3 ASSESSMENT METHODS

This section describes the assessment methods used in this Application for an EAC (the Application). Any valued component (VC)-specific modifications to these methods are provided in the VC sections. The assessment takes a sequential approach. First, it identifies and assesses the potential effects of the Aurora LNG Project (the Project). Second, it determines where Project residual effects are likely to interact cumulatively with the residual environmental effects of other past, present or reasonably foreseeable projects or physical activities. As indicated in Section 2 (Environmental Assessment Process) of the Application, the scope of the Project and scope of the assessment follow the requirements of both the *British Columbia Environmental Assessment Act* (BCEAA) and the *Canadian Environmental Assessment Act 2012* (CEAA 2012), as set out in the Section 11 Order. Mitigation measures that will be implemented to reduce or eliminate potential residual effects are described, and a significance determination for Project-specific and cumulative residual effects are included.

The key steps in the effects assessment include:

- Identification of key issues, VCs and CEAA 2012 factors relevant to the proposed Project and the assessment
- Definition of the scope of the assessment for each VC, including, regulatory and policy setting, assessment boundaries (spatial, temporal, administrative and technical), potential adverse project effects, measurable parameters, and significance thresholds
- Description of existing conditions in the local assessment area (LAA) and regional assessment area (RAA)
- Assessment of Project-specific effects, including identification of mitigation measures
- Assessment of cumulative effects
- Determination of significance for Project-specific and cumulative effects
- Discussion of prediction confidence and assessment of risk
- Description of follow-up and monitoring programs.

3.1 Scoping and Selection of Valued Components

The environmental assessment (EA) focuses on VCs of the biophysical and human environment.

British Columbia (BC) Environmental Assessment Office's (EAO) *Guidelines for the Selection of Valued Components and Assessment of Potential Effects* (2013) defines VCs as: "components of the natural and human environment that are considered by the Proponent, public, Aboriginal Groups, scientists and other technical specialists, and government agencies involved in the assessment process to have scientific, ecological, economic, social, cultural, archaeological, historical, or other importance" (BC EAO 2013, pg. 4).

BC EAO (2013) establishes that the VCs for a BC EA should have some or all of the following attributes:

- **Relevant** to at least one of the five "pillars" of BCEAA (environment, economic, social, heritage, and health) and clearly linked to the values reflected in the issues raised in respect of the proposed Project
- **Comprehensive**, so that taken together, the selected VCs should enable a full understanding of the important potential adverse effects of the proposed Project (including all five pillars)
- **Representative** of the important features of the natural and human environments likely to be affected by the proposed Project
- **Responsive** to potential effects of the proposed Project
- **Concise**, so that the nature of the project-VC interaction and the resulting effect pathway can be clearly articulated and understood, and redundant analysis is avoided.

For each of the five pillars, there is a section that summarizes the predicted residual effects, key mitigation measures and significance determinations related to each of the relevant VCs.

The Summary of Statutory Requirements under CEAA 2012 (Section 11) addresses the requirements related to environmental effects as per sections 5(1) and 5(2) of CEAA 2012, including those specific to Aboriginal peoples under section 5(1)(c).

3.1.1 Valued Components Selected for the Aurora LNG Project

The approach to selecting VCs for the EA is consistent with the requirements under the BCEAA and the CEAA 2012, as well as with BC EAO *Guidelines for the Selection of Valued Components and Assessment of Potential Effects* (2013).The selection process included the following steps:

1. Issues scoping. Potential Project-related issues and effects were identified based on:
    a) Knowledge of the proposed Project, including its components and activities
    b) Information collected during baseline and investigative use studies
    c) Requirements of both BCEAA and CEAA 2012
    d) Discussions with technical experts and various provincial and federal agencies, including discussions during the development of the proposed Project Description
    e) Ongoing consultations with stakeholders
    f) Ongoing consultations with Aboriginal Groups
    g) Publicly-available information and findings from recent studies or assessments of liquefied natural gas (LNG) projects in the region
    h) Professional judgment based on the experience of the assessment team.
2. Initial identification and evaluation of candidate VCs. VCs were identified based on the issues and concerns identified in step 1 and following BC EAO guidance. VCs were then evaluated against the attributes identified by BC EAO guidance (2013) to ensure their relevancy and applicability.
3. Selection of appropriate VCs. The process for selecting VCs followed applicable BC EAO guidance and involved refinement through on-going discussions with provincial and federal regulatory agencies including the BC EAO, BC Ministry of Environment (BC MOE), Ministry of Health, Department of

Fisheries and Oceans Canada, the Canadian Environmental Assessment Agency (CEA Agency), and through consultation with Aboriginal Groups identified in the Section 11 Order.

The VCs selected for this EA are consistent with the AIR, with one exception subsequent to the approval of the AIR. The Marine Wildlife VC was split into two separate VC sections (Marine Mammals and Marine Birds) to support a more focused discussion on the potential interactions, residual effects, and cumulative effects, and allow for a separate assessment of the significance of residual effects for each VC. The selected VCs are therefore as follows:

- Air Quality
- Greenhouse Gases
- Acoustic Environment
- Water Quality (freshwater and marine)
- Vegetation and Wetland Resources
- Wildlife Resources (Terrestrial)
- Freshwater Fish and Fish Habitat
- Marine Fish and Fish Habitat
- Marine Mammals
- Marine Birds
- Economic Conditions
- Visual Quality
- Infrastructure and Services
- Land and Resource Use
- Marine Use and Navigable Waters
- Community Health
- Archaeological and Heritage Resources
- Human Health.

The rationale for included and excluded VCs is provided in Table 3-1 of the AIR.

The assessment of environmental effects as per sections 5(1) and 5(2) of CEAA 2012, including section 5(1)(c) effects with respect to Aboriginal Groups which draws from relevant VCs, is found in the Summary of Statutory Requirements under CEAA 2012 (see Section 11.0). The assessment of potential Project effects on the exercise of Aboriginal Interest is found in Aboriginal Consultation (see Section 12.0).

3.2 Assessment Scope

This section describes the scope of the assessment of potential effects on each VC based on the scope of the Project included in the assessment, as per the EAO's Section 11 Order.

Part B of the EAO's Section 11 Order lists the on-site and off-site components included in the scope of the Project. On-site components include:

- A natural gas receiving and LNG production facility
- LNG storage tanks
- A marine terminal and an LNG loading facility
- Supporting infrastructure and facilities
- Temporary infrastructure and facilities
- Associated activities included within the scope of the proposed Project are construction, operation and decommissioning.

Off-site shipping activities included in the scope of the assessment are:

- Operation of LNG carriers and other supporting marine traffic along the marine access route between the Digby Island Terminal and the pilot boarding location at or near Triple Island.

The scope of the assessment does not include:

- Natural gas exploration and production activities
- Transportation of natural gas to the facility
- Activities required in order to prepare this Application.

