, typical of the area. Subtidal areas can be characterized by softer sediment substrates graduating to shell hash, cobble and gravel. Initial observations indicate species diversity is relatively low due to a combination of strong currents and past log booming activities.

5.4.3 Marine Water Quality

The Application will provide a marine water quality plan to characterize baseline water quality parameters prior to any proposed marine construction, including:

- Baseline water quality parameters including total suspended solids, total dissolved gas, specific conductance, total alkalinity, pH, total phosphorus, turbidity, soluble reactive phosphorus, ammonia, chloride, nitrite and nitrate.

5.4.4 Marine Listed Species

The application will identify listed marine species identified under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and federal Species at Risk Act (SARA), and by the BC Conservation Data Centre. Table 5-2 outlines the currently identified listed marine species with the potential to occur within the Project area.

Table 5-2. Marine listed species

English Name	Scientific Name	BC Status¹	COSEWIC²	Type
Leatherback turtle	<i>Dermochelys coriacea</i>	Red	E (May 2001)	Turtles
Grey whale	<i>Eschrichtius robustus</i>	Blue	SC (May 2004)	Mammals
Steller sea lion	<i>Eumetopias jubatus</i>	Blue	SC (Nov 2003)	Mammals
Humpback whale	<i>Megaptera novaeangliae</i>	Blue	T (May 2003)	Mammals
Cutthroat trout, <i>clarkii</i> subspecies	<i>Oncorhynchus clarkii clarkii</i>	Blue		Ray-finned fishes
Killer whale (Northeast Pacific offshore population)	<i>Orcinus orca</i> pop. 2	Blue	SC (Nov 2001)	Mammals
Killer whale (West Coast transient population)	<i>Orcinus orca</i> pop. 3	Red	T (Nov 2001)	Mammals
Killer whale (Northeast Pacific Northern resident population)	<i>Orcinus orca</i> pop. 6	Blue	E/T* (Nov 2001)	Mammals
Dolly Varden	<i>Salvelinus malma</i>	Blue		Ray-finned fishes
Eulachon	<i>Thaleichthys pacificus</i>	Blue		Ray-finned fishes

*E/T – southern population is Endangered; northern population is Threatened.

The Application will provide strategies to mitigate potential impacts to Species at Risk during the construction and operation phases of the Project.

5.5 Terrestrial Environment

The Application will contain a description of the terrestrial environment, which will include the terrestrial ecosystems and wildlife species and habitats found in the Project area including Crab River and Europa Creek and along the proposed transmission line and access corridors as outlined in Section 4.0. The Application will also report the findings of ongoing assessments which will include:

- Development of constraint mapping for the Project area and transmission corridor, to provide a spatial representation of environmental sensitivities to be incorporated into the Project design;
- Determination of the core or critical habitat of the species of concern and how much of that core or critical habitat will be impacted by the footprint.
- Determination of the suitability and wildlife habitat ratings of the Project area at the landscape level using additional terrestrial ecosystem mapping (TEM) mapping to stratify the landscape into map units.

Gaps in wildlife information will be determined based on existing information and the constraint mapping. Once the constraint mapping is complete an assessment of gaps in vegetation and wildlife data will be undertaken and field studies designed accordingly.

5.5.1 Terrain and Soils

The Application will include a description of the terrestrial setting in the Project area. Background information review indicates the entire Project occurs within the Coastal Western Hemlock (CWH) and Mountain Hemlock (MH) biogeoclimatic zones. The CWH zone occurs west of the Coast Mountains in lower elevations and east along major river valleys while the MH zone extends above the CWH to elevations of approximately 1000 m. The Project area encompasses mountainous landscapes which provide a variety of habitats for key species of concern. Modifications to the Project area landscape have included settlement, timber harvesting and road development.

5.5.2 Terrestrial Ecosystems

The Application will also include a description of wetland community types potentially affected by the Project following accepted classification systems. Potentially affected wetlands will be characterized through a description of the ecological and physical functions they provide and plant and wildlife species they support. The *Wetlands Environmental Assessment Guideline* (Environment Canada, 1998) will be followed when addressing issues related to potential mitigation measures.

The occurrence of ecological reserves (existing or potential) in the Project area will also be identified.

5.5.3 Listed Plants and Plant Communities

The Application will identify listed plants and plant communities identified under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and federal Species at Risk Act (SARA), and by the BC Conservation Data Centre. Tables 5-3 and 5-4 outline the currently identified listed plants and plant communities with the potential to occur within the Project Area.

