KSI LISIMS LNG

Natural Gas Liquefaction and Marine Terminal Project

APPENDIX F: UPDATED TRANSMISSION LINE ASSESSMENT AREA SUPPLEMENTAL INFORMATION

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Table of Contents

Appendix F – Transmission Line Assessment Area Supplemental Information F-1
F.1 Introduction F-1
F.2 Transmission Line Description F-2
F.2.1 Route Options and the uTLAA F-2
F.2.2 Key Activities F-3
F.2.2.1 Construction F-4
F.2.2.2 Operation F-5
F.2.2.3 Decommissioning F-5
F.2.3 Existing Conditions F-6
F.3 Route Selection F-15
F.4 Permitting Plan F-17
F.5 Influence of Consultation on the uTLAA Supplemental Assessment F-20
F.6 Required Assessment Matters under s.25 of EAA F-29
F.7 VC Assessments F-31
F.7.1 Project Effects F-33
F.7.2 Cumulative Effects F-43
F.8 Indigenous Interests F-43
F.8.1 Project Effects on Indigenous Interests F-46
F.9 Other Matters under S. 25 of the EAA F-48
F.9.1 Risks and Uncertainties F-48
F.9.2 Malfunction and Accidents F-52
F.9.3 Effects on Current and Future Generations F-56
F.9.4 Greenhouse Gas Emissions F-57
F.10 Summary of Mitigation Measures F-58
F.11 Statutory Requirements under the *Impact Assessment Act* F-68
F.12 Conclusion F-73
F.13 References F-75
F.14 Figures F-78

List of Tables

Table F-1 – Anticipated Permitting Requirements F-18
Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application F-21
Table F-3 –Screening of Section 25 Matters F-29
Table F-4 – Potential Interactions with Valued Components F-31
Table F-5 – Assessment of Potential Effects to Valued Components in the updated Transmission Line Assessment Area F-34
Table F-6 – Summary of Key Information, Indigenous Knowledge and Concerns for the Transmission Line Related to Indigenous Interests F-44
Table F-7 – Characterization of Risk F-49
Table F-8 – Potential Risks, Uncertainties and Potential Measures to Reduce Uncertainty F-50
Table F-9 – Potential Malfunctions and Accidents Associated with the Transmission Line F-53
Table F-10 – Summary of Mitigation Measures F-59
Table F-11 – Concordance of Potential Effects Within Federal Jurisdiction F-68
Table F-12 – Concordance with Factors to be Considered F-69

List of Figures

Figure F-1 – Updated Transmission Line Assessment Area F-79
Figure F-2 – Key Environmental Constraints in the uTLAA F-80

List of Photos

Photo F-1 – Approximate Option 1 Transmission Line Alignment through Nass Bay F-8
Photo F-2 – Approximate Option 1 Transmission Line Alignment through Iceberg Bay F-9
Photo F-3 – Option 1 Transmission Line Exit at Iceberg Bay F-10
Photo F-4 – Cutblock along Option 3 ..... F-11
Photo F-5 – Transmission Line Marine Entry on the Mylor Peninsula F-12
Photo F-6 – Transmission Line Terminus on Pearse Island F-13

Acronyms and Abbreviations

AEAA	Acidification and Eutrophication Assessment Area
AIR	Application Information Requirements
AtoN	Aids to navigation
BC	British Columbia
CCG	Canadian Coast Guard
DFO	Fisheries and Oceans Canada
EMF	Electric and magnetic fields
FEED	front-end engineering and design
FLNG	floating liquefied natural gas production, storage and offloading facility
ITT	Issues Tracking Table
km	kilometre
LAA	Local Assessment Area
LNG	liquefied natural gas
MS-LAA	Marine Shipping Local Assessment Area
MT-LAA	Marine Terminal Local Assessment Area
NGL	natural gas liquids
Nisga'a Treaty	Nisga'a Final Agreement
OGDA	Old growth deferral area
OWAA	Open Water Assessment Area
PRGT	Prince Rupert Gas Transmission
Project	Ksi Lisims LNG – Natural Gas Liquefaction and Marine Terminal Project
QP[1]	Qualified professional
RAA	Regional Assessment Area
RMA	Riparian Management Area
RRZ	Riparian Reserve Zone
SARA	*Species at Risk Act*
SDR	Systematic data recovery
Site	Project site
TAC	Technical Advisory Committee
TEM	Terrestrial ecosystem mapping
TLAA	Transmission Line Assessment Area
uTLAA	Updated Transmission Line Assessment Area
VC	Valued Component
VRI	Vegetation Resources Inventory

[1] This term includes all defined qualified persons, as well as other registered professionals or accredited practitioners that may not be specifically referenced in legislation (Qualified Persons Cross-Ministry Working Group Province of British Columbia 2014). This encompasses other persons, professionals and/or resource specialists under the direction or supervision of a qualified professional.

APPENDIX F – TRANSMISSION LINE ASSESSMENT AREA SUPPLEMENTAL INFORMATION

F.1 Introduction

The Nisga'a Nation is proposing to develop a 287 kilovolt (kV) electric transmission line to interconnect the proposed Ksi Lisims LNG – Natural Gas Liquefaction and Marine Terminal Project (**Project**) at Wil Milit with BC Hydro's grid, provide reinforcement to the Nisga'a Villages power system, and supply and interconnect potential new generation projects in the region. The western portion of the transmission line between the Ksi Lisims LNG facility and Nisga'a Lands (as defined in the Nisga'a Final Agreement [**Nisga'a Treaty**]) is included in the scope of the Project's environmental assessment as defined in the Project's Process Order (EAO 2023) published under Section 19(2) of the *Environmental Assessment Act.* The Application Information Requirements (**AIR**) for the Project (EAO 2023) defined a transmission line assessment area (**TLAA**) within which the portion of the transmission line between the Project and Nisga'a Lands will be developed, as the transmission line route was not known at the time that the AIR was issued. At that time, the identity of the third party that would be responsible for the transmission line was also unknown.

During review of the Proponents' (Nisga'a Nation, Rockies LNG Limited Partnership and Western LNG LLC [via its subsidiary, Western LNG]) Application for an Environmental Assessment Certificate (**Application**), at the request of the Environmental Assessment Office (**EAO**), the Nisga'a Nation presented information in respect of the transmission line to the Technical Advisory Committee (**TAC**) on March 11, 2024. During the presentation, the Nisga'a Nation informed the TAC that it would be responsible for the development of the transmission line and identified a proposed route within the TLAA. Based on this information, the EAO included a requirement in the Notice Regarding Application Review[2] (**Notice**) for the following supplemental information in relation to the transmission line:

- Identify an updated Transmission Line Assessment Area (**uTLAA**) based on the proposed route and assess the potential effects of the transmission line within this uTLAA;
- Provide revised responses to all comments relating to the transmission line in the Issues Tracking Table (**ITT**) to reflect the additional information provided to the TAC; and
- Identify mitigation measures for the construction, operation and decommissioning of the proposed transmission line within the uTLAA.

[2] Ksi Lisims LNG Natural Gas Liquefaction and Marine Terminal Project Notice Regarding Application Review dated April 10, 2024 available here: https://projects.eao.gov.bc.ca/api/public/document/6616c9ac638281002234d503/download/KSILIS_NoticeReport_FINAL_2024APR10.pdf

This supplement has been developed to meet these requirements. The uTLAA is described in Section F.2 and shown in Figure F-1, potential effects are assessed in Sections F.7 and F.8, updated responses to the ITT are summarized in Section F.5 with full responses provided in Appendix G of the Application, and mitigation measures are identified in Sections F.7, F.8, and F.9 and summarized in Section F.10.

F.2 Transmission Line Description

The 287 kV transmission line is expected to be approximately 114 to 127 kilometres (**km**) in total length, consisting of up to 112 km of overhead terrestrial alignment and approximately 15 to 25 km of submarine alignment, depending on the routing. The westernmost 31 to 44 km, (22-28%) of the transmission line will be located outside of Nisg̲a'a Lands in the Nass Wildlife Area (as those terms are defined in the Nisg̲a'a Treaty). In addition to providing electricity to the Project, the transmission line will also facilitate improved electric grid service and reliability to the four Nisg̲a'a villages: Gitlaxt'aamiks, Laxgalts'ap, Gitwinksihlkw, and Gingolx via a new 25 kV submarine cable from the north end of Mylor Peninsula to Gingolx, and facilitates the ability to connect future power generation projects in the region. The proposed 25 kV connection to Gingolx is outside the scope of the Project.

The focus of this supplement is the portion of the proposed transmission line extending approximately 31 to 44 km between the Project site (**Site**) and Nisg̲a'a Lands, in alignment with the scope of the Project subject to assessment as per the Project's Process Order under Section 19(2) of the *Environmental Assessment Act*. This includes approximately 15 to 29 km of terrestrial transmission line, and approximately 15 to 23 km of submarine cable, depending on the final route selected.

This section provides:

- An overview of the proposed route options within the uTLAA
- A description of key activities associated with the transmission line
- A description of existing conditions in the uTLAA

F.2.1 Route Options and the uTLAA

Based on screening studies completed to date, the Nisg̲a'a Nation has defined the uTLAA and proposed three potential routes within the uTLAA to consider further. Section F.3 provides additional information on the route selection process.