3.2.1 Regulatory and Policy Setting

For each VC the regulatory requirements, policy, and guidance for assessment of potential effects is identified and described.

3.2.2 Influence of Consultation on the Assessment

Information raised through consultation with government agencies, stakeholders, community members and Aboriginal Groups are described in relevant sections in Part B, Part C and Part D of the Application. This information has been used to inform the scoping of the assessment and relevant analyses. When made available by Aboriginal Groups, First Nation land-use plans or other related documents or sources of information have been included in the assessment, where applicable.

3.2.3 Traditional Knowledge and Traditional Use Incorporation

Project specific studies submitted to Aurora LNG and publically available sources were used to gather traditional knowledge and traditional use information. This information was reviewed and considered during the preparation of the Application, and has been incorporated into the assessment, where applicable.

3.2.4 Potential Environmental Effects and Measurable Parameters

The selection of potential effects for assessment included consideration of issues and concerns raised by the public, stakeholders, Aboriginal Groups, and by the Project-specific terms of reference for the VCs.

For each potential effect, one or more measurable parameters have been identified to facilitate quantitative or qualitative measurement of change. The measurable parameters selected for this EA are generally consistent with the AIR. Where minor changes have been made rational has been provided.

Table 3-1 summarizes potential Project effects and associated measurable parameters for each VC.

Table 3-1 Potential Effects and Measurable Parameters

Valued Component	Topics Discussed in VC Assessment	Potential Project Effects	Measurable Parameters
Environmental Pillar			
Air Quality	CACs and VOCs emitted during all Project phases and including vessels at berth for loading	Change in ambient CAC concentrations	Increase in magnitude and spatial extent of ground-level concentrations (in µg/m^3) of CACs (SO_2, NO_2, CO, PM_{10} and $PM_{2.5}$) when compared with baseline.
Greenhouse Gases	Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), carbon dioxide equivalents (CO_2e), sulphur hexafluoride (SF_6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), nitrogen trifluoride (NF_3)	Emission of GHGs	Release rates of GHGs (CO_2, CH_4, N_2O, reported as CO_2e)
Acoustic Environment	Shipping Noise Operational Noise Construction Noise Potential effects to human receptors	Change in noise level	Overall equivalent continuous A-weighted (dBA) daytime and nighttime sound level (L_d and L_n) Linear (dB) daytime and nighttime sound level (L_d and L_n) [1] A-weighted (dBA) daytime and nighttime equivalent sound level (L_{dn}) Percent highly annoyed (%HA) The difference between A-weighted and C-weighted (dBA and dBC) daytime sound level (L_d) [1] The difference between A-weighted and C-weighted (dBA and dBC) nighttime sound level (L_n) [1]
		Change in vibration level	Ground vibration (mm/s) Air overpressure (dBL)
Water Quality	Freshwater quality (includes drinking water reservoir) Marine water quality Groundwater Bilge and Ballast water	Change in chemical and physical composition of surface water (freshwater)	Water chemistry (standard water quality parameters, including but not limited to: anions, base cations, dissolved organic carbon (DOC), pH, alkalinity, total suspended solids (TSS), temperature, dissolved oxygen (DO) Acid neutralizing capacity (ANC) to measure the buffering capacity of the water (to predict acidification) Nutrient concentrations (nutrient-nitrogen, phosphorous) associated with algal growth and blooms (eutrophication)
		Change in physical or chemical composition of marine waters	Water properties (physical and chemical): TSS, turbidity, metals, salinity, DO, temperature, pH Sediment properties (physical and chemical): particle size, total organic carbon, organic contaminants (e.g., polycyclic aromatic hydrocarbons [PAH], polychlorinated biphenyls [PCB], dioxins, and furans) and metals
Vegetation and Wetland Resources	Plant species at risk Traditional use plant species Invasive plant species Rare and sensitive ecological communities Old-growth forest Wetland functions Soil Acidification / Eutrophication	Change in abundance of plant species of interest	Abundance (count or occurrence) of: ▪ Federally or provincially listed plant species ▪ Traditional use plant species ▪ Invasive plant species

		Change in abundance or condition of ecological communities of interest	Areal extent (hectares [ha]) of:
			▪ Ecological communities at risk
			▪ Old-growth forest
			▪ Ecological communities identified as sensitive to:
			  ◦ High atmospheric concentrations of NO_2 or SO_2, or
			  ◦ Soil acidification, or
			  ◦ Soil eutrophication from air emissions sources

		Change in wetland functions	Areal extent (ha) of wetland ecosystems (by class) Characteristics of wetland function (hydrological, biogeochemical and habitat functions)
Wildlife Resources (Terrestrial)	Wildlife species at risk Traditional use wildlife Other wildlife species of management concern Migratory birds Small mammals (e.g., bats) Amphibians (e.g., western toad) Wildlife habitat	Change in habitat	Change in areal extent of habitat (ha); including zones of influence which accounts for species-specific sensory disturbance effects (e.g., noise) and reduction of habitat quality and quantity
		Change in mortality risk	Qualitative estimate of change in wildlife mortality risk due to Project activities: ▪ Interactions with vehicles and equipment ▪ Interactions with Project activities and infrastructure, including effects from light, and removal of nuisance animals
		Change in movement	Qualitative discussion of effects of Project on movement (e.g., newly created openings, sensory disturbance)