Table 5-3. Listed plant species

English Name	Scientific Name	BC Status¹	COSEWIC²	Type
Arctic Daisy	<i>Leucanthemum arcticum</i>	Red		Dicots
Dotted Saxifrage	<i>Saxifraga nelsoniana</i> ssp. <i>carlottae</i>	Blue		Dicots
Dwarf Bog Bunchberry	<i>Cornus suecica</i>	Red		Dicots
Four-leaved Mare's-tail	<i>Hippuris tetraphylla</i>	Blue		Dicots
Meadow Arnica	<i>Arnica chamissonis</i> ssp. <i>incana</i>	Blue		Dicots
Menzies' Burnet	<i>Sanguisorba menziesii</i>	Blue		Dicots
Northern Jacob's-ladder	<i>Polemonium boreale</i>	Blue		Dicots
Queen Charlotte Butterweed	<i>Senecio moresbiensis</i>	Blue		Dicots
Two-edged Water-starwort	<i>Callitriche heterophylla</i> ssp. <i>heterophylla</i>	Blue		Dicots
Yellow Marsh-marigold	<i>Caltha palustris</i> var. <i>palustris</i>	Blue		Dicots
Alaska Holly Fern	<i>Polystichum setigerum</i>	Red		Ferns

English Name	Scientific Name	BC Status¹	COSEWIC²	Type
Arctic Rush	<i>Juncus arcticus</i> ssp. <i>alaskanus</i>	Blue		Monocots
Bog Adder's-mouth Orchid	<i>Malaxis paludosa</i>	Blue		Monocots
Bog Rush	<i>Juncus stygius</i>	Blue		Monocots
Dune Bentgrass	<i>Agrostis pallens</i>	Blue		Monocots
Flowering Quillwort	<i>Lilaea scilloides</i>	Blue		Monocots
Gmelin's Sedge	<i>Carex gmelinii</i>	Blue		Monocots
Graceful Arrow-grass	<i>Triglochin concinna</i>	Red		Monocots
Kamchatka Spike-rush	<i>Eleocharis kamtschatica</i>	Blue		Monocots
Lesser Saltmarsh Sedge	<i>Carex glareosa</i> var. <i>amphigena</i>	Blue		Monocots
White-lip Rein Orchid	<i>Piperia candida</i>	Red		Monocots

Table 5-4. Listed plant communities

English Name	BC Status¹	BGC/Site Series
Amabilis Fir - Sitka Spruce / Devil's Club	Blue	CWHvm1/08;CWHvm2/08
Sitka Sedge / Peat-mosses	Red	CWHvm1/Wf51;CWHvm2/Wf51
Labrador Tea / Western Bog-laurel / Peat-mosses	Blue	CWHvm1/Wb50
Sitka spruce / salmonberry Very Wet Maritime	Red	CWHvm1/09
Black Cottonwood - Red Alder / Salmonberry	Blue	CWHvm1/10
Sitka Willow / Sitka Sedge	Blue	CWHvm1/Ws06;CWHvm2/Ws06
western redcedar - Sitka spruce / skunk cabbage	Blue	CWHvm1/14
western redcedar - western hemlock / sword fern	Blue	CWHvm1/04;CWHvm2/04
western hemlock - western redcedar / salal Very Wet Maritime	Blue	CWHvm1/03;CWHvm2/03

¹BC Status = Yellow-Not at Risk, Blue-Species of Concern, Red-Threatened or Endangered

²COSEWIC = NAR-Not at Risk, DD-Data Deficient, SC-Special Concern, T-Threatened, E-Endangered

5.5.4 Amphibian Species

The Application will identify amphibian species present within the Project area. Amphibian species identified under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and federal Species at Risk Act (SARA), and by the BC Conservation Data Centre. Table 5-5 outlines the currently identified listed amphibian species with the potential to occur within the Project Area.

Table 5-5. Listed amphibian species

English Name	Scientific Name	BC Status	COSEWIC	Type
Coastal Tailed Frog	<i>Ascaphus truei</i>	Blue	SC (May 2000)	Amphibians
Western Toad	<i>Bufo boreas</i>	Yellow	SC (Nov 2002)	Amphibians
Leatherback	<i>Dermochelys coriacea</i>	Red	E (May 2001)	Turtles

5.5.5 Birds

The Migratory Birds Convention Act identifies a number of waterfowl and passerine species which will need to be considered such as harlequin ducks (*Histrionicus histrionicus*) to ensure that their nesting habitats are not affected by the Project.