As shown on Figure F-1, the northern 15 km of all three routes in the uTLAA follow the same alignment from the Site, via submarine cable heading southeast through Portland Canal, across Portland Inlet to a landing site at or near the former Arrandale Cannery on the Mylor Peninsula. The proposed routes then run over land across Mylor Peninsula towards Iceberg Bay and from there, diverge as follows:

- Option 1 runs through Iceberg Bay and Nass Bay, paralleling the approved certified pipeline corridor for the Prince Rupert Gas Transmission (**PRGT**) project. Approximately 23 km of submarine cable would be required for this route in the uTLAA, including approximately 8 km of submarine cable through Iceberg Bay and Nass Bay. The terrestrial portion of this proposed route is expected to be just over 15 km in length
- Option 2 runs along the shoreline of Iceberg Bay and Nass Bay, following the approved certified pipeline corridor for the PRGT project. No additional submarine cable beyond the northern 15 km would be required for this route. The terrestrial portion of this route in the uTLAA is expected to span approximately 16 km in length
- Option 3 runs inland to the south of Iceberg Bay following existing linear disturbances (active Forest Service Roads) along Chambers Creek and then proceeding northeast along Flewin Creek, in an area included in the baseline studies for the PRGT project but not carried forward for approval in that project. This is the longest of the proposed routes in the uTLAA with an approximate terrestrial portion of 29 km. No additional submarine cable beyond the northern 15 km would be required for this route.

The uTLAA consists of an approximately 500 metre (m) buffer on either side of the terrestrial portions of the three potential route options, and an approximately 1 km buffer on either side of the marine portions of the conceptual route options. As described in Section F.3, routing studies completed to date have been based on available desktop-level information, and there is greater uncertainty in the underwater conditions for the marine routing necessitating a larger buffer for future route refinement and integration of field data.

The Nisg̲a’a Nation intends to carry these three route options through subsequent planning and engineering steps but will only construct one transmission line route in the uTLAA. The uTLAA as defined in this supplement supports a refined understanding of potential effects of the transmission line (see Sections F.7 and F.8) from the assessment that was presented in the Application filed for the Project on October 16, 2023. The uTLAA is anticipated to encompass the physical works associated with construction, operation and decommissioning of the transmission line between the Site and Nisg̲a'a Lands, including the right-of-way and associated infrastructure.

F.2.2 Key Activities

This section provides an overview of anticipated activities associated with construction, operation, and decommissioning of the transmission line, which will be typical of a construction project of this type.

F.2.2.1 Construction

Construction of the transmission line is expected to begin in Q3 of 2025 and is estimated to take up to approximately 3 years. This schedule will be refined through front-end engineering and design (**FEED**). Construction work is currently expected to occur approximately ten to twelve hours per day, six or seven days per week, safety and weather permitting. For both the terrestrial and submarine portions of construction, geotechnical and geophysical investigations will inform the routing, designs, and installation equipment that will be used to reduce risks, expedite installation, and reduce costs associated with the transmission line.

The labour force requirements for the transmission line will be determined during FEED. A portion of the construction workforce is expected to originate from local communities, including Nisga'a Nation and neighbouring Indigenous nations. Some specialized trades and expertise may necessitate sourcing labour from elsewhere in British Columbia (**BC**), Canada, or internationally. While there are uncertainties regarding potential jobs, the transmission line is not currently expected to create any new permanent jobs.

The proposed activities for construction of the terrestrial portion of the transmission line are expected to include those typical of a high-voltage overhead transmission line. These activities will occur sequentially at different times and generally include:

- vegetation clearing and grubbing
- access road and crane pad construction
- transportation of equipment and materials
- tower foundation installation
- tower erection and conductor stringing
- site restoration along the route.

Depending on the final routing and soil type, construction may require excavating for caisson foundations that are used when the surface soil is too weak to support the imposed loads. In more stable soils, directly embedded poles and concrete spread footings may be used. In some areas, rock anchor foundations may require drilling and grouting. The foundation designs will also consider the unique properties of the bedrock, such as its compressive strength and deformability. Guy anchors will also be designed based on soil conditions to resist the uplift load of structure supporting guy wires.

Transmission structures are expected to be tangent, angle, and dead-end structures for standard spans and/or tangent crossing structures and dead-end crossing structures for long-span crossings. Where the installation of lattice structures is impractical, a specialized variant may be designed. Structure designs will be developed during FEED for the transmission line to accommodate the electrical and mechanical stresses they may undergo during operation. Construction cranes will likely install lower sections, while helicopters may lift and mount upper sections. Some towers may be installed by helicopter depending on access conditions. The conductor will be installed using reels and tensioning equipment at a limited number of locations.

For the submarine portion of the transmission line, the primary activity will involve laying and/or burying the submarine cable. As described in Section 1.9.4.3 of the Application, construction in intertidal and shallow subtidal habitats will typically use a water jet and/or excavator to install subsea cables to approximately 1 m depth. In subtidal habitats, cable will typically be laid out on the seabed using a specialized marine vessel. The marine cable is expected to settle into marine sediments over time meaning no active trenching or burial is likely to be required. However, the extent of submarine cable burial or protection will be dependent on results of the marine surveys and cable burial risk assessments performed during future stages. These results will provide guidance on the submarine cable burial or protection requirements following a probabilistic approach given the localized threats to the cable system.

It is anticipated that submarine power transmission cable installation will be completed by dedicated cable laying vessel, barge, or marine supply vessel. The vessel is designed specifically for laying underwater cables used in electric power transmission. Precise navigation and advanced cable-laying equipment will be used for accurate placement of the submarine cable. The final locations of the cable are therefore expected to be known with precision. Different substrate types on the seafloor may result in various installation methods. The choice of method will depend on the prevailing conditions and materials.

F.2.2.2 Operation

The new 287 kV transmission line is expected to commence operation by Q4 of 2028 and will be designed to operate 24 hours per day, 365 days per year. The estimated service life of both the terrestrial and submarine portions will be at least 50 years – longer than the estimated in-operation life of the Project.

During operation, routine inspection and maintenance measures may be implemented, including but not limited to preventative maintenance and repair preparedness strategies. These measures would detail the monitoring activities used to identify any necessary maintenance and reduce the outage time of the cable system in the event of a fault. Cable monitoring systems such as distributed temperature sensing may also be implemented for the subsea cable to detect dynamic strain and pinpoint thermal anomalies. Further safety and environmental monitoring activities are expected to be developed as appropriate.

F.2.2.3 Decommissioning

In locations where the transmission line is no longer serving a purpose, or the infrastructure has reached its end of life, applicable decommissioning techniques will be employed. For the terrestrial portion, the conductor will be spooled on reels for recycling. Wood poles and cross-arms, steel structures, insulators and other hardware and materials will be removed and properly recycled or disposed of. Concrete foundations and anchors will be removed. Holes remaining after removing poles and foundations will be filled with suitable local or offsite material.

The assessment of advantages and limitations associated with either removing submarine cable or leaving it in place will rely on environmental and technical factors. The specifics and outcomes of the decommissioning process remain uncertain and will be the responsibility of the Nisga’a Nation.

F.2.3 Existing Conditions

The uTLAA covers an area of approximately 10,835 ha and is approximately 30% of the size of the TLAA which covered an approximate area of 36,370 ha. The uTLAA is within the boundaries of the North Coast Land and Resource Management Plan, which defines certain areas where developments are prohibited (BC MSRM 2005); the uTLAA is outside of these areas and therefore the transmission line is consistent with land use planning for the region. The marine portion of the uTLAA is within the boundaries of several marine use plans, including Pacific North Coast Integrated Management Area, Marine Plan Partnership for the North Pacific Coast and the Canada-BC Marine Protected Area Network Strategy. Indigenous nation marine plans also apply to the uTLAA.

The transmission line route options cross between 16 and 43 mapped watercourses, depending on the route (Figure F-2). However, this number may change depending where within the uTLAA the transmission line is ultimately constructed. Named watercourses crossed by the proposed transmission line routes include Matheson Creek (watershed code: 910-908300), Chambers Creek (watershed code: 500-009000), Flewin Creek (watershed code: 500-010700), Welda Creek (watershed code: 500-016300), and Ksgyukwsa'a (watershed code: 500-018500). Except for Matheson Creek, these watercourses, as well as some of their tributaries, have previously documented fish observations (BC ENV 2024). Salmon have been recorded spawning in four of these watercourses. Chambers Creek has historical records for spawning chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), chum (*O. keta*), and pink salmon (*O. gorbuscha*), Flewin Creek and Welda Creek have historical records of spawning pink salmon, and Ksgyukwsa'a has historical records of spawning chum and pink salmon (Rolston and Proctor 1999, Hancock and Marshall 1984). No fish species documented in the uTLAA are listed as species at risk or species of special concern by the *Species at Risk Act* (**SARA**), the Environmental Protection and Management Regulation, Committee on the Status of Endangered Wildlife in Canada, or the province of BC (Government of Canada 2024, BC Energy Regulator 2023, BC Conservation Data Centre 2024). There is no identified critical habitat for any freshwater fish species in the uTLAA (Fisheries and Oceans Canada [**DFO**] 2024). DFO considers North Coast chum, northern coho salmon, and Skeena and Nass Chinook, which are found in the uTLAA, to be stocks of concern (DFO 2023).

The uTLAA includes marine waters in portions of Nass Bay, Portland Inlet and Portland Canal. These areas, and the North Coast of BC in general, support highly productive marine environments that host a large variety of fish, invertebrate and marine mammal species. All five species of Pacific salmon (chinook [*Oncorhynchus tshawytscha*], chum [*Oncorhynchus keta*], coho [*Oncorhynchus kisutch*], pink [*Oncorhynchus gorbuscha*], and sockeye [*Oncorhynchus nerka*] salmon), as well as coastal cutthroat trout (*Oncorhynchus clarkii clarkii*), steelhead trout (*Oncorhynchus mykiss*), Dolly Varden char (*Salvelinus malma*), and eulachon (*Thaleichthys pacificus*) occur within the marine waters of the uTLAA (LGL 2023). In addition to these anadromous (freshwater-spawning) fish, a rich diversity of pelagic (mid-water) and benthic (bottom-dwelling) marine fish use this area either seasonally or year-round. These include Pacific herring (*Clupea pallasii*), pollock (*Pollachius* spp.), sole (*Soleidae* spp.), rockfish (*Sebastes* spp.), halibut (*Hippoglossus stenolepis*), and Pacific cod (*Gadus macrocephalus*). There are several fish species of conservation concern that have the potential to occur within the marine waters of the uTLAA; however,

only one was visually confirmed during field surveys. A single quillback rockfish (*S. maliger*), designated as threatened under COSEWIC, was observed during subtidal surveys off the northeastern side of Pearse Island in 2022. The uTLAA overlaps with two DFO designated important areas for fish: eulachon and pollock. There is no overlap with currently identified critical habitat for marine fish and no overlap with rockfish conservation areas.