Table 3-1 Potential Effects and Measurable Parameters

Valued Component	Topics Discussed in VC Assessment	Potential Project Effects	Measurable Parameters
Freshwater Fish and Fish Habitat	Fish species at risk Traditional use freshwater species Freshwater fish habitat Freshwater fish that are part of, or support commercial, recreational, or Aboriginal (CRA) fisheries Riparian vegetation	Change in fish habitat	Total area of freshwater fish habitat permanently altered or destroyed (m^2)
		Change in fish mortality or health	Risk of fish mortalities (all life stages) due to extent, duration, or timing of instream work; or modification of flows
		Change in fish abundance or relative abundance	Fish population abundance or relative abundance (fish/m^2 of instream habitat or catch per unit effort)
Marine Fish and Fish Habitat	Marine fish habitat Marine fish that are part of, or support CRA fisheries Marine fish species at risk Traditional use marine fish species Marine plants Vessel wake effects	Change in habitat	Total area (m^2) of marine fish habitat permanently altered or destroyed Permanent alteration or destruction of habitat used for spawning, rearing, feeding or migration
		Change in behaviour	Timing, duration (hr), intensity (dB), frequency (Hz), and extent (m^2) of underwater noise, relative to published studies of marine fish responses to underwater noise The timing, duration and over-water extent (m^2) of changes in light conditions (over-water structures shading and artificial lighting), relative to published studies of marine fish responses to changes in light conditions
		Change in mortality risk	Total area (m^2) of marine fish habitat within which fish could be crushed or buried Timing, duration (hr), intensity (dB) and extent (m^2) of underwater noise, relative to interim criterion for fish injury A qualitative estimate of the likelihood of a change in mortality risk for marine fish due to entrainment or impingement associated with the seawater intake pipe
		Change in health	Levels (mg/L), spatial extent (m^2), timing and duration of TSS above published thresholds for marine fish
Marine Mammals	Marine mammal species at risk Other marine mammal species of management concern Traditional use marine mammal species	Change in health	Timing, duration (hr), intensity (dB) and extent (km) of underwater noise, relative to published and/or industry standards for the onset of auditory injury (i.e., permanent threshold shifts) to marine mammals from underwater noise
		Change in behaviour	Timing, duration (hr), intensity (dB) and extent (km) of underwater noise, relative to published and/or industry standard thresholds for marine mammal behavioural responses to underwater noise
		Change in mortality risk	Estimated change in qualitative likelihood (qualitative) of mortality or injury to marine mammals resulting from Project-related increases in marine traffic (i.e., increased potential for vessel strike)
Marine Birds	Marine bird species at risk Traditional use marine bird species Marine bird habitat Migratory marine bird species	Change in habitat	Change in areal extent of marine bird habitat (m^2) in the marine environment
		Change in mortality risk	Change in marine bird mortality risk from vessel-based lighting, the LNG facility, and the marine terminal
		Change in behaviour	Change in localized movement patterns or use of movement corridors from Project infrastructure or activities.
Economic Pillar			
Economic Conditions	Local and regional employment Sector-specific economic activity Resource-based economic activity	Change in labour supply and demand	Qualified labour supply (persons), employment rate, participation rate, non-basic/basic ratio, wage levels, labour income
		Change in activities for commercial businesses affected by Project spending	Value of local and regional spending ($) and related employment
		Change in resource-based primary industries and subsistence economies	Change in resource quality and quantity, change in access to resources, market value of affected resources
Social Pillar			
Visual Quality	Visual effects of the facility and shipping Nighttime lighting of the facility	Change in visual quality (LNG facility with carriers docked)	Visibility, existing visual condition (EVC)
Infrastructure and Services	Education infrastructure and services Health care infrastructure and service Social services Emergency and protective services Municipal services Transportation infrastructure Housing and accommodations Demographics	Change in community infrastructure and services	Number of workers and their dependents for each phase Demand and supply of community infrastructure and services (e.g., education and municipal services) Parameters based on infrastructure and services affected (e.g., police officers/1,000 population, police caseload, rated capacity/peak demand) Local government expenditures

Table 3-1 Potential Effects and Measurable Parameters

Valued Component	Topics Discussed in VC Assessment	Potential Project Effects	Measurable Parameters
Infrastructure and Services (cont'd)		Change in accommodations	Availability of accommodations (vacancy rates, inventory levels) Shelter-to-income ratio Cost of accommodation ($) Measures of core housing needs (e.g., adequacy, affordability, and suitability)
		Change in transportation infrastructure and services	Road volume (vehicles/day) Air traffic volumes (aircraft movements, passenger volume) Vehicle collisions (collisions/year) Aeronautical clearance metrics (e.g., vertical and horizontal clearance from the flare stack to the airport landing path in metres)
		Change in health care infrastructure and services	Demand and supply of health care infrastructure and services
Land and Resource Use	Forestry Mining Tourism Recreation Commercial and other land uses	Change in tenured land use and private property	Area (ha) of tenured land-use overlapped by the proposed Project Attribute data on overlapping land uses
		Change in non-tenured land-use	Areas (ha) of current recreational use (e.g., hunting, hiking, and skiing that would be restricted) Access to land use areas Intensity of use of area (e.g., visitor trips/year)
Marine Use and Navigable Waters	CRA fisheries Marine navigation Marine traffic Coastal tourism, recreation Other marine uses Vessel wake effects	Change in marine navigation	Extent (width in metres and area in m^2) of the navigable channel affected by Project infrastructure. Shipping traffic in Prince Rupert harbour (ships per year)
		Change in marine fisheries and other uses	Shipping traffic (ships per year) Fisheries area affected (e.g., fishing area that is overlapped by the shipping route) Attribute data on fisheries (e.g., target species, fishing gear types, harvest volume, frequency, access) Attribute data on other uses (e.g., recreational boating routes, marine park locations, visitor frequency, and access)
Community Health	Medical and mental health incidents Select social determinants of health Harvested foods	Change in community health and wellness	Occurrence rates for medical and mental health incidents Qualitative assessment of the following social determinants of health: income and social status, social support networks, social environments, personal health practices and coping skills
		Change in harvested foods	Qualitative assessment of: ▪ Volume of foods harvested ▪ Harvested foods consumption
Heritage Pillar			
Archaeological and Heritage Resources	Culturally Modified Trees (CMTs) Other archaeological and heritage sites Vessel wake effects	Loss of information about or alteration to site contents or context	Number, area, density, uniqueness and value of CMT sites/individual CMTs altered or removed through logging or vegetation clearing Number, volume, density and value of other heritage resources, archaeological sites and historic places being altered or removed
Health Pillar			
Human Health	Air Quality Surface Water Quality (freshwater) Quality of harvested foods	Changes to human health from changes in air quality	Concentration ratio (CR) for health risks from exposure to non-carcinogenic chemicals.
		Changes to human health from changes in surface water quality	Hazard quotient (HQ) for health risks from exposure to non-carcinogenic chemicals.
		Changes to human health from changes in harvested food quality	Hazard quotient (HQ) for health risks from exposure to non-carcinogenic chemicals. ILCR for cancer risk from exposure to carcinogenic chemicals

NOTE:
[1] Measurable parameter for low frequency noise effect

3.3 Assessment Boundaries

3.3.1 Spatial Boundaries

The spatial assessment area boundaries for each VC were selected principally with consideration of the geographic extent of measurable potential environmental, economic, social, heritage and health effects of the proposed Project and comments received from members of the Working Group. Each VC section will describe the spatial boundaries and the rationale for selection.

As part of the Application development process, some of the VC spatial boundaries were adjusted. These adjustments were made based on sampling or modelling results, as per the process outlined in the approved AIR. The rationale for these changes is provided in the relevant VC sections.

For the purpose of the assessment, three spatial boundaries were identified: the PDA, LAA and RAA. The PDA is the boundary that encompasses the terrestrial and marine areas that will be developed to accommodate the LNG facility and the marine terminal (see Figure 1-2). The total terrestrial area of the Project is approximately 773 ha, whereas the total marine area is 13 ha.

The LAA for each VC encompasses the area in which (a) Project-related effects can be predicted or measured with a level of confidence that allows for assessment; (b) there is a reasonable expectation that those potential effects will be of concern; and/or (c) have been independently established by regulators in the AIR. The LAA for each VC is described in the relevant VC sections.