The following best management practice guidelines will be reviewed and referenced in the Application to develop mitigation strategies and management guidelines:

- Migratory Birds Environmental Assessment Guideline (Environment Canada, 1998).
- Environmental Assessment Guideline for Forest Habitat of Migratory Birds (Environment Canada, 1998).
- Interim Canadian Wildlife Service (PYR) Guidance for Addressing Migratory Birds and Species at Risk in Project Environmental Assessment.

5.5.6 Listed Bird Species

The Application will identify listed bird species under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and federal Species at Risk Act (SARA), and by the BC Conservation Data Center. Table 5-6 outlines the currently identified listed bird species with the potential to occur within the Project Area.

Table 5-6. Listed bird species

English Name	Scientific Name	BC Status¹	COSEWIC²	Type
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	Blue		Birds
Barn Swallow	<i>Hirundo rustica</i>	Blue		Birds
Canada Goose, <i>occidentalis</i> Subspecies	<i>Branta canadensis occidentalis</i>	Blue		Birds
Cassin's Auklet	<i>Ptychoramphus aleuticus</i>	Blue		Birds
Common Murre	<i>Uria aalge</i>	Red		Birds
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	Blue	NAR (May 1978)	Birds
Great Blue Heron, <i>fannini</i> Subspecies	<i>Ardea herodias fannini</i>	Blue	SC (May 1997)	Birds
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	Red	T (Nov 2000)	Birds
Northern Goshawk, <i>laingi</i> Subspecies	<i>Accipiter gentilis laingi</i>	Red	T (Nov 2000)	Birds
Pelagic Cormorant, <i>pelagicus</i> Subspecies	<i>Phalacrocorax pelagicus pelagicus</i>	Red		Birds
Peregrine Falcon, <i>pealei</i> Subspecies	<i>Falco peregrinus pealei</i>	Blue	SC (Apr 2007)	Birds
Pine Grosbeak, <i>carlottae</i> Subspecies	<i>Pinicola enucleator carlottae</i>	Blue		Birds
Sandhill Crane	<i>Grus canadensis</i>	Blue	NAR (May 1979)	Birds
Tufted Puffin	<i>Fratercula cirrhata</i>	Blue		Birds
Western Grebe	<i>Aechmophorus occidentalis</i>	Red		Birds

English Name	Scientific Name	BC Status¹	COSEWIC²	Type
Western Screech-owl, <i>kennicottii</i> Subspecies	<i>Megascops kennicottii</i> <i>kennicottii</i>	Blue	SC (May 2002)	Birds

5.5.7 Terrestrial Mammals

The Application will include information pertaining to existing terrestrial wildlife populations and wildlife habitat information. It will also provide lists of available data sources, summarize inventories, and provide wildlife suitability ratings based on habitat mapping under the different project phases.

The Application will identify any critical or important habitats or habitat features for species of management concern and present mitigation strategies for the conservation of the species and their valued habitat. The intent will be to mitigate to the greatest extent possible and reduce any residual effects to a point where no significant residual effect would be anticipated for these species. For example it is known that mountain goat (*Oreamnos americanus*) and Sitka black-tailed deer (*Odocoileus hemionus sitkensis*) have Ungulate Winter Ranges identified under the Forest and Range Practices Act, which will be considered.

The following best management practice guidelines will be reviewed and referenced in the Application to develop mitigation strategies and management guidelines:

- Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada, First Edition (Environment Canada, 2004).

5.5.8 Listed Mammal Species

The Application will identify listed mammal species identified under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and federal Species at Risk Act (SARA), and by the BC Conservation Data Centre. Table 5-7 outlines the currently identified listed mammal species with the potential to occur within the Project Area.

Table 5-7. Listed mammal species

English Name	Scientific Name	BC Status	COSEWIC	Type
Fisher	<i>Martes pennanti</i>	Blue		Mammals
Grizzly Bear	<i>Ursus arctos</i>	Blue	SC (May 2002)	Mammals
Keen's Myotis	<i>Myotis keenii</i>	Unknown	DD (Nov 2003)	Mammals
Wolverine, <i>luscus</i> subspecies	<i>Gulo gulo luscus</i>	Blue	SC (May 2003)	Mammals

5.6 **Land Use Context**

The Application will provide information pertaining to the spatial relationship between the proposed Project and existing land status and use, including on-site and off-site facilities, and activities associated with the proposed facilities as described in Section 1.3.2.