A large diversity of marine invertebrates occur within the uTLAA including a number of traditionally harvested species such as octopus, clams, chitons, mussels, sea cucumbers, barnacles, Dungeness crab (*Metacarcinus magister*), prawns, and shrimp. Only one invertebrate species of conservation concern, northern abalone (*Haliotis kamtschatkana*), potentially exists in the waters overlapping with the uTLAA. Despite the potential for occurrence, no historical records of northern abalone within the uTLAA have been uncovered and this species is understood to preferentially inhabit the more exposed outer coast waters of Chatham Sound. The uTLAA overlaps with one DFO designated important area for tanner crab. There is no overlap with identified critical habitat for marine invertebrates.

The Pacific waters of northern BC, including those within the uTLAA, support a wide variety of marine mammals. Species utilizing the marine waters of the uTLAA include northern resident killer whales (*Orcinus orca)*, harbour porpoises (*Phocoena phocoena vomerina*), humpback whales (*Megaptera novaeangliae*), Steller sea lions (*Eumetopias jubatus*), and harbour seals (*Phoca vitulina*). Except for harbour seals, the previously listed marine mammals are all listed as being of conservation concern on Schedule 1 of the SARA, with designations ranging from special concern to threatened. Major changes in prey abundance, tied to the return of highly migratory fish species such as eulachon and salmon, attract marine mammals on a seasonal basis to the uTLAA (primarily Portland Inlet and Nass Bay), though some are also year-round residents. There is no SARA designated critical habitat currently identified in the uTLAA.

A variety of marine habitats exist throughout the uTLAA which span the nearshore intertidal and shallow subtidal zones down to deep (>300 m) subtidal zones. Three routing options for the transmission line through the Nass Bay area are being presented. Option 1 would involve approximately 8 km of marine cable installation in this area of the uTLAA, crossing the seabed in Nass Bay then turning into Iceberg Bay and exiting at the marine landfall (Figure F-1). Option 2 follows the shoreline of Nass Bay. Nass Bay is characterized as a shallow, soft substrate (i.e., sand and mud) bay predominantly surrounded by a steep rocky shoreline along its perimeter (Photo F-1).

Photo F-1 – Approximate Option 1 Transmission Line Alignment through Nass Bay

SOURCE: SeaChange Marine Conservation Society (2015)

After crossing Nass Bay, the Option 1 route will then transition to deeper waters (>50 m) in Iceberg Bay (Photo F-2). Option 2 traverses the shoreline of Iceberg Bay, which has steep topography. Option 3 avoids the steep topography of this area by proceeding southwest parallel to Flewin Creek, then joining existing linear disturbances (Forest Service Roads) to proceed northwest back towards Mylor Peninsula, parallel to Chambers Creek.

Photo F-2 – Approximate Option 1 Transmission Line Alignment through Iceberg Bay

SOURCE: SeaChange Marine Conservation Society (2015)

After the marine crossing of Nass Bay and Iceberg Bay, the Option 1 route then proceeds back to land via a wide, low relief beach surrounding Chambers Creek (Photo F-3).

Photo F-3 – Option 1 Transmission Line Exit at Iceberg Bay

SOURCE: SeaChange Marine Conservation Society (2015)

There are a number of forestry cut blocks along the portion of Option 3 that runs south of Mylor Peninsula along existing Forest Service Roads parallelling Chambers Creek (Photo F-4).

Photo F-4 – Cutblock along Option 3

SOURCE: Stantec (2013)

Common to all three route options, the transmission line will then travel overland across Mylor Peninsula before entering the ocean at or near Low Point near the former Arrandale Cannery site (Photo F-5). This area is characterized by a wide, low relief beach that is a mix of predominantly gravel and cobble substrates that transitions to a moderately steep drop-off to deeper marine waters (>300 m).

Photo F-5 – Transmission Line Marine Entry on the Mylor Peninsula

SOURCE: SeaChange Marine Conservation Society (2015)

Previous benthic habitat mapping completed for the PRGT overlaps with approximately 44% of the deepwater portions of the uTLAA in Portland Inlet (PRGT 2014, Appendix L-4 Benthic Habitat Mapping). Habitats observed were primarily classified as bioturbated mud (soft sediment with frequent faunal burrows) with a small section of mobile silt (silt with no visible fauna) approximately 2 km from the shore of Low Point and an area classified as high-relief rock (boulder and bedrock) with sparse epifauna off Ramsden Point. The geophysical survey completed for PRGT also supported the identification of biologically sensitive habitat features along the surveyed route. No sponge reefs or coral gardens (dense aggregations of coldwater corals) were observed within the uTLAA.

After an approximately 15 km section of surface lay on the seabed, the transmission line will reach its terminus at the Project's marine terminal location on Pearse Island (Photo F-6). The proposed approach to shore is across a steep incline that is primarily soft sediments in deeper (>100 m) depths, with increasing gravel and cobble in mid- to shallow depths. The intertidal zone includes cobbles and boulders with sections of exposed bedrock. A fringing layer of bull kelp (*Nereocystis luetkeana*) exists in shallow subtidal areas along the northeast side of Pearse Island where the transmission line is proposed to make landfall.

Photo F-6 – Transmission Line Terminus on Pearse Island

SOURCE: SeaChange Marine Conservation Society (2015)

The uTLAA is located within the Southern Boundary Ranges, North Coast Fjords, and the Kitimat Ranges Ecosections (Mylor Peninsula). The Kitimat Ranges Ecosection is an area of steep-sided mountains dissected by fjords and composed of largely eroded granitic rock (Demarchi 2011). Pearse Island is within the Southern Boundary Ranges Ecosection and the marine portion of the uTLAA is within the North Coast Fjords Ecosection. The uTLAA is located within the CWH, Mountain Hemlock, and Coastal Mountain-heather Alpine biogeoclimatic zones.

There are no known occurrences of red- or blue-listed plant or lichen species within the uTLAA outside of the Arctic daisy (*Arctanthemum arcticum* spp. *arcticum*) occurrence documented by Project surveys on Pearse Island. However, Arctic daisy is likely to occur in estuarine meadows on the Mylor Peninsula, based on the observation on Pearse Island and a BC CDC record of Arctic daisy located on the south shoreline of Nass Bay near the mouth of Ksgyukwsa'a Creek (BC CDC 2024). Based on the reconnaissance-level terrestrial ecosystem mapping (**TEM**), blue-listed ecological communities are present throughout the uTLAA; however, red-listed ecological communities occur primarily on the east side of the uTLAA in a floodplain on the landmass connecting the Mylor Peninsula to the Coast Mountains. Reconnaissance-level TEM (Blackwell and Associates 2018) indicates that wetlands are present throughout the uTLAA. Based on Vegetation Resources Inventory (**VRI**), old forest is present throughout most of the uTLAA; there are patches of very old forest scattered on Pearse Island and the Mylor Peninsula. There is potential that pine mushroom could occur (given the presence of host species such as pine (*Pinus spp.*) and hemlock (*Tsuga* spp.)); however, it is more commonly found along the Nass River in the Interior Cedar-Hemlock

biogeoclimatic zone (Gamiet et al. 1998). Pine is the leading tree species in approximately 120 ha (1%) of the uTLAA, and a secondary species in approximately 126 ha (1%) of the uTLAA.

The uTLAA does not overlap any parks, ecological reserves, migratory bird sanctuaries, Important Bird Areas, or Wildlife Habitat Areas. The uTLAA does overlap an Ungulate Winter Range polygon designated for mountain goat (*Oreamnos americanus*). The uTLAA overlaps the Khutzeymateen and Stewart Grizzly Bear (*Ursus arctos*) Population Units (Environmental Reporting BC 2020) (Figure F-2). The Khutzeymateen Grizzly Bear Population Unit has a conservation ranking of low,[3] and the Stewart Grizzly Bear Population Unit has a conservation ranking of negligible (Environmental Reporting BC 2020). The uTLAA is within the Northern Mainland Coast Conservation Region for marbled murrelet and overlaps with Geographic Location Polygons that may contain terrestrial (nesting) critical habitat for marbled murrelet (*Brachyramphus marmoratus)* (Figure F-2). These polygons represent areas where biophysical attributes that meet the definition of terrestrial critical habitat may occur (ECCC 2023). Biophysical attributes for marbled murrelet nesting includes old growth coniferous forest with canopy gaps and tall trees that have large mossy branches to support a nest (ECCC 2023).