The RAA for each VC is the area that establishes the context for the determination of significance of Project-specific effects. It is also the area within which potential cumulative effects—the residual effects from the proposed Project in combination with those of past, present and reasonably foreseeable projects—are assessed. The RAA for each VC is described in the relevant VC sections.

3.3.2 Temporal Boundaries

Temporal boundaries identify when an environmental effect is evaluated in relation to specific project phases and activities. Temporal boundaries are based on the timing and duration of project activities and the nature of the interactions with the VC.

Based on the current Project schedule, the temporal boundaries for the assessment are:

- Construction: Phase 1 (trains 1 and 2) is anticipated to commence in 2020 and will be completed within approximately five to six years; Phase 2 (trains 3 and 4) will commence based on market demand
- Operations: Minimum 25 years after commissioning
- Decommissioning is anticipated to commence approximately 12 months after the end of the Project life and continue for approximately two to five years.

3.3.3 Administrative Boundaries

Where relevant, administrative boundaries are identified in applicable VC sections. Administrative boundaries describe the limitations imposed on an EA by political, economic or social constraints.

3.3.4 Technical Boundaries

Where relevant, technical boundaries and the methods used to identify the boundaries, are identified in applicable VC sections. Technical boundaries describe limitations in information, data analyses, and data interpretation relevant to a particular VC.

3.4 Existing Conditions

Existing conditions are described for each VC in its applicable section. Key elements of the approach to describing existing conditions include:

- Appending and/or referencing existing and available reports as appropriate, including the baseline technical reports
- Conducting and documenting primary and secondary research to collect and analyze data following appropriate standards and guidelines (e.g., Resource Information Standards Committee), where available. Where methods used for the assessment deviate from applicable published guidance, the rationale for the variance has been provided.
- Discussing the quality and reliability of information sources (e.g., gaps, insufficiencies and uncertainties) that are consulted and how the data is used to describe existing conditions and support the assessment and future monitoring activities
- Integrating applicable TK and TU information into the Application
- Describing field and laboratory methods as well as quality assurance and quality control measures applied
- Describing modelling techniques and analyses and identify any limitations of the modelling
- Providing context for the existing conditions by referencing natural and/or human-caused trends that may alter the environmental, economic, social, heritage and health setting, irrespective of the changes that may occur as a result of the proposed Project or other project and/or activities in the area
- An explanation of if and how other past and present projects and activities in the study area have affected or are affecting each VC.

3.5 Project Interactions

Table 3-2 indicates potential interactions between the proposed Project's components and physical activities and each selected VC, consistent with those shown in the final approved AIR. Potential interactions have been carried forward and assessed in the relevant VC sections. Justification is provided for non-interactions (no check marks), including any input received from BC EAO, the Working Group, government agencies, Aboriginal Groups and the public.

Table 3-2 Potential Interactions of the Proposed Project with the Biophysical and Human Environment VCs

Project Components and Physical Activities	Valued Components																	
	Air Quality	GHG	Acoustic Environment	Water Quality	Vegetation and Wetland Resources	Wildlife Resources (Terrestrial)	Freshwater Fish and Fish Habitat	Marine Fish and Fish Habitat	Marine Mammals	Marine Birds	Economic Conditions	Visual Quality	Infrastructure and Services	Land and Resource Use	Marine Use and Navigable Waters	Community Health	Archaeological and Heritage Resources	Human Health
Construction																		
Site preparation (clearing, grubbing, grading, levelling, on-land disposal, and construction, operations and decommissioning of temporary facilities)	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	-	✓	✓	✓
Onshore construction (installation of LNG facility, cryogenic rundown line and vapour return line, utilities, ancillary support facilities and access roads)	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	-	✓	✓	✓
Employment and Expenditures*	-	-	-	-	-	-	-	-	-	-	✓	-	✓	✓	✓	✓	-	-
Dredging and disposal at sea	✓	✓	✓	✓	-	-	-	✓	✓	✓	✓	-	-	-		✓	✓	✓
Marine construction (marine transport, material offloading and laydown areas, transfer piping and electrical infrastructure, infilling, pile installation, and underwater blasting)	✓	✓	✓	✓	-	✓	-	✓	✓	✓	✓	✓	-	-	✓	✓	✓	✓
Waste management (waste collection and treatment)	-	-	✓	✓	-	✓	✓	✓	-	-	-	-	✓	✓	-	-	-	-
Vehicle traffic (road use, vehicle traffic)	✓	✓	✓	✓	✓	✓	✓	-	-	-	✓	-	✓	✓	-	✓	-	✓
Commissioning and start-up (includes hydro-testing and discharge to the marine environment)	✓	✓	✓	✓	-	✓	-	✓	-	✓	-	-	-	-	-	-	-	✓
Operations																		
Natural gas pre-treatment and natural gas liquids extraction	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	✓
LNG production (including transfer to storage tanks, and loading on LNG carriers and routine flaring)	✓	✓	✓	✓	✓	✓	-	✓	-	✓	-	✓	✓	✓	✓	✓	-	✓
Employment and Expenditures*	-	-	-	-	-	-	-	-	-	-	✓	-	✓	✓	✓	✓	-	-
LNG shipping (inclusive of LNG carriers and other supporting marine traffic such as tugs)	✓	✓	-	✓	✓	-	-	✓	✓	✓	✓	✓	-	-	✓	✓	-	✓
Waste management (collection, treatment if needed, and disposal of solid waste and wastewater, including stormwater and cooling water from the power generation facility)	-	-	✓	✓	-	✓	✓	✓	-	-	-	-	✓	✓	-	-	-	-
Decommissioning and Abandonment																		
Dismantling of land-based and marine infrastructure, including related vessel traffic	✓	✓	✓	✓	-	✓	-	✓	✓	✓	✓	✓	-	-	✓	✓	-	-
Remediation and reclamation of the site	✓	✓	✓	-	✓	✓	✓	-	-	✓	✓	✓	-	✓	✓	✓	-	-
Employment and Expenditures*	-	-	-	-	-	-	-	-	-	-	✓	-	✓	✓	✓	✓	-	-
Waste management	-	-	✓	✓	-	✓	✓	✓	-	-	-	-	✓	-	-	-	-	-

NOTES:
✓ Potential interactions that may cause an effect.
- Not applicable
* All Project activities requiring the presence of workers and/or expenditures.

3.6 Assessment of Project Residual Effects

This section summarizes the approach used to assess the residual adverse effects identified for each VC.

3.6.1 Analytical Methods

Each VC section describes the analytical techniques applied in the assessment of Project effects. This includes a discussion of the conservative assumptions—assumptions that err on the side of overstating expected effects—to accommodate uncertainties that arise during the assessment. These uncertainties can result from various sources, such as limitations in modelling results or in the availability or quality of data. Making conservative assumptions that lead to an overstatement of expected effects, increases confidence that a determination of an effect not being significant is correct.