The land use context will be described in the Application, including:

- A description of present land use and any approval land use plans or regimes that may be applicable to the Project area.
- Current land uses such as forestry, mining, commercial recreation and other water uses in the Project area.

5.6.1 Aesthetics

Where there is the potential for key aesthetic landscape values to be affected by the Project, baseline visual quality data will be provided.

5.6.2 Land Acquisition

The Application will provide information pertaining to Crown land requirements for the Project (if any), and any private land acquisition needs, noting if any Crown land is to be converted to fee simple.

5.6.3 Recreation Values

The Application will include a description of current commercial recreation tenures, established forest recreation sites and trails, provincial parks, conservancy areas, and kayaking, rafting and other significant recreation areas within the Project Area.

5.7 *Navigable Waters Issues*

The Application will:

- Geographically reference all plans and drawings in latitude and longitude.
- Provide plan and section drawings for Project infrastructure including proposed weirs, intakes, penstocks, powerhouses, tailraces, barge ramps, bridge crossings, and submarine and aerial cable crossings.
- Identify waterways that will be affected by the Project, waterway dimensions at the points of crossing, and the relative position of any man-made or natural obstructions that block a waterway.
- Provide documentation for proposed transmission line crossing sites including pole height, estimated stream width (Q100), stream depth, distance between Q100 water level and transmission line, and photographs.
- Outline discussions that have occurred with the Navigable Waters Protection Division and Transport Canada regarding the design flood level for structures crossing a waterway, including power transmission lines.
- Document the known current or past usage of waterways.

5.8 Archaeological Setting

British Columbia's archaeological resources are protected under the *Heritage Conservation Act*. An Archaeological Impact Assessment (AIA) will be completed by a qualified archaeologist in accordance with the *Heritage Conservation Act* and the results included in the Application. The AIA will include the following:

- A non-confidential summary of identified archaeological, cultural and heritage resources in the Project area.
- Identification and description of the nature, significance and extent of archaeological resources in the Project area.
- Assessment of potential Project impacts to these resources and suggested mitigation measures.
- Management recommendations for construction and operations activities to minimize risk to identified and unidentified archaeological resources.

6.0 Socio-Community Conditions

6.1 Profile and Demographics

The Application will provide information on the following socio-community conditions for the Project study area:

- **Socio-community profile and population demographics:** documentation of existing population distribution, demographics, and social profile in the study area.
- **Housing:** description of the existing permanent and temporary accommodation supply.
- **Transportation:** description of existing transportation infrastructure in the Project study area.
- **Services:** brief description of existing services, such as education, justice, policing, fire protection, ambulance, utilities, social support, and emergency services in the Project study area.

6.2 Socio-Economic Conditions

The Application will provide information on the following:

- **Local and Regional Economy:** description of the local and regional economy and anticipated trends in the region in the absence of the Project.
- **Local Labour Supply:** description of labour market information (unemployment, labour supply, income, skills/training needs, etc.)
- **Local Businesses:** documentation of existing economic undertakings in the area which could be affected by Project development.

6.3 Public Health

The Application will provide a brief description of existing public health services (based on available information) and identify baseline factors that could affect the public health setting of the Project including noise levels, air and water quality (from a human health perspective).

7.0 Assessment of Project Impacts, Mitigation Requirements and Residual Effects

This section of the Application will address potential effects of the Project, proposed mitigation measures for potential effects, and proposed impact management measures where effects cannot be mitigated. Supporting documents will be referenced and, when practical, attached as appendices. This section will:

- Describe the methodology followed in conducting the EA.
- Note which indicators and data sources were used to consider Project effects.
- Discuss any identified residual effects of the Project.

The Application will describe the potential environmental, social, recreational, economic, health and heritage effects of the Project. The Application will also describe the cumulative environmental effects, the potential for accidents and malfunctions which could affect the natural environment, and the effects of the environment on the Project, including climatic fluctuations and extreme (*e.g.*, natural hazard) events. The assessment will be reported in a format consistent with information presented in Section 5.0 (Project Setting).