There are 158 bird species likely to occur in the uTLAA (see Appendix A in Appendix 7.07). There are records of three bald eagle (*Haliaeetus leucocephalus*) nests within the uTLAA (Government of BC 2024). Bald eagle nests are protected year-round under the BC *Wildlife Act*. There are 43 mammal species that are likely to occur within the uTLAA (see Appendix A in Appendix 7.07). There are records of moose (*Alces alces*), bears, and grey wolf (*Canis lupus*) within the uTLAA (Darimont et al. 2005; Demarchi et al. 2017). Mountain goat likely occurs in steep, higher elevation habitat within the uTLAA, including in the Ungulate Winter Range polygon. Mink (*Neovison vison*), Pacific marten (*Martes caurina*), and red fox (*Vulpes vulpes*) have been trapped in traplines within the uTLAA (BC MOF 2023). Bats are likely to forage in open areas and open forest in the uTLAA and roost in mature to old forest in the uTLAA. There are six amphibian and one reptile species likely to occur within the uTLAA (see Appendix A in Appendix 7.07). There are no detection records of amphibians within the uTLAA, however western toad (*Anaxyrus boreas*) and other pond-dwelling amphibians are likely to occur in wetland habitat and slow-moving streams within the uTLAA.

A preliminary review of the Remote Access to Archaeological Data application maintained by the Province of BC was conducted to characterize known archaeological and heritage resources in the uTLAA. Based on that review there are a total of 25 recorded archaeological and heritage sites within the uTLAA. This includes recorded pre- and post-contact archaeological sites, and a Provincially Recognized Heritage Site. The 25 sites within the uTLAA include 18 culturally modified tree (CMT) sites (e.g., bark stripped, aboriginally logged, cambium stripped, and other modified trees), three surface lithic sites, one subsistence feature site (fish trap), one cairn site, one subsurface cultural material site (e.g., fauna and fire altered rock), and a Provincially Recognized Heritage Site (GfTm-13) which includes the historic Arrandale and Nass Harbour salmon canneries. The potential to encounter any paleontological resources

[3] Grizzly bear conservation ranking is based on a combination of population size and isolation, population trend, and level of threat. Conservation ranking categories range from negligible concern to extreme concern (Morgan et al. 2019).

along the route is considered to be very low. The bedrock comprises igneous granodiorite and highly metamorphosed, marine sedimentary rocks which have been foliated and recrystallized. Any overlying glacial deposits are likely to be thin tills deposited in settings not conducive to fossil formation.

Section F.4 provides an overview of additional studies Nisga'a Nation will complete to further characterize baseline conditions in the uTLAA to support anticipated permitting requirements for the transmission line. Section F.7 includes commitments for pre-construction surveys to support detailed design of the transmission line.

F.3 Route Selection

Section 1.9 of the Application for an Environmental Assessment Certificate includes an overview of several preliminary transmission line routes that have been considered to-date. The Application presents an evaluation of technically and economically viable means of developing the transmission line within the TLAA that included consideration of subsea and aerial crossing construction options for crossing bodies of water. Based on engineering and design conducted to-date, the Nisga'a Nation has ruled out an aerial marine crossing construction option due to technical constraints associated with the width of the crossing location, and plans to proceed with a transmission line route that includes only subsea and terrestrial components.

The uTLAA was developed to manage engineering and environmental constraints as route design progresses. From an engineering perspective, route length, route geometry, topography, bathymetry, access and geotechnical considerations drive route planning. From an environmental perspective, sensitive environmental and archaeological features are considered during route planning. For the terrestrial portions of the routes, this includes:

- Known archaeological and heritage sites
- Watercourse crossings and wetlands
- Critical habitat for species at risk
- Ecological communities of interest, including wetlands and old forest
- Identified Indigenous use sites

For the marine portions of the routes this includes:

- Benthic conditions
- Route bathymetry
- Existing submarine infrastructure (e.g., pipes, power cables, communications cables)
- Fishing zones
- Critical habitat for species at risk
- Known archaeological and heritage sites

- Dredging areas
- Anchoring areas
- Identified Indigenous use sites

To advance the planning of the transmission line corridor for the entire route, a preliminary routing assessment was completed in late 2023 for two primary routes, a route option on the north side of Nass Bay and a route option on the south side of Nass Bay, as well as a series of marine and aerial crossing alternatives to reach the Site. The purpose of the routing assessment was to refine routing and identify preliminary constraints. As part of that constraints screening, a desktop review for constructability constraints and critical features for avoidance was completed and the routes were adjusted to address technical engineering constraints with topography, watercourse crossing approaches, and crossings of existing or planned infrastructure. Where possible, sensitive features such as wetlands and protected areas were avoided. Results of the screening, including feedback from the Nisga'a Nation community, indicated that a route option south of Nass Bay was preferred, eliminating options within the TLAA that reached the Site via the north side of Nass Bay and Gingolx and/or Ashington Range.

The preliminary screening considered two main options in the TLAA: the Nasoga option and the Mylor option. The Mylor option routes across Mylor Peninsula; the terrain on Mylor Peninsula features moderately steep inclines, gradually sloping down to the shoreline. At the shoreline, the terrestrial transmission cable would transition to 15 km of submarine cable to reach the Site. The Nasoga option routes through Nasoga Gulf as a submarine cable, around the southwestern end of Mylor Peninsula to reach the Site. The Mylor option was identified as the preferred option, as the Nasoga option has a substantially longer submarine portion, introduces routing constraints and complicates maintenance operations due to the narrow nature of Nasoga Gulf along with the co-location with the PRGT pipeline. For the Mylor option, transitioning from a terrestrial to submarine cable is identified at the northern end of the Mylor Peninsula based on favourable bathymetry and landfall conditions compared to steeper conditions that are more prevalent further to the south on Mylor Penninsula. This facilitates a more feasible construction process. The routing across Mylor Peninsula aims to reduce impacts to old forest, potential marbled murrelet critical habitat, and archaeological and heritage resources. The proposed marine entry on Mylor Peninsula is the location of the former Arrandale cannery. Other projects in this area which EAO has determined are not likely to result in significant adverse effects to the marine environment or transportation and access, including marine use, include the Westcoast Connector Gas Transmission Project (EAO 2014a) and PRGT (EAO 2014b).

Nisg̲a’a Nation has included three route options (Options 1, 2 and 3) in this supplement, as outlined in Section F.2. The three options differ in their routing from where they leave Nisg̲a’a Lands to their approach onto Mylor Peninsula. After leaving Nisg̲a’a lands, Option 1 includes a submarine alignment through Nass Bay and Iceberg Bay, while Option 2 parallels the shore of Nass Bay and Iceberg Bay. Option 3 traverses southwest along Flewin Creek then turns northwest and follows an existing linear disturbance paralleling Chambers Creek. The Option 3 alignment extends outside of the original TLAA identified in the Application to avoid complex terrain constraints, and follows relatively level topography compared to the

topography of Option 2 (see Photo F-2). The northwestern 15 km of the transmission line route from Mylor Peninsula to the Site are identical for all three alternatives.

Route selection to-date has focused on landscape-scale analyses using desktop data. The next steps for refining route selection will involve collection of terrestrial and marine field data before proceeding with FEED. This information will be used to further evaluate environmental and engineering constraints in selecting the final route option within the uTLAA. Only one transmission line route will ultimately be constructed in the uTLAA.

F.4 Permitting Plan

The transmission line is below the applicable triggers for Electricity Projects in the Reviewable Projects Regulation and the Physical Activities Regulation. However, the entire transmission line (approximately 114 to 127 km) will be subject to several key instruments under Nisga'a laws, enacted under the Nisga'a Treaty as well as federal and provincial regulatory instruments, including provincial permits, licences, and authorizations. An initial summary of anticipated permitting and regulatory requirements specific to the construction and operation of the transmission line is presented in Table F-1. It is recognized that some Indigenous nations may have their own additional permitting requirements for archaeological works; these are not included in Table F-1.

Various field studies are planned to support these permit applications, including:

- Vegetation surveys, including surveys of rare plants of conservation concern, invasive plant species, and cultural and traditional plants.
- Ecosystems, including ecological communities, wetlands, and ecological communities of conservation concern, to support TEM
- Wildlife surveys for identified focal species and their habitat, including autonomous recording units (ARUs) for target bird and bat species, wildlife camera program, habitat suitability modelling and verification, and incidental observations
- Freshwater aquatics surveys including fish habitat assessment and fish species distribution at each aquatic feature crossed by transmission line infrastructure
- Marine surveys including multi-beam sonar and remote-operated vehicle (ROV) surveys in subtidal sections of the transmission line route crossing from Portland Inlet to Arrandale and intertidal and foreshore habitat assessments at terrestrial to submarine cable transitions.
- Archaeology works including a desktop based Archaeological Overview Assessment (AOA) to inform the need to undertake an Archaeological Impact Assessment (AIA).

Table F-1 – Anticipated Permitting Requirements

Regulatory Instrument	Responsible Agency/Department	Overview	Status
Nisg̲a'a Treaty Requirements			
Chapter 10 – Environmental Assessment and Protection	Nisg̲a'a Lisims Government (NLG) Lands and Resources	Consultants retained by the Nisg̲a'a Nation will conduct an assessment under Chapter 10 – Environmental Assessment and Protection of the Nisg̲a'a Treaty. An NLG Lands Officer is required to accompany contractors performing assessment field work to ensure compliance with the requirements of the Nisg̲a'a Treaty.	In progress.
Investigative Use Permit	NLG Lands and Resources	A permit is required for non-invasive environmental and geotechnical assessment work.	To be initiated in Q2 2024.
Timber Harvesting Permit / Contract	NLG Lands and Resources	A permit is required if timber clearing is required for certain purposes. Construction activities involving clearing of timber are regulated under the *Nisg̲a'a Forest Act* which contains prescribed standards to mitigate destruction of forest resources, as well as, legislative provisions relating to Nisg̲a'a timber mark, timber utilization standards, and control and suppression of forest fires.	To be initiated in Q2 2024.
Statutory Right of Way / Licence of Occupation	NLG Lands and Resources	A tenure is required for a statutory right-of-way, licence of occupation, construction of a road (including temporary access road), or a lease.	To be initiated in Q2 2024.
Federal and Provincial Requirements			
Investigative Use Permit under *Land Act*	BC Ministry of Land, Water and Resource Stewardship ("WLRS")	Required for any mechanized drilling activity including geotechnical investigation.	To be initiated in Q2 2024.
Short term licence of occupation, multi-tenure instrument, statutory right of way, licence of occupation and/or crown land lease under *Land Act*	WLRS	Tenures for the various components and activities associated with construction and operation of the transmission line.	To be initiated in Q2 2024.
Permit over crown land under Portland Channel for submarine crossing under *Land Act*	WLRS	Tenures for the various components and activities associated with construction and operation of the marine components of the transmission line.	To be initiated in Q2 2024.