3.6.2 Project Mechanisms

Mechanisms by which Project activities and actions could result in environmental, economic, social, heritage or health effects are described for each VC. Where applicable, the Project effects mechanisms are described for each phase (i.e., construction, operations and decommissioning) and may use a combination of existing knowledge of potential effects identified through the literature review, and knowledge of previous projects in a similar geographical and cultural context.

3.6.3 Mitigation

Mitigation measures reduce or eliminate potential adverse effects. Mitigation may involve changes to the temporal or spatial aspects of the proposed Project or the means by which the proposed Project will be constructed, operated, or decommissioned. Mitigation may include documented practices, measures proven effective in the past, BMPs, as well as measures developed specifically for the proposed Project. For adverse effects that cannot be avoided or adequately reduced, mitigation can also include specialized measures such as habitat compensation, replacement, transplant and timing considerations.

For each VC, the assessment:

- Describes the approach to identify and analyze mitigation measures, including any management and compensation plans proposed which will be implemented to address potential effects
- Describes the mitigation measures incorporated into the proposed Project, including site and route selection, Project scheduling, Project design (e.g., equipment selection, placement, emissions abatement measures), and construction and operations procedures and practices
- Describes any standard mitigation assumed or proposed to be implemented, including consideration of best management practices, environmental management plans, environmental protection plans, contingency 24 plans, emergency response plans, and other general practices
- Clearly indicates how the mitigation measures will mitigate the potential adverse effects on the VC
- Provides the rationale for the proposed mitigation measures, including why further avoidance or reduction measures for adverse effects may not be considered feasible, and the need for and scope of any proposed compensation or offset

- Evaluates the anticipated success of each mitigation measure and describes the rationale and analysis for these evaluations. If there is uncertainty with the effectiveness, a description of the potential risks and uncertainties associated with use of the mitigation is also included.
- Includes the time required for mitigation to become effective, to enable understanding of the duration of residual effects and the temporal characteristics of reversibility
- Summarizes the mitigation measures by Project phase and identifies any mitigation measures that are included in management or compensation plans.

Where additional risk analysis is deemed appropriate, a summary of the process and method used for this analysis and the conclusions, including the range of likely, plausible and possible outcomes with respect to likelihood and significance, is also included.

3.6.4 Characterization of Residual Effects

Several criteria are used to characterize (describe) the residual adverse effects on each of the VCs. Where possible, these criteria are described quantitatively. If quantitative characterization is not possible, it is completed using qualitative terms. Definitions are provided in the VC section when qualitative terms are used. When residual effects on a VC are determined, the linkages between the VC and the discipline-specific studies to which the information has been forwarded for further evaluation are identified. The characterization of residual effects is based on the following criteria:

- **Magnitude—**The amount of change to the measurable parameters of the VC relative to existing conditions. (e.g., negligible, low, moderate, high).
- **Geographical Extent—**The geographic area over which an environmental effect occurs.
- **Frequency—**Identifies when the residual effect occurs and how often during the proposed Project or in a specific phase (e.g., single event, multiple irregular events, multiple regular events, continuous).
- **Duration—**The period of time required until the measurable parameter or the VC returns to its existing condition, or the effect can no longer be measured or otherwise perceived (e.g., short-term, medium term, long term, permanent).
- **Reversibility—**Whether or not the residual effect on the VC can be reversed once the physical work or activity causing the disturbance ceases.
- **Context—**Refers primarily to the sensitivity and resilience of the VC. Context draws heavily on an understanding of existing conditions, which may reflect cumulative effects of other projects and activities that have been carried out, and information about the impact of natural and human-caused trends on the condition of the VC. Project effects may have a higher effect if they occur in areas or regions that have already been adversely affected by human activities (i.e., disturbed or undisturbed) or are ecologically fragile and have little resilience to imposed stresses (i.e., fragile).

3.6.5 Likelihood of Residual Effects

Likelihood refers to whether or not a residual effect is likely to occur. The probability of a residual adverse effect occurring and the rationale for this determination are presented. Where possible, these criteria are described quantitatively for each VC. Where a quantitative description is not possible characterization has been completed using qualitative terms. Definitions are provided when qualitative terms are used.

3.6.6 Significance Thresholds for Residual Effects

Threshold criteria were developed for each potential effect, beyond which a residual effect would be assessed as significant. Where thresholds were not set by guidelines, management standards or regulations, a threshold was developed. The thresholds developed present the limits of an acceptable change in a measurable parameter or state of the VC or CEAA 5(1)(c), based on resource management objectives, community standards, scientific literature or ecological processes (e.g., desired states for fish or wildlife habitats or populations). To meet the requirements of a substituted EA, significance determination has been provided for every residual effect, even if the likelihood was determined to be low.

3.6.7 Confidence and Risk

The determination of significance includes a discussion of the "prediction confidence" based on the following variables:

- Scientific certainty relative to qualifying or estimating the effects, including the quality and/or quantity of data and the understanding of the effect mechanisms
- Scientific certainty relative to the effectiveness of the proposed mitigation measures
- Professional judgement from prior experience including proven mitigation measures.

Each VC section summarizes the process and method used to evaluate the levels of confidence associated with residual effects predictions and in particular, how any identified uncertainty may affect either the likelihood or the significance of the predicted residual effect. A description of any measures to reduce uncertainty through monitoring, adaptive management or other follow-up programs is provided.

Each VC section summarizes the process and methodology used to determine if additional risk analysis is required. If additional risk analysis is required, a summary of the process and method used for this analysis and the conclusions, including the range of likely, plausible and possible outcomes with respect to likelihood and significance has been included.

3.6.8 Residual Project Effects

The characterization of Project residual effects for each selected VC is presented in a summary table, following the format of Table 3-3.

Table 3-3 Summary of Project Residual Effects on [VC]

Project Phase	Residual Effects Characterization						Likelihood
	Magnitude	Geographic Extent	Frequency	Duration	Reversibility	Context	
[Effect Name #1]							
Construction							
Operation							
Decommissioning and Abandonment							
[Effect name #2]							
Construction							
Operation							
Decommissioning and Abandonment							

KEY
Magnitude:
Geographic Extent:
Frequency:
Duration:
Reversibility:
Context:
Likelihood:

3.7 Assessment of Cumulative Effects

The assessment of cumulative effects is initiated only when two conditions are met:

- The proposed Project is assessed as having residual environmental effects on the VC
- The residual effects could act cumulatively with residual effects of other past, present, or reasonably foreseeable future physical activities.

If either condition is not met, the cumulative effects assessment for that particular effect was not carried forward because the Project would not interact cumulatively with other projects or activities.

Using the process outlined in the following subsections, the Project residual effects likely to interact cumulatively with residual environmental effects of other projects or physical activities were identified and the resulting cumulative effects assessed for each VC. All relevant cumulative effects, regardless of the mechanism by which they occur, have been considered. This is followed by an analysis of the proposed Project's contribution to cumulative effects.