7.1 Impact Assessment Methodology

The six-step process outlined below will be used to ensure interactions between the Project components and the environment (as defined in the Project Setting) are adequately described, likely effects are identified and properly assessed, mitigation measures are applied and the significance of any residual effects is determined.

- **Step 1:** Describe the Project facilities and activities.
- **Step 2:** Identify and describe those components of the Project setting (environmental, socio-economic, heritage, etc.) that will be or could be affected by Project development.
- **Step 3:** Describe the nature and extent of the impact of any interaction between the Project and the existing Project setting.
- **Step 4:** Describe proposed measure(s) available to manage the impacts identified above.
- **Step 5:** Identify the magnitude, frequency, duration, extent (geographic or otherwise) and reversibility of any residual effects of the Project after mitigation measures are applied.
- **Step 6:** Assess the significance of any residual effects. (**Note:** for CEEA purposes, the final determination of significance will be made by the federal RA).

With respect to Step 6, the proponent will apply its own rating the significance of residual effects, taking into account mitigation measures. The proponent will use the definitions shown in Table 7-1 (taken from Natural Resources Canada, 2003) for environmental impacts and definitions used for social and economic impacts will be included in the Application.

Table 7-1. Level of impact after mitigation measures

Level	Definition
HIGH	Potential impact could threaten sustainability of the resource within the study area and should be considered a management concern.
MEDIUM	Potential impact could result in a decline in resource within the study area to lower than-baseline, but stable, levels in a study area after Project closure and into the foreseeable future.
LOW	Potential impact may result in slight decline in resource in study area during the life of the Project.
MINIMAL	Potential impact may result in a slight decline in resource in study area during the construction phase, but the resource should return to baseline levels. Timelines for recovery to baseline levels will be specified.

7.2 Effects Assessment – Project Construction

For each Project component, the six-step process listed in Section 7.1 will be used to describe and assess the effects of construction activities on relevant components of the Project setting, as described in Section 5.0. Relevant construction activities include, but are not limited to:

- Site clearing and grubbing.
- Construction/modification of access roads or internal roads.
- Construction of lay-down areas.
- Construction of temporary power generation facilities and infrastructure.
- Construction of camps for workforce.
- Construction of permanent and temporary buildings, structures or facilities (including construction of penstocks, intakes, weirs, generating stations, tailraces, transmission lines, etc.).
- Commissioning of facilities.

The Application will include a complete and detailed list of effects resulting from the full range of Project components.

7.3 Effects Assessment – Project Operations and Maintenance

For each Project component, the six-step process listed in Section 7.1 will be used to describe and assess the effects of operations/maintenance activities on relevant components of the Project setting (as described in Sections 5.0 and 6.0). Relevant operations/maintenance phase activities include, but are not limited to:

- Operation of the power facilities, which may include daily changes in plant loads.
- Maintenance activities linked to operations.
- Any planned or expected improvements to the Project.

7.4 **Effects Assessment – Project Decommissioning**

The six-step process listed in Section 7.1 will be used to describe and assess the effects of decommissioning activities (e.g., dismantling of structures, site reclamation) on relevant components of the Project setting. This section of the Application will refer to relevant legislation should the Project undergo decommissioning and will describe the probable steps that may be taken to decommission the Project.

7.5 **CEAA Content**

The following additional information will be included in the Application according to the CEAA requirements.

7.5.1 Accidents and Malfunctions

The Application will include:

- Assessment of potential for accidents or malfunctions which could lead to environmental impacts and their likely potential effects on the environment or local community settings.
- Documentation of proposed mitigation measures or contingency plans.
- Environmental Management Plan (EMP) described at a conceptual level, indicating general approaches for managing accidents and malfunctions.

7.5.2 Effects of the Environment on the Project

The Application will include an assessment of climatic, extreme events and emissions on the Project.

Climatic Events: Assessment of the potential for short-term and/or long-term climatic fluctuations at the Project site, estimation of the significance of those fluctuations for the Project, and indication of any measures proposed to mitigate these effects. Effects of climate change on the Project will be considered following *Incorporating Climate Change Considerations in Environmental Assessments: General Guide for Practitioners* (Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment, 2003).

Extreme Events: Description of the potential effects of extreme events (e.g., landslides, debris flows, floods, forest fires, avalanche, windstorms, severe icing conditions, possible sudden shutdown and earthquakes) directly on the Project, and indication of measures proposed to mitigate these effects.