Table F-1 – Anticipated Permitting Requirements

Regulatory Instrument	Responsible Agency/Department	Overview	Status
Section 11 change approvals or notifications for works in and about a stream under the *Water Sustainability Act*	WLRS	Required for any modification to the nature of a stream, including any modification to the land, vegetation and natural environment of a stream or the flow of water in a stream. Required for construction in stream channel.	To be initiated in Q2 2024.
Heritage Investigation Permit under the *Heritage Conservation Act*	BC Archaeology Branch	Required for the GIS-based AOA and the AIA.	To be initiated in Q2 2024.
Fisheries Act Letter of Advice (LOA) or Authorization	Fisheries and Oceans Canada	Request for Review resulting in either LOA or Authorization for potential temporary or permanent effects to fish and fish habitat in marine habitats including shoreline, intertidal, and subtidal zones including during construction and operation of the transmission line. Potential impacts to freshwater fish and fish habitats will also be presented in a Request for Review.	To be initiated in Q2 2024.
Aeronautics Act Marking and Lighting of Obstacles to Air Navigation	Transport Canada	For new catenaries structure (power transmission lines crossing a river or valley) that will be an obstacle to air navigation.	To be initiated in Q2 2024.
Canadian Navigable Waters Act Minor Works Order	Transport Canada	For transmission line over, under, through or across any navigable water.	To be initiated in Q2 2024.

1

F.5 Influence of Consultation on the uTLAA Supplemental Assessment

During review of the Application, members of the TAC provided comments on the adequacy of the consideration of the transmission line. The Proponents received 59 comments pertaining to the transmission line during the three EAO-led rounds of review, with an additional three comments identified as relating to the transmission line subsequent to the EAO issuing their Notice regarding Application Review on April 10, 2024.

These comments focused on the following Valued Components (**VC**s) and topics:

- Surface water
- Vegetation and wetlands
- Wildlife and wildlife habitat
- Freshwater fish and fish habitat
- Marine resources
- Marine use
- Greenhouse gases
- Malfunctions and accidents
- Effects of the environment on the Project
- General or broad comments

Table F-2 provides a high-level summary of these comments as they relate to the transmission line and outlines the Proponents' approach to addressing these concerns. The unique comment ID numbers are included in Table F-2 to facilitate cross-referencing and mitigate the risk of misrepresentation due to paraphrasing. As summarized in Table F-2, the focus of these comments was generally:

- Concerns regarding the adequacy of baseline information
- Concerns regarding the qualitative approach to the effects assessment
- Concerns regarding the lack of Project-related mitigation measures for the transmission line

This supplement has been prepared to address these concerns, with revised responses to all comments relating to the transmission line provided in the ITT provided with the Application (Appendix G).

Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application

Comment ID(s)	Outstanding Concerns by Valued Component / Application Section / Topic	Proponents' Approach
BCER-020[a]	**Surface water:** ▪ Indication of insufficient characterization of baseline studies within the TLAA as it pertains to the VC	▪ Existing (baseline) conditions in the uTLAA are discussed in Section F.2.3. The results of the assessments of the potential effects and expected effectiveness of proposed mitigations are discussed in Section F.7. Additionally, confirmation was previously provided that route selection, design and construction is anticipated to follow best management practices, which are expected to reduce the potential for instream works and limit the extent of riparian impacts. As a result, residual effects to surface water quality are expected to be within applicable water quality guidelines for the protection of aquatic life.
LKB-005 MFN-005 LKB-015 MFN-015[a] BCER-036[a] LKB-003 MFN-003 LKB-004 MFN-004	**Vegetation and Wetlands** ▪ Requirement for a reasonable 'worst case scenario' analysis of the impacts of the transmission line on VCs and Indigenous interests. Must be supported by a reasonable level of baseline and include stipulations in agreements with future transmission line developers to undertake necessary studies in consultation with Lax Kw'alaams Band and Metlakatla First Nation. ▪ Request for a figure showing the overlap between the transmission line assessment area and traditional territories ▪ Request to include monitoring, Indigenous nation consultation and efforts to limit migration of impacts off-Site.	▪ An assessment of potential transmission line-related effects on vegetation and wetlands in the uTLAA are provided in Section F.7. This is supported by baseline data available at the time of writing and includes commitments to pre-construction surveys to support subsequent route planning and design. Agreements associated with future transmission line developers would need to be developed with the Nisga'a Nation, the owner of the transmission line. ▪ A figure showing the overlap between the uTLAA and traditional territories has not been developed. A shapefile of the uTLAA can be provided.

Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application

Comment ID(s)	Outstanding Concerns by Valued Component / Application Section / Topic	Proponents' Approach
		▪ Section F.8.1 discusses the Proponents' commitments to continue to work with the Indigenous nations to develop a shared understanding of how the transmission line may affect their interests. Additionally, confirmation of the development of a construction environmental management plan (**CEMP**) for the Project containing efforts to limit off-Site impacts and related mitigations was previously provided in the Proponents' Round 1 response. Anticipation of a Table of Conditions including requirements to determine the effectiveness of mitigation measures and consultation requirements for the development of supporting follow-up and management measures, if a Certificate is granted, was also previously specified.
ECCC-051 ECCC-053 LKB-011 MFN-011	**Wildlife and wildlife habitat:** ▪ Recommendation to assess and mitigate potential Project-related impacts on species at risk, migratory birds, and their habitats ▪ Requirement for a reasonable 'worst case scenario' analysis of the impacts of the transmission line on VCs and Indigenous interests. Must be supported by a reasonable level of baseline and include stipulations in agreements with future transmission line developers to undertake necessary studies in consultation with Lax Kw'alaams Band and Metlakatla First Nation.	▪ -An assessment of potential transmission line related effects on species at risk, migratory birds, and their habitats is included in Section F.7, including identification of mitigation measures specific to the transmission line ▪ An assessment of potential transmission line-related effects on wildlife and wildlife habitat is provided in Section F.7. This is supported by baseline data available at the time of writing and includes commitments to pre-construction surveys to support subsequent route planning and design. Agreements associated with future transmission line developers would need to be developed with the Nisg̲a'a Nation, the owner of the transmission line.

Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application

Comment ID(s)	Outstanding Concerns by Valued Component / Application Section / Topic	Proponents' Approach
LKB-014 MFN-014 DFO-001[a] BCER-002[a] BCER-003[a] BCER-007[a] BCER-009.[a] BCER-011[a] DFO-005 DFO-009[a] DFO-012 DFO-014	**Freshwater fish and fish habitat:** ▪ Requirement for a reasonable 'worst case scenario' analysis of the impacts of the transmission line on VCs and Indigenous interests. Must be supported by a reasonable level of baseline and include stipulations in agreements with future transmission line developers to undertake necessary studies in consultation with Lax Kw'alaams Band and Metlakatla First Nation. ▪ Recommendation to consider mitigation hierarchy when weighing the alternatives for the transmission line route ▪ Confirmation regarding non-inclusion of Nass River eulachon in the assessment of the TLAA ▪ Requests for inclusion of quantitative assessment and fish habitat surveys in TLAA. Reconsider determination of low magnitude residual effects without Site-specific fish VC data ▪ Recommendation to provide additional detail regarding potential effects of transmission line on the VC along the proposed routes and identify avoidance and mitigation measures. Alternative recommendation to EAO to consider requiring a follow up strategy to address remaining uncertainty ▪ Recommendation to clearly describe riparian setback distances for watercourses	▪ An assessment of the number of watercourses potentially crossed by the transmission line route in the uTLAA is included in Section F.7, including identification of mitigation measures specific to the transmission line. Agreements associated with future transmission line developers would need to be developed with the Nisga'a Nation, the owner of the transmission line. ▪ DFO's Fish and Fish Habitat Protection Policy Statement (DFO 2019) has been included in Section F.7 in consideration of the 'avoid, mitigate, offset' hierarchy as a policy that could mitigate or partially mitigate impacts to freshwater fish and fish habitat and will be considered when assessing route alternatives ▪ The occurrence of eulachon and overlap of the uTLAA with DFO designated important areas for eulachon is discussed in Section F.2.3 and shown on Figure F-2. Confirmation of non-inclusion of eulachon was previously provided based on typical spawning activity and remaining life history in larger rivers and no recorded presence in any of the freshwater watercourses in the Freshwater Fish and Fish Habitat Local Assessment Area (**LAA**), the Acidification and Eutrophication Assessment Area (**AEAA**), and TLAA ▪ An assessment of the number of watercourses potentially crossed by the transmission line route and magnitude of residual effects are included in Section F.7. Once design has advanced the transmission line routing, field surveys to collect data along this route will be conducted, as necessary

Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application

Comment ID(s)	Outstanding Concerns by Valued Component / Application Section / Topic	Proponents' Approach
		▪ Additional baseline information on the proposed transmission line routes is provided in Section F.2.3. Potential effects and avoidance and mitigation measures are provided in Section F.7. Once design has advanced the transmission line routing, field surveys to collect data along this route will be conducted, as necessary. ▪ Riparian setback distances are based on the riparian class of a stream. Once design has advanced the transmission line routing, field surveys to collect data along this route will be conducted, as necessary, and riparian setbacks for watercourses crossed by the transmission line will be defined
DFO-048 DFO-049 DFO-050 Gitga'at-081 Gitga'at-100[a] Gitga'at-102 LKB-019 MFN-019 LKB-025 MFN-025 LKB-028 MFN-028 LKB-029 MFN-029[a]	**Marine resources:** ▪ Requirement to provide further species- and location-specific evidence to support the conclusion that "[...] potential adverse residual effects identified within the TLAA can be mitigated, and any associated changes to Marine Resources are expected to be of a magnitude that is acceptable." Alternative recommendation to EAO to consider requiring a follow up strategy to address remaining uncertainty ▪ Requirement for more comprehensive potential transmission line impacts, mitigation measures, and residual effects ▪ Request for consideration of exceedance of BC and Canadian Council of Ministers of the Environment (CCME) water quality guidelines during construction, operation, and decommissioning activities ▪ Request for ongoing monitoring during and after construction, as well as specific mitigation measures to address impacts to VC. ▪ Requirement for a reasonable 'worst case scenario' analysis of the impacts of the transmission line on	▪ The Marine Resources Technical Data Report (Appendix 7.09A) provides a thorough review of marine organisms that utilize the North Coast of BC, including the waters of the uTLAA; this includes a desktop review of publicly available information as well as the results of Project-specific field surveys. Project field surveys covered a variety of areas (riparian, intertidal and subtidal) that are representative of the habitats and marine organisms present in the uTLAA. Existing (baseline) conditions in the uTLAA are also discussed in Section F.2.3 of this supplement. The results of the assessments of the potential effects on marine resources and proposed mitigation measures are described in Section F.7 and remaining uncertainty is discussed in Section F.9.1 ▪ See Section F.7 for an assessment of potential effects and identification of mitigation measures applicable to the transmission line ▪ Applicable water quality guidelines for the protection of marine aquatic life will be considered during mitigation application and monitoring for all phases of the transmission line (see Table F-5 for details)

Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application

Comment ID(s)	Outstanding Concerns by Valued Component / Application Section / Topic	Proponents' Approach
	VCs and Indigenous interests. Must be supported by a reasonable level of baseline and include stipulations in agreements with future transmission line developers to undertake necessary studies in consultation with Lax Kw'alaams Band and Metlakatla First Nation. ▪ Request to provide a description of mitigation measures that are technically and economically feasible that the third-party owner may consider to avoid or reduce potential adverse effects.	▪ Environmental monitoring during in-water works during construction will include consideration of marine water quality as well as the potential for injury or mortality of fish and invertebrates (see Table F-5 for details). Reports will be developed as required by permit conditions to confirm compliance of construction activities with the applicable approvals. ▪ An assessment of potential transmission line-related effects on marine resources is provided in Section F.7. This is supported by baseline data available at the time of writing and includes commitments to pre-construction surveys to support subsequent route planning and design. Agreements associated with future transmission line developers would need to be developed with the Nisg̲a'a Nation, the owner of the transmission line. ▪ See Section F.7 for identification of mitigation measures and Section F.10 for a summary of mitigation measures applicable to the transmission line

Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application

Comment ID(s)	Outstanding Concerns by Valued Component / Application Section / Topic	Proponents' Approach
Gitga'at-168[a] Gitga'at-169 LKB-052 MFN-052 TC-039[a] TC-042[a]	**Marine use:** ▪ General request for potential impacts of TL. Request for clarity on timing of availability of decommissioning plan ▪ Request for assessment of cumulative effects of construction. Activity timing may impact rights on access to harvesting resources. ▪ Requirement for a reasonable 'worst case scenario' analysis of the impacts of the transmission line on the VC and Indigenous interests. Must be supported by a reasonable level of baseline and include stipulations in agreements with future transmission line developers to undertake necessary studies in consultation with Lax Kw'alaams Band and Metlakatla First Nation. ▪ Request for clarity of the marine portion route and method of installation (aerial or sub-surface). Indicates potential requirement for consideration of *Canadian Navigable Waters Act* (**CNWA**)	▪ The estimated service life of both the terrestrial and submarine portions of the transmission line will be at least 50 years. See Section F.2.2.3 for an overview of considerations around decommissioning ▪ See Section F.7.2 for discussion regarding the cumulative effects assessment ▪ See Section F.7 for an assessment of potential effects and identification of mitigation measures applicable to the transmission line and Section F.9.1 for the risks and uncertainties. Agreements associated with future transmission line developers would need to be developed with the Nisga'a Nation, the owner of the transmission line. ▪ See Section F.3 for a description of the proposed routing of the transmission line. There will be no aerial installation of the transmission line over the marine portion of the route. The route is the responsibility of the Nisga'a Nation

Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application

Comment ID(s)	Outstanding Concerns by Valued Component / Application Section / Topic	Proponents' Approach
ECCC-032 CAS.SACC.TDR.3-R1[a] ECCC-037 EMLI-001[a] LKB-111[a] MFN-125 MFN-126 LKB-084 MFN-084MFN-086	**Greenhouse gases:** ▪ Indication of inadequate extent to Project planning and scope. Requirement for consideration of TLAA land use change emissions in the estimate of construction phase emissions ▪ Request for confirmation of transmission line development timing ▪ Request for assessment of clearing of forested lands in carbon sink assessment	▪ TLAA land use emissions were estimated as part of the Application and have been revised based on latest information available regarding the transmission line route (see Section F.9.4 of this Appendix). In addition, the GHG emissions associated with construction equipment were revised based on the latest transmission line information. ▪ See Section F.2.2.1 for a description of the construction timeline of the transmission line. See Section F.2.2.2 for a discussion of when transmission line is expected to be in operation. ▪ A carbon sink assessment for the forested lands disturbed by the construction of the transmission line is presented in Section F.9.4 of this supplement
IAAC-031	**Malfunctions and accidents:** ▪ Requirement for assessment of malfunctions and accidents to be conducted on the transmission line to meet the conditions of substitution	▪ See Section F.9.2 of this supplement for identification of potential effects and mitigation measures for accidents and malfunctions with potential to occur in association with the transmission line
NRCan-026 NRCan-028[b] NRCan-029[b] NRCan-030[b]	**Effects of the Environment on the Project:** ▪ Request for consideration of the risks to submarine infrastructure associated with the active submarine channel that extends from the Nass River along the seafloor southwest toward Dixon Entrance for a distance greater than 20 km. References are provided to assist with the approach. ▪ Request for investigations into landslide generated tsunamis for the updated transmission line route	▪ -These references will be provided to the transmission line engineers responsible for its design, for consideration during subsequent route planning and design. Data from preengineering geophysical surveys (e.g., multibeam echo sounder, sub-bottom profiler, side-scan sonar, magnetometer measurements) and a detailed marine survey will be integrated into the design to address site specific constraints and conditions of the seafloor ▪ The Proponents are committed to a future meeting or presentation of preliminary geohazards including landslide generated tsunamis. Section F.2.2.1 discusses that geotechnical and geophysical investigations will inform the routing, designs, and installation equipment that will be used to reduce risks related to the transmission line.

Table F-2 – Summary of Feedback on the Transmission Line During Review of the Application

Comment ID(s)	Outstanding Concerns by Valued Component / Application Section / Topic	Proponents' Approach
Gitga'at-031[a] KIT-005[a] KIT-011 LKB-110 KIT-071[a] KIT-072[a] Gitga'at-375[a] Gitga'at-419[a] KIT-012[a] KIT-013[a] Gitga'at-175[a] KIT-036 [a] EAO-038 [a]	**General, Unspecific to-, or Related to Multiple- VC / Application Sections:** ▪ Request for acknowledgement of changes to the aesthetic landscape of the terrestrial route due to construction and operation ▪ Request for confirmation of plans for additional substation in Gingolx or Laxgaltsap to reduce the proposed 287 kV to a distribution line to enable improved electrical reliability in Nisga'a communities ▪ Indications of inadequate extent to Project planning and scope. Requests for additional baseline and assessment of potential residual and cumulative effects on affected Indigenous nation interests ▪ Request for acknowledgment of changes to terrestrial harvest and consumption and changes to sacred places and heritage sites in the Kalum Valley ▪ Request for confirmation of transmission line development timing ▪ Recommendation of clarification of assessment boundaries (not inclusive of TLAA)	▪ The results of the assessments of the potential effects on marine resources, marine use, vegetation and wetlands, and other applicable VCs described in Section F.7 have informed the assessment of potential effects on Indigenous nation interests. This was also previously addressed in Section 1.4.6.2 of the Application through the addition of the statement: "Construction and operation of the transmission line is expected to result in changes to the aesthetic landscape of the terrestrial route." ▪ A new substation is anticipated to be located at Arrandale to step down the voltage to distribution level and supply power to Gingolx and other communities via distribution lines (see discussion in Section F.9.3). This component is outside the scope of the Project. Further design is expected to identify other requirements. ▪ Existing (baseline) conditions in the uTLAA are discussed in Section F.2.3. The results of the assessments of the potential effects on marine resources, marine use, vegetation and wetlands, and other applicable VCs described in Section F.7 have informed the assessment of potential effects on Indigenous nation interests (further described in Section F.8.1) ▪ Changes to terrestrial harvest and consumption and changes to sacred places and heritage sites are discussed in Section F.8.1 ▪ See Section F.2.2.1 for additional details on transmission line development timing. ▪ Table F-4 – Potential Interactions with Valued Components provides clarification of assessment boundaries for each VC

NOTES:

[a] Comment ID was formerly marked as closed prior to issuing of Notice.