3.7.1 Project and Physical Activities Inclusion List

Past, present and reasonably foreseeable future projects and physical activities that may potentially interact cumulatively with the proposed Project have been identified. Future projects and activities considered in the cumulative effects assessment are those that are reasonably foreseeable. This includes those that: (a) have been publicly announced with a defined project execution period and with sufficient project details that allow for a meaningful assessment, (b) are currently undergoing an EA or (c) are in a permitting process.

The cumulative effects assessment considers the cumulative contribution of the projects listed in Table 3-4 and shown in Figure 3-1. No changes were made to the preliminary project and physical activities inclusion list included in the approved AIR, other than to update the operational status of Ridley Island Log Sort.

Each VC section describes:

- The spatial boundaries for the cumulative effects assessment, including maps, using the boundaries established for the proposed Project-specific effects assessment, as appropriate
- The spatial and temporal boundaries of other developments.

Table 3-4 Project and Physical Activities Inclusion List

Projects or Physical Activity	Municipality/ Region	Description
Present (Operational)		
Fairview Container Terminal Phase I and Phase II Northern Portion	Prince Rupert	A 24 ha intermodal (ship-to-rail) container terminal, with an operational capacity to move 750,000 TEUs (Twenty foot Equivalent Units) per year.
Pacific Northern Gas Pipeline	Kitimat	An operating 1,180 km natural gas pipeline distribution system connecting the Western system transmission pipeline with the Spectra Energy pipeline system near Summit Lake, and extending 587 km to Kitimat, BC.
Odin Seafood	Prince Rupert	An operating commercial seafood packaging and distribution facility in Prince Rupert.
Prince Rupert Ferry Terminal	Prince Rupert	An operating ferry terminal for the Alaska Marine Highway and BC Ferries in Prince Rupert. BC Ferries offers year-round vehicle/passenger service between Prince Rupert, Port Hardy, and Skidegate. Alaska Marine offers service along the Inside Passage and to the Alaska Peninsula.
Prince Rupert Industrial Park	Prince Rupert	An operational industrial park composed of a saw mill, car manufacturer facility and an auto mechanics shop.
Prince Rupert Grain Terminal	Prince Rupert	An operating grain storage and handling terminal in Prince Rupert, BC. The terminal can accommodate vessels up to 145,000 dead weight tonnes, and the facility is involved in cleaning and exporting over 6 million tonnes of Canada Wheat Board grains (e.g., wheat and barley) annually.
Prince Rupert Airport	Prince Rupert	An operational airport located 9.3km southwest of Prince Rupert.
Ridley Island Log Sort	Prince Rupert	Was an operating dry land log sort on Ridley Island that produced shingles for the Vancouver market, produced wood chips for pulp mills and sorted, stored and transported logs. This business shut down in 2009.
Ridley Terminals	Prince Rupert	An operating deep sea bulk coal, petroleum coke, wood pellet storage and handling terminal, involved in exporting coal and petroleum coke volumes from western Canada.
Atlin Terminal	Prince Rupert	An operating tourism center and docking terminal for small ships in Prince Rupert.
Northland Cruise Terminal	Prince Rupert	The cruise ship terminal is operational.
Pinnacle Pellet	Prince Rupert	An operating wood pellet transfer and storage facility on Kaien Island that houses pellets brought in from Houston, BC that are exported to Asian markets.
Northwest Transmission Line	Kitimat	An operating 344 km long 287 kV transmission line that extends north from the Skeena Substation near Terrace to near Bob Quinn Lake. It is structurally composed of 1,100 steel towers (27 m tall).

Table 3-4 Project and Physical Activities Inclusion List

Projects or Physical Activity	Municipality/ Region	Description
Rio Tinto Aluminum	Kitimat	Rio Tinto's smelter in Kitimat, BC was recently upgraded to increase its production capacity to 420,000 tonnes per annum. Existing features are a 287 kV BC Hydro transmission line and a 230 kV transmission line to Kemano.
Cruise Shipping	British Columbia	Cruise ships using inside passage route, typically transiting to Alaska from Vancouver or Seattle.
Forestry Activities	British Columbia	BC Timber Sales and other licensees. Includes existing and future cut blocks.
Fishing and Aquaculture Activities	British Columbia	Commercial, recreational, and aboriginal fishing, traditional harvesting, and aquaculture.
Rail	British Columbia	Commercial rail activities.
Future		
Pacific NorthWest LNG Project	Prince Rupert	Proposed LNG export facility on Lelu Island site (160 ha) including a marine terminal and liquefaction plant with three trains and a storage capacity of 540,000 cubic meters. Estimated to export up to 22.2-million tonnes of LNG per year for 25 years. EAO Approved, Under review with CEA Agency.
Prince Rupert LNG Project	Prince Rupert	Proposed LNG export facility on Ridley Island site (125 ha) including a marine terminal and liquefaction plant with three trains and a storage capacity of 540,000 cubic meters. Estimated to export up to 21-million tonnes of LNG per year. Pre-Application.
LNG Canada Export Terminal Project	Kitimat	Proposed LNG export facility including LNG plant and a marine terminal. Estimated to export up to 24 million tonnes of LNG per year over 25 years (two billion cubic feet per day). Approved.
Douglas Channel LNG Project/BC LNG Project*	Kitimat	Douglas Channel LNG Consortium announced that it decided not to proceed with construction of a proposed barge-based natural gas plant and export facility on a grounded foundation within the Douglas Channel, south of Half Moon Bay Marina, including a marine berth, as well as a LNG buffer tank, electrical substation, and other support facilities on land adjacent to the plant. Estimated to produce 900,000 tonnes per year, and export up to 1.8-million tonnes of LNG per year over 20 years.
Kitimat LNG Terminal Project	Kitimat	Proposed 15 km connector natural gas pipeline connecting the Pacific Trails Pipeline near the Minette substation to the export LNG terminal in Kitimat. Furthermore, it will provide a direct connection between Spectra Energy Transmission pipeline, and the Kitimat LNG terminal. Terminal and pipeline project components include a new compressor station and upgrades to existing stations and redeveloping the former Eurocan mill site into a project lay down and construction camp, as well as LNG plant and marine loading facilities at Bish Cove, south of Kitimat. Certificate extension.