7.5.3 Cumulative Environmental Effects

The Application will include a cumulative effects assessment pursuant to federal requirements under CEAA as described in the Cumulative Effects Assessment Practitioners Guide (Hegmann *et al.*, 1999). Where applicable the assessment will include consideration of other current or potential (pre-Application stage) projects and a map will be provided showing the location of any

past, present or reasonably foreseeable projects and/or activities within the zone of influence of the Project. This section of the Application will describe the methodology used to assess potential cumulative effects and a summary of the residual effects.

7.5.4 Effects on Navigable Waters

The Application will include identification of the impact of the Project on use of navigable waters in accordance with Transport Canada guidelines.

7.5.5 Summary of Project Impacts and Mitigation Measures

The Application will include:

- Summary of impact assessment findings – the potential impacts identified and mitigation proposed which will address potential environmental, socio-economic, public health, heritage and First Nations effects of the Project, and summarize how these effects will be managed to reduce them to acceptable levels.
- Benefits of the project and any measures taken to enhance them.
- The summary will also include the results of the cumulative effects assessment conducted in respect of any identified residual effects.
- The significance levels of residual impacts (see Table 7-1) will be estimated after impact management measures have been applied. Table 7-2 will be used as a suggested format for summarizing identified impacts and proposed mitigation measures. Table 7-3 will be used as a suggested format for summarizing cumulative effects for components of the project setting. Simple examples are provided for illustration purposes.

7.5.6 Summary of Commitments

The Application will include a summary table of proposed commitments, including timing of action and the responsible party for addressing each of the actions for which a commitment has been made. The summary will also include significant impact management commitments, including commitments to any standard as well as special management practices and design features, organized by impact topic.

Table 7-2. Sample summary table of mitigation measures and residual impacts

Project Activities	Setting Components Subject to Impacts	Impacts – Short Description	Mitigation Measures	Residual Effects	Level of Residual Impacts
Construction activities – transmission line corridor	Soils and geology	Soil erosion	Restrict slopes	None anticipated	Minimal
	Aquatic	Sedimentation of streams	Reduce number of crossings	Infilling of spawning habitat by fine materials	Moderate
	Wildlife	Increased hunting pressure and mortality	Deactivate roads after construction.	Some short-term impact during construction	Moderate

Table 7-3. Sample summary table of Cumulative Environmental Effects (CEE)

Component of the environment (VEC)	Description of Project activity	Other activities considered for CEE	Assessment of cumulative environmental impacts	Level of CEE
Grizzly Bear Habitat	Project Construction	Clearing of transmission corridor	Removal of forage vegetation and fragmentation of spring avalanche track habitats	Moderate

8.0 First Nations Considerations

This Section of the Application will deal with items specific to First Nations including:

- Identifying the First Nations with an interest in the study area and describing that interest.
- Discussing traditional use and aboriginal rights/title.
- Providing a First Nations socio-economic impact assessment focusing on the items relevant to each of the First Nations.
- Describing the management plans that will be employed to deal with residual effects specific to First Nations.

First Nations consultation is discussed in Section 2.2.

8.1 First Nations with an Interest in the Project Area

This section of the Application will identify all First Nations with an interest in the Project area and provide a brief overview of each First Nation. The Project is located entirely within Haisla Traditional Territory. Should other First Nations with an interest in the study area be identified through the review process, they will also be identified in the Application.

The Application will provide a map of the Project study area identifying the areas of interest of each of the First Nations in the study area.

8.2 Traditional Use and Aboriginal Rights/Title Issues

The Application will include:

- A non-confidential overview of historical and contemporary traditional use of the Project area lands and resources, and its relation to the traditional and contemporary First Nations economy based on discussions with the First Nations.
- Documentation of other considerations within the Project area, such as culturally modified trees, rock paintings, trails, legendary land features and wildlife and vegetation species identified by the First Nations as being of special significance to First Nations.
- Documentation of First Nations views on the existence of Aboriginal rights and title in the vicinity of the Project.

This section will also provide the findings of the environmental and socio-economic impact assessment pertaining to the potential for the Project to affect Aboriginal rights and title and traditional use during construction, operations and/or closure and the means through which any potential effects will be addressed. Potential residual effects will also be identified.