[b] Comment ID was unrelated to the TLAA at the time the Notice was issued but became relevant for inclusion following subsequent bilateral correspondence. These comments are in addition to the 59 comments noted in Section F.5 above.

1

F.6 Required Assessment Matters under s.25 of EAA

Section 25 of the *Environmental Assessment Act* requires every assessment to (1) assess the effects of a project on the rights and interests of Indigenous nations and (2) consider a number of matters (a through k in Table 3) in every assessment. Table 3 provides a summary of how these matters are approached in this supplement as they relate to the uTLAA.

Table F-3 –Screening of Section 25 Matters

Section	Assessment Matter	Considered Further (Yes/No)	Approach
25(1)	The effects of the project on Indigenous nations and rights recognized and affirmed by section 35 of the *Constitution Act*, 1982	Yes	Section F.8 of this memorandum summarizes potential effects on Indigenous interests and identifies mitigation measures for the construction, operation and decommissioning of the proposed transmission line within the uTLAA.
25(2)(a)	Positive and negative direct and indirect effects of the reviewable project, including environmental, economic, social, cultural and health effects and adverse cumulative effects	Yes	Section F.7 (VC Assessments) of this supplement provides consideration of potential changes to environmental, economic, social, cultural or health effects associated with the uTLAA.
25(2)(b)	Risks and uncertainties associated with those effects, including the results of any interaction between effects	Yes	The information in this supplement provides additional confidence regarding outstanding uncertainties identified by the TAC based on the TLAA approach in the Application. See Section F.9.1 for discussion.
25(2)(c)	Risks of malfunctions or accidents	Yes	Section 9.0 of the Application includes an assessment of malfunctions and accidents that considers the transmission line, including potential for a malfunction of the transmission to lead to a shutdown of LNG production. Section F.9.2 of this supplement provides additional assessment of malfunction and accident scenarios with potential to occur in association with the transmission line.
25(2)(d)	Disproportionate effects on distinct human populations, including populations identified by gender	Yes	This was fully considered in the Application and, as appropriate, is discussed in Sections F.7 and F.8.
25(2)(e)	Effects on biophysical factors that support ecosystem function	No	This was addressed for the Project as a whole in Section 20.0 of the Application and no changes are anticipated based on the uTLAA.

Table F-3 –Screening of Section 25 Matters

Section	Assessment Matter	Considered Further (Yes/No)	Approach
25(2)(f)	Effects on current and future generations	Yes	This was addressed for the Project as a whole in Section 22.0 of the Application. Considerations specific to the transmission line are discussed in Section F.9.3.
25(2)(g)	Consistency with any land-use plan of the government or an Indigenous nation if the plan is relevant to the assessment and to any assessment conducted under Section 35 or 73	Yes	A brief overview of the consistency of the transmission line with land use plans is provided in Section F.2. The North Coast Land and Resource Management Plan defines Biodiversity Areas, where certain types of activities and development, including hydroelectric development, are prohibited (BC MSRM 2005). The uTLAA is not within one of these Biodiversity Areas and is consistent with established land use planning in the region. The marine portion of the uTLAA is within the boundaries of several marine use plans, including Pacific North Coast Integrated Management Area, Marine Plan Partnership for the North Pacific Coast and the Canada-BC Marine Protected Area Network Strategy. Indigenous nation marine plans also apply to the area. There are no changes from Section 2.0 of the Application.
25(2)(h)	Greenhouse gas emissions, including the potential effects on the province being able to meet its targets under the *Greenhouse Gas Reduction Targets Act* (now called the *Climate Change Accountability Act*, 2018)	Yes	The Application conservatively quantified potential greenhouse gas emissions associated with the transmission line based on a 28.6 km route in a 45 m corridor. Section F.9.3 of this memorandum provides an updated estimate of greenhouse gas emissions based on the uTLAA and route options being carried forward.
25(2)(i)	Alternative means of carrying out the project that are technically and economically feasible, including through the use of the best available technologies, and the potential effects, risks and uncertainties of those alternative	Yes	See Section F.2 of this supplement for discussion of the route selection process, in addition to the alternatives analysis provided in Section 1.9 of the Application.

Table F-3 –Screening of Section 25 Matters

Section	Assessment Matter	Considered Further (Yes/No)	Approach
25(2)(j)	Potential changes to the reviewable project that may be caused by the environment	No	Section 10.0 of the Application assessed effects of the environment on the Project. It included the TLAA in the geographic extent of the assessment and addressed potential effects of forest fires and seismic events on the transmission line. Transmission line design and final routing will integrate site-specific data to manage potential effects from environmental constraints.
25(2)(k)	Other prescribed matters	n/a	n/a

F.7 VC Assessments

The Application included an assessment of potential effects to VCs associated with construction, operation and decommissioning of the transmission line within the TLAA. To address the Notice from the EAO, this supplement assesses potential effects associated with the uTLAA and proposes mitigation measures specific to the transmission line, as applicable. For some VCs, no further assessment is warranted relative to the Application. Table F-4 shows which VC interactions are carried forward for further assessment for the uTLAA and provides the rationale for VCs that are not carried forward.

Table F-4 – Potential Interactions with Valued Components

Valued Component	Carried Forward for Further Assessment	Rationale for Inclusion/Exclusion
Air Quality	No	Potential effects in the Application were assessed broadly (i.e., not specific to any particular location within the TLAA), by calculating emissions, rather than through dispersion modelling. Total transmission line construction emissions are expected to be 35% or less of the total Project construction emissions, with the exception of volatile organic compounds associated with the potential use of two helicopters, and the extent of residual effects is limited to within 5 km of construction activities. Overall construction emissions are considered low magnitude, and further quantitative assessment based on the uTLAA and transmission route options will not change that characterization. Residual effects will be short-term, intermittent and transient. They are reversible as ambient concentrations will reduce once construction of the transmission line is complete.

Table F-4 – Potential Interactions with Valued Components

Valued Component	Carried Forward for Further Assessment	Rationale for Inclusion/Exclusion
Acoustic	No	Effects associated with the transmission line were considered in the Application. The assessment results indicate that the Ldn (day-night equivalent sound level) associated with transmission line construction activities is below Health Canada's mitigated noise level at any receptor location outside a 40 m minimum buffer zone from the transmission line right-of-way. Construction activities are not anticipated during the nighttime, so sleep disturbance noise effect is not expected. Overall construction effects are considered low magnitude, local in extent, short-term, reversible, single event, and low risk. Further quantitative assessment based on the uTLAA and transmission route options will not change this characterization.
Surface Water	Yes	Construction of the transmission line will cross surface waters and requires additional assessment for uTLAA and route options.
Groundwater	No	As described in Table 3 of the AIR, the TLAA (and similarly the uTLAA) is not applicable to this VC.
Vegetation and Wetlands	Yes	Construction of the transmission line will involve vegetation clearing and site preparation and requires additional assessment for the uTLAA and route options.
Wildlife and Wildlife Habitat	Yes	Construction of the transmission line will result in the loss of wildlife habitat and may alter wildlife movement patterns through vegetation clearing and sensory disturbance. The Project may result in increased mortality risk related to vegetation clearing, increased access by hunters and trappers, vehicle mortality, change in predator access, and collisions with overhead powerlines. The construction and operation of the transmission line requires additional assessment for the uTLAA and route options.
Freshwater Fish and Fish Habitat	Yes	Construction of the transmission line may cross fish bearing streams and requires additional assessment for the uTLAA and route options.
Marine Resources	Yes	Construction of the transmission line within the uTLAA involves the installation of approximately 15 to 23 km of cable on the seabed and will result in disturbances that will increase the risk of injury or mortality to marine organisms (primarily invertebrates through burial and crushing). Fish habitat may also be altered or destroyed as a result of construction activities. The potential for change in behaviour to marine organisms exists during the operation phase due to potential changes in electric and magnetic fields (**EMF**) from the transmission line. Additional assessment for the uTLAA and route options is required.
Employment and Economy	No	As described in Table 3 of the AIR, the TLAA (and similarly the uTLAA) is not applicable to this VC.
Marine Use	Yes	Construction of the transmission line involves the installation of approximately 15 to 23 km of cable on the seabed which could interact with marine use and requires additional assessment for the uTLAA and route options.
Infrastructure and Services	No	As described in Table 3 of the AIR, the TLAA (and similarly the uTLAA) is not applicable to this VC.

Table F-4 – Potential Interactions with Valued Components

Valued Component	Carried Forward for Further Assessment	Rationale for Inclusion/Exclusion
Community Health and Wellness	No	As described in Table 3 of the AIR, the TLAA (and similarly the uTLAA) is not applicable to this VC.
Human Health	No	No operable pathways were identified for effects to human health from the transmission line, including no hazards from EMF.
Archaeological and Heritage Resources	Yes	Construction of the transmission line involves vegetation clearing, land disturbance, and marine works that require additional assessment for the uTLAA and route options.

F.7.1 Project Effects

For VCs carried forward in Table F-5, Table F-6 presents the potential and residual effects of the transmission line as per the Application, identifies legislation, policy or best management practices and transmission line-specific mitigation measures to manage potential residual effects, updates the assessment of residual effects of the transmission line within the uTLAA (quantitatively where feasible), and summarizes any changes to the characterization of residual effects of the Project as a whole, including the transmission line within the uTLAA. The assessment of effects is based on an assumed 45 m wide terrestrial transmission line corridor, and presents a range of impacts based on the three route options within the uTLAA as shown on Figure F-1. The final route for the transmission line within the uTLAA will be determined through FEED, and only one route within the uTLAA will ultimately be constructed.