Table 3-4 Project and Physical Activities Inclusion List

Projects or Physical Activity	Municipality/ Region	Description
Enbridge Northern Gateway Project	Kitimat	Proposed development of oil export terminal facilities in Kitimat. The project includes two 1,177 km pipelines that run parallel to one another from Bruderheim, AB to Kitimat. The westbound pipeline will carry bitumen to Kitimat and the eastbound pipeline will transport imported natural gas condensate to Bruderheim. Environmental Assessment Certificate quashed by Federal Court of Appeal on June 30, 2016. Sunset clause application is suspended indefinitely.
Watson Island Industrial Site Redevelopment/ Seaport Terminal**	Prince Rupert	Proposed redevelopment of a 100 ha pulp mill on Watson Island for transloading facilities, cold storage and warehousing to serve as a bulk shipping terminal with a supporting industrial park. Dependent on remediation and land titles case with previous owner Sun Wave Forest Products.
Fairview Container Terminal Expansion Phase II	Prince Rupert	Proposed expansion of the Fairview Container Terminal in Prince Rupert. Expected to quadruple operation capacity to move 2 million TEUs (Twenty foot Equivalent Units) per year. Project components include increasing the dock area from 24 to 56 ha, and thereby expanding on-site storage capacity. Under construction.
Ridley Coal Terminal Expansion	Prince Rupert	A marine bulk handling terminal in Prince Rupert. Project components include a new tandem rotary dumper and thaw shed. Shipping capacity is expected to increase from 12 million tonnes per year to 25 million tonnes per year by the end of 2014. Under construction.
Canpotex Potash Export Terminal*	Prince Rupert	In June 2016, Canpotex Limited announced that it decided not to proceed with proposed construction of the Canpotex Potash Export Terminal in Prince Rupert. Project components included a marine wharf, an access trestle, a causeway, an all-weather ship loading facility, a 180,000 tonne potash storage building, a railcar conveyor system, a 3.4 km, 69 kV transmission line, a settlement pond, and personnel and maintenance buildings. Capacity was expected to increase to approximately 13 million tonnes of red and white potash per year. Approved*.
Westcoast Connector Gas Transmission	Prince Rupert	Proposed 850 km natural gas pipeline system consisting of two adjacent pipelines extending from northeastern BC to an export terminal on Ridley Island. Will be capable of transporting up to 4.2 billion cubic feet per day of natural gas. Approved.
Prince Rupert Gas Transmission Project	Prince Rupert	Proposed 750 km natural gas pipeline extending from northeastern BC to connect with the proposed Pacific Northwest LNG export terminal on Lelu Island. Approved.
Kinskuch Hydro Project[1]	Prince Rupert/Terrace	Proposed 80 MW capacity hydroelectric project on Kinskuch Lake near Alice Arm, BC. Major components include a small concrete dam, tunnel, penstocks, powerhouse and tailrace, and a 39 km 138 KV transmission line connecting with the existing transmission line along highway 37. Pre-application.

Table 3-4 Project and Physical Activities Inclusion List

Projects or Physical Activity	Municipality/ Region	Description
Ridley Island Road, Rail and Utility Corridor***	Ridley Island	Recently completed construction, the Project consists of an access road, rail loop, utilities as well as onshore terminal infrastructure and marine components. Three rail lines will support the transportation of coal, potash and other bulk developments from the terminal. In addition there will be two rail lines will form a loop around Ridley Island. Completed.
Smith Island Quarry Project	Port Edward	Proposed rock quarry development approximately 8.5km south of Port Edward. The Project will produce construction rock and dimension stone. The operation is proposed to produce 200,000 tonnes per annum.
Grassy Point LNG (Woodside)	Prince Rupert	Currently in the feasibility stage, the Project would consist of constructing and operating a LNG export facility at Grassy Point near Prince Rupert with the capacity to process 20 million tonnes per annum of LNG. Pre-Application.
WCC LNG Export Facility	Prince Rupert	Proposed LNG export facility located at Tuck Inlet in Prince Rupert with the capacity to process 30 million metric tonnes of natural gas per year. Includes liquefaction and storage facilities, loading facilities and third-party pipeline and facilities required to transport natural gas to the facility from existing pipeline systems. Pre-Application.

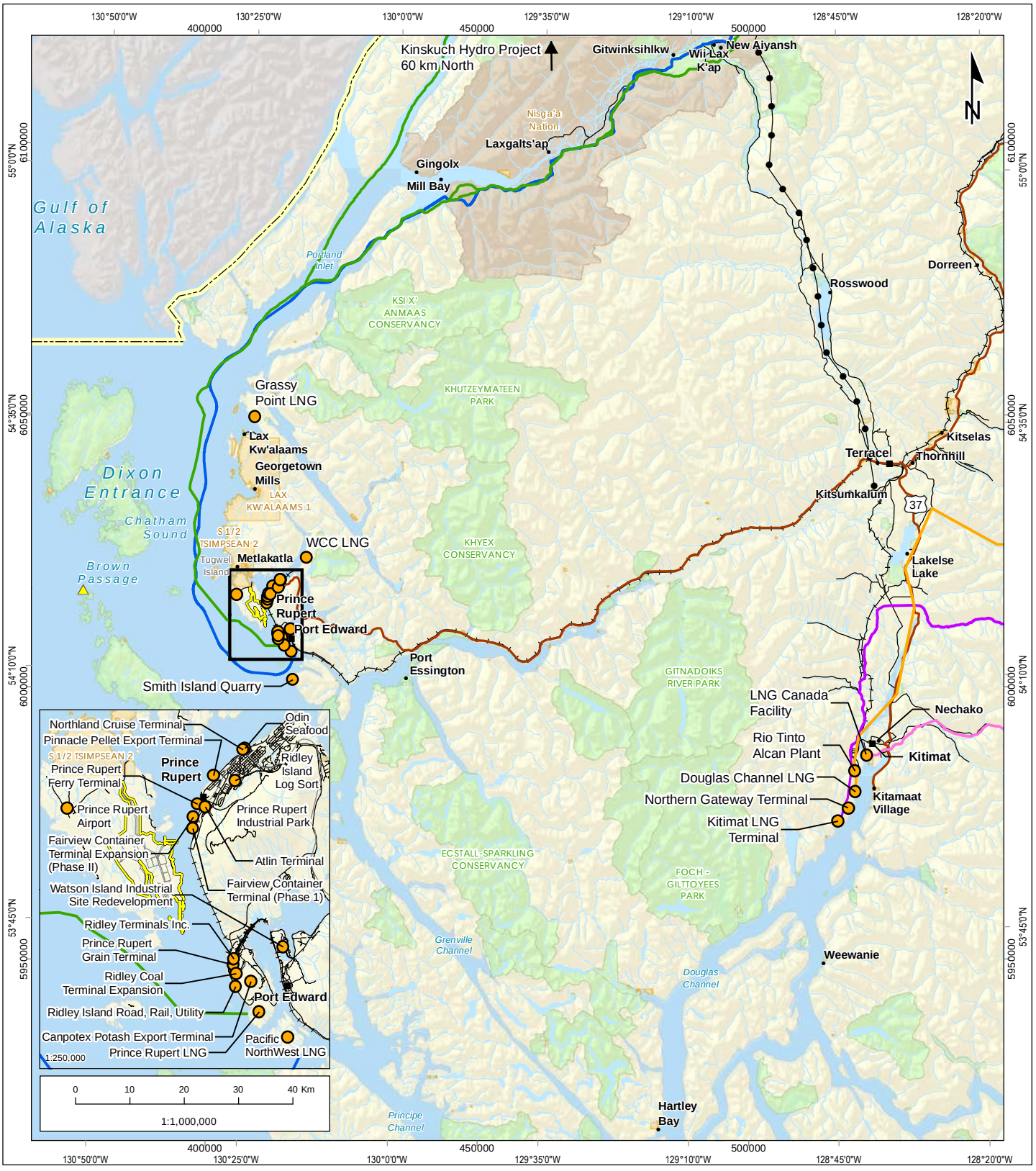
NOTES:

[1] Only transmission line will be considered in the assessment.