8.3 Socio-Economic Impact Assessment

This section of the Application will describe the likely effects of the Project specific to each of the First Nations. It will describe baseline socio-economic conditions, assess the impacts of the Project, and identify enhancement opportunities/mitigation requirements and residual benefits/effects. Reasons for considering certain socio-economic components and not others for each of the First Nations will be provided.

The First Nations socio-economic baseline will:

- Describe reserves and traditional land potentially affected by the Project and identify Treaty status.
- Describe general First Nations land-use in the study area and identify any First Nations land use plans or planning objectives proposed for areas in the vicinity of the Project.
- Describe the existing socio-community (including health services) and socio-economic characteristics of the individual First Nations as appropriate to the Project.
- Document social, cultural, economic and other values identified by the First Nations as being important to them.

Once the baseline has been developed, the proponent will assess potential interactions between the First Nations and the Project. This Section will describe that assessment and identify specific areas where the Project could affect First Nations during construction, operations, and closure. It will then identify mitigation and/or enhancement measures to be employed as well as residual benefits and/or effects.

8.4 Management Plans

The Application will identify specific management plans to mitigate and/or minimize residual effects on First Nations during Project construction, operations and closure.

9.0 Environmental Management Program

This section of the Application will provide a conceptual overview of the EMP that will be required for the development of the Project. It will also include details of all mitigation measures and monitoring programs to be implemented during construction, operations and decommissioning phases of the Project.

This section will identify the requirements for Environmental Monitors, their mandates and reporting schedules as well as identify long term monitoring requirements which may be considered under CEAA as follow-up monitoring.

9.1.1 Construction Phase

The Application will outline the EMPs proposed for the construction phase of the Project including provision for the following:

- Surface Water Quality and Sediment and Erosion Control Plan.
- Construction Waste Management Plan.
- Air Quality and Dust Control Plan.
- Water Quality/Quantity Monitoring Plan.
- Hazardous Waste Management and Spill Plan.
- Accidents and Malfunctions Plan.
- Wildlife/Vegetation Monitoring Plan.
- Archaeological Resources Monitoring Plan.
- Concrete Management Plan.

Other guidance documents that will be referred to in preparing construction EMPs will include:

- DFO Pacific Region Operational Statements (available online: http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm).
- Nesting surveys for nests of birds protected under Section 34(b) of the *Wildlife Act* before the start of construction.
- Develop with care: Environmental Guidelines for Urban and Rural Land Development in British Columbia (MOE, 2006).
- Others as identified with regulatory agencies.

9.1.2 Operations Phase

The Application will outline the EMPs proposed for the operations/maintenance phase of the Project including:

- Surface Water Quality and Sediment Control Plan.
- Water Quality Monitoring Plan.

- Wildlife/Vegetation Monitoring Plan.
- Outdoor Recreation Use Management Plan.
- Post Construction Environmental Management/Monitoring Plan.
- Fish Habitat Mitigation and Compensation Plan (containing environmentally and economically appropriate habitat compensation options for consideration by regulatory agencies).
- Marine Mammals Monitoring Plan.
- Blasting Management Plan.
- Site Restoration and Reclamation Plan.
- Drainage Management Plan.
- Sewage Management Plan.
- Concrete Management Plan.

In addition to the above mentioned EMPs, identification of other mitigation tools that will be used to minimize potential effects to First Nations concerns will be provided in the Application.

10.0 Conclusions

Using the information provided in Section 6.0 of the Application and the Project impact assessment, one of the following alternate conclusions will be presented in the Application:

1. The Project is not likely to cause significant adverse environmental, socio-economic/community, First Nations or other effects, taking into account the implementation of appropriate impact management measures, as identified in the Application's "table of proposed commitments".
2. The Project is likely to cause significant adverse environmental, socio-economic/community, First Nations or other effects, even taking into account the implementation of appropriate impact management measures, as identified in the Application's "table of proposed commitments".
3. It is uncertain at the time of the review whether or not the Project is likely to cause significant adverse environmental, socio-economic/community, First Nations or other effects, taking into account the implementation of appropriate impact management measures, as identified in the Application's "table of proposed commitments".

11.0 List of References and Supporting Documentation

A list of reference documents cited used in the creation of the Application will be provided. Documentation may include the following:

- Documentation with respect to referenced consultations with the public, First Nations and government agencies.
- Records of meetings and discussion topics, including any relevant agreements with government review agencies prior to filing the Application.
- List of all enclosures (such as appendices) included with the Application.
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The following references were cited in the preparation of the Terms of Reference.

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