* Following write-up of this Application, the status of this project was revised to halted.

** The physical activities listed here are shown as future; however, the activities occur in an area that was cleared for a facility that was operational from 1957 to 2001.

*** At the time of modelling and assessment, this was considered a future project; however, this project has now completed construction.



- City, Municipality, or Town
- Community, Locality, or Village
- Triple Island Pilot Station
- Highway
- Road
- Railway
- International Boundary
- Watercourse
- Park, Protected Area, Ecological Reserve, or Conservancy
- First Nation Reserve
- Treaty Lands
- Waterbody
- Project Development Area
- Project Inclusion List
- Northwest Transmission Line

EAO Proposed LNG Pipelines

- Pacific Northern Gas Looping
- Coastal Gas Link
- West Coast Connector Gas Transmission
- Prince Rupert Gas Transmission
- Pacific Trail Pipeline

aurora LNG

ENVIRONMENTAL ASSESSMENT CERTIFICATE APPLICATION

LOCATION OF PROJECTS ON THE PROJECT INCLUSION LIST

Projection:UTM Zone 9 Datum: NAD 83	Fig. ID:123220054 Date: Oct 20, 2016	Drawn By: RC Checked By: TS	FIGURE NO:	**3-1**

3.7.2 Identification of Project Effects Likely to Interact Cumulatively

The potential interactions between the proposed Project's residual effects and those of other projects and activities are identified in each VC section following the format of Table 3-5. A conservative approach was taken in identifying such interactions—if there was reasonable doubt about whether a cumulative interaction might occur, the interaction was considered. If it was determined that the proposed Project did not act cumulatively with other physical activities, then the assessment concluded at this point because the proposed Project would not contribute to cumulative effects.

Table 3-5 Potential Cumulative Effects on [VC]

Other Projects and Physical Activities with Potential for Cumulative Environmental Effects	Potential Cumulative Effects			
	Effect 1	Effect 2	Effect 3	Effect 4
Past and Present Physical Activities and Resource Use				
Cruise				
Fishing and Aquaculture				
(e.g., Other Resource Activities)				
Project-Related Physical Activities				
Future Physical Activities				
Project/Physical Activity 1				
Project/Physical Activity 2				

NOTE:
✓ Those "other projects and physical activities" whose effects are likely to interact cumulatively with the proposed Project's residual effects.

3.7.3 Project Contribution to Cumulative Effects

For each VC, the Project's contribution to each residual cumulative effect is also described (i.e., how much of the total residual cumulative effects can be attributed to the proposed Project).

3.7.4 Cumulative Effects Mechanisms

For each VC, this section describes the mechanisms by which cumulative effects may occur and the geographic and temporal scope of any effects identified, quantified in terms of the degree of change in the measurable parameter(s).

3.7.5 Mitigation for Cumulative Effects

In addition to the mitigation previously described to address Project-specific effects, mitigation that could be implemented to address a cumulative effect was also identified, where applicable. Where no additional mitigation was identified that could be implemented, a discussion is included. Given that cumulative effects may occur as a result of interactions with physical activities outside the control of the proponent,

collaborative initiatives that may involve those responsible for other projects or physical activities as well as other third parties (e.g., governments, Aboriginal Groups, other stakeholders, and non-government organizations) were considered.

3.7.6 Residual Cumulative Effects

After application of the additional mitigation measures, the resulting residual cumulative effects are described using the relevant measurable parameters and the appropriate criteria described in Section 3.6.4 for characterizing residual effects.

3.7.7 Likelihood of Cumulative Residual Effects

The probability of a residual adverse cumulative effect occurring and the rationale for this determination are described. Where possible, these criteria were described quantitatively for each VC. When likelihood could not be characterized quantitatively, characterization was completed using qualitative terms. Definitions were provided when qualitative terms were used.

3.7.8 Summary of Cumulative Effects

A summary of residual cumulative effects is provided for each VC, following the format of Table 3-6.

Table 3-6 Summary of Residual Cumulative Effects on [VC]

Case	Other Projects, Activities and Actions	Residual Cumulative Environmental Effects Characterization						Likelihood
		Magnitude	Geographic Extent	Frequency	Duration	Reversibility	Context	
Residual Cumulative Effect 1								
Residual Cumulative Effect with the Project								
Project Contribution to Residual Cumulative Effect								
Residual Cumulative Effect 2								
Residual Cumulative Effect with the Project								
Project Contribution to Residual Cumulative Effect								

KEY
Magnitude:
Geographic Extent:
Frequency:
Duration:
Reversibility:
Context:
Likelihood:

3.8 Determination of Significance

3.8.1 Significance of Residual Project Effects

For each VC, the significance of each Project-specific residual effect is determined using the significance thresholds defined in Section 3.6.6.

3.8.2 Significance of Residual Cumulative Effects

For each VC, the significance of each residual cumulative effect is determined using the significance thresholds defined in Section 3.6.6.

3.9 Prediction Confidence

The level of confidence in the conclusions about Project-specific and cumulative effects is described for each VC, based on:

- Scientific certainty relative to qualifying or estimating the effect, including the quality and/or quantity of data
- The understanding of the effect mechanisms
- Scientific certainty relative to the effectiveness of the proposed mitigation measures
- Assumptions made.

The level of confidence in the first three variables and the degree of conservatism in the fourth determined the degree of confidence in the significance prediction. Professional judgment from prior experience was also used, including proven mitigation measures.

3.10 Follow-up and Monitoring

Where appropriate, follow-up is proposed to assess the accuracy of the EA predictions and to monitor compliance with the implementation of mitigation measures.

Where follow-up is proposed, the following steps are taken:

- Measures to evaluate the accuracy of the original effects prediction are identified
- Measures to evaluate the effectiveness of proposed mitigation are identified
- An appropriate strategy is proposed that would apply in the event that original effects predictions or mitigation effectiveness are not as expected. This included reference to further mitigation, involvement of key stakeholders, First Nations, government agencies and any other measures deemed necessary to manage the issue.

3.11 Conclusions

The Application will provide a conclusion on the assessment.

3.12 References

3.12.1 Literature Cited

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