Table F-5 – Assessment of Potential Effects to Valued Components in the updated Transmission Line Assessment Area

Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
Surface Water					
Change in the chemical and physical composition of surface waters	Erosion and subsequently sedimentation and dust fall in watercourses within the TLAA. Increases in water temperature in waterbodies within the TLAA associated with riparian clearing as part of Site preparation and clearing during the construction phase, and infrastructure maintenance during the operation phase	The *Fisheries Act* prohibits the unauthorized deposition of deleterious substance(s) into waters frequented by fish. BC working and approved Water Quality Guidelines (BC Ministry of Environment and Climate Change Strategy 2021, 2023) Canadian Council of Ministers of the Environment water quality guidelines for the protection of aquatic life (2022)	16 to 43 mapped watercourse crossings are present in the route corridors, depending on the route option. Surface water quality has the potential to be impacted in these watercourses within the uTLAA through sedimentation and dust fall during the construction phase and increases in temperature associated with riparian clearing during the construction and operation phase.	▪ Develop and implement erosion prevention and sediment control measures using industry standard management practices. ▪ Develop and implement measures for water and stormwater management. ▪ Implement dust control measures (e.g., application of water) during dry or dusty conditions.	No change to the characterization of the residual effects of the Project Residual effects of the Project to water quality with respect to land disturbance, erosion, changes in flow, and dust fall are anticipated to be low in magnitude, limited to the surface water LAA and the TLAA, short- to medium-term in duration, occur as multiple irregular events, and be reversible as vegetation is re-established after decommissioning.
Change in surface water quantity	Changes in surface water flow, runoff, and drainage patterns could occur within the TLAA through water withdrawals, reduction in watershed area, and changes to land cover	*Water Sustainability Act* Requirements and Best Management Practices for Making Changes In and About a Stream in British Columbia (Government of BC 2022)	16 to 43 mapped watercourse crossings are present in the route corridor. Surface water drainage has the potential to be impacted in these watercourses within the uTLAA during the construction phase. Water withdrawal may be required for dust suppression and/or other water requirements during the construction phase.		No change to the characterization of the residual effects of the Project The Project is anticipated to have low magnitude adverse residual effects on surface water quantity. The timing of these residual effects will be associated with the construction, operation, and decommissioning of the land-based infrastructure.
Vegetation and Wetlands					
Change in abundance of plant species of interest	No known occurrences of red- or blue-listed plant or lichen species within the TLAA outside of the Arctic daisy occurrence documented by Project surveys on Pearse Island. Arctic daisy has potential to occur in estuarine meadows on Mylor Peninsula and on the shoreline of Nass Bay. Botanical and cultural forest products would continue to be present underneath the transmission line (with the exception of trees, which would be removed for safe operation of the transmission line). Construction of the transmission line could disturb soil which could introduce and spread invasive plant species. There are no known occurrences of invasive species within the TLAA.	BC *Weed Control Act* and Regulation *Integrated Pest Management Act*	No known occurrences of red- or blue-listed plant or lichen species within the uTLAA. Overlaps estuarine meadows with potential to support Arctic daisy. Botanical and cultural forest products would continue to be present underneath the transmission line (with the exception of trees, which would be removed for safe operation of the transmission line.) Disturbance to soil could introduce and spread invasive plant species. No known occurrences of invasive plant species in the uTLAA.	▪ Complete a pre-construction survey of environmentally sensitive features, including plant species of interest within the transmission line footprint. ▪ Incorporate botanical and cultural forest products into reclamation planning. ▪ Implement industry standard management practices to reduce the introduction or spread of invasive plants and noxious weeds.	No change to the characterization of the residual effects of the Project Residual effects to abundance of plant species of interest are anticipated to be low to moderate in magnitude, limited to the vegetation and wetlands LAA, AEAA and TLAA, short- to long-term in duration, occur as multiple irregular events (i.e., vegetation maintenance activities during operation) and are reversible to irreversible as vegetation is re-established after construction and decommissioning.

Table F-5 – Assessment of Potential Effects to Valued Components in the updated Transmission Line Assessment Area

Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
Change in abundance or condition of ecological communities of interest	Decrease in the abundance or condition of ecological communities of conservation concern. Blue-listed communities are present throughout the TLAA (based on reconnaissance-level TEM). Red-listed ecological communities may occur on the east side of the TLAA in a floodplain on the landmass connecting Mylor Peninsula to the Coast Mountains. Transmission line may be able to avoid occurrences of shorter (shrub or herbaceous) ecological communities by stringing the line over them. Changes in forest structure within patches of very old forest on Mylor Peninsula.	Old growth deferral areas (**OGDA**s) identify areas of old forest that are priorities for deferral of logging activities, some of which are legally defined through the *Forest Act* and some of which are recommendations from a technical advisory panel to be considered for temporary or permanent deferral. *Water Sustainability Act* guides protection of watercourses, riparian ecosystems, and certain types of wetlands (under the definition of 'stream').	Approximately 8.7 to 23.3 ha of ecosystems with potential to support blue-listed communities present in the revised corridors (based on reconnaissance-level TEM, to be verified based on ecosystem attributes) Approximately 0 to 9.6 ha of ecosystems with potential to support red-listed communities present in the revised corridors (based on reconnaissance-level TEM, to be verified based on ecosystem attributes) Approximately 36.8 to 71.8 ha of old or very old forest (greater than 250-year-old stand age) in the revised corridors (based on VRI) Approximately 0.5 to 21.5 ha of OGDA in the revised corridors	▪ Complete a pre-construction survey of environmentally sensitive features, including ecological communities of conservation concern within the transmission line footprint.	No change to the characterization of the residual effects of the Project Residual effects to abundance of ecological communities of interest are anticipated to be low to moderate in magnitude, limited to the vegetation and wetlands LAA, AEAA, TLAA, short- to long-term in duration, occur as a single event and are partially reversible to irreversible as vegetation is re-established after decommissioning.
Change in wetlands	Changes in vegetation structure within forested wetlands and/or tall shrub wetland communities on Mylor Peninsula.	*Water Sustainability Act* guides protection of watercourses, riparian ecosystems, and certain types of wetlands (under the definition of 'stream').	Approximately 12.6 to 31.6 ha of wetlands within revised corridor(s) in which tree clearing may occur (based on reconnaissance-level TEM). Shrub and herbaceous wetlands may be avoided by planning tower placements.	▪ Develop and implement erosion prevention and sediment control measures using industry standard management practices. ▪ Complete a pre-construction survey of environmentally sensitive features, including wetlands within the transmission line footprint. ▪ Develop and implement a wetland compensation plan to address loss of wetland area and function.	No change to the characterization of the residual effects of the Project Residual effects wetlands are anticipated to be low to moderate in magnitude, limited to the vegetation and wetlands LAA, AEAA, and TLAA, short- to long-term in duration, occur as a single event and are partially reversible as vegetation is re-established after decommissioning.
Wildlife and Wildlife Habitat					
Change in habitat	Direct loss or alteration of habitat through clearing of vegetation. This includes clearing or alteration of forest, riparian habitat, wetlands, and intertidal shoreline communities. Direct loss or alteration of seafloor substrates that may alter foraging habitat or prey species abundance for some marine bird species. Sensory disturbance from construction activities resulting in indirect change in habitat.	The nests of certain species are protected year-round under the *Wildlife Act* (e.g., bald eagle, osprey, great blue heron) and/or the *Migratory Birds Convention Act* (e.g., pileated woodpecker and great blue heron). Ungulate Winter Ranges designated under the *Forest and Range Practices Act* include general wildlife measures related to forest removal and road development.	Direct change in habitat may occur during construction of the transmission line: ▪ Approximately 22 to 53 ha critical habitat polygons that may contain the biophysical attributes of marbled murrelet terrestrial critical habitat, depending on which corridor is selected. ▪ Approximately 37 to 72 ha of old or very old forest (greater than 250-year-old stand age) in the revised corridors (based on VRI). Replacement of old and very old forest with open, shrubby habitat may over time create new suitable habitat for some species (e.g., moose, common nighthawk).	▪ Avoid disturbance related to transmission line footprint preparation during the primary nesting period (i.e., April 11 to August 8): ◦ Where disturbance must occur during the primary nesting period a pre-disturbance nesting bird survey will be completed by a Qualified Professional (**QP**). ◦ A setback will be placed around active nests; the size of the buffer will be determined through consultation with a QP.	No change to the characterization of the residual effects of the Project Residual effects on change in habitat are anticipated to be low to high in magnitude, limited to the wildlife and wildlife habitat LAA, Open Water Assessment Area (**OWAA**) and TLAA, short- to long-term in duration, occur as a single event. Residual effects related to sensory disturbance are largely reversible when construction finishes, while direct effects from vegetation clearing are partially reversible as vegetation is re-established after decommissioning.

Table F-5 – Assessment of Potential Effects to Valued Components in the updated Transmission Line Assessment Area

Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
			▪ Up to 1 ha of mountain goat Ungulate Winter Range, depending on which corridor is selected. ▪ Approximately 13 to 32 ha of wetlands, depending on which corridor is selected. ▪ Removal of bald eagle nest trees depending on which corridor is selected. A temporary indirect change in habitat related to sensory disturbance may occur during construction of the transmission line for terrestrial wildlife and marine birds.	▪ Nests of bird species listed in a table on Schedule 1 of the Migratory Birds Regulations 2022 are protected year-round from removal during the waiting period ascribed to that species. If such a nest is detected: ◦ An 'active period' setback will be placed around the nest while it is active and a smaller 'inactive period' setback will be placed around the nest while inactive to facilitate year-round protection. The size of the setback will be determined through consultation with a QP and in accordance with ECCC's guidelines to avoid harm to migratory birds. ◦ If removal of the nest is necessary, it may be removed without a permit if all conditions of Migratory Birds Regulations 5.2(c) are met, including providing written notice to the Minister of ECCC (via the Abandoned Nest Registry) as many months in advance as required for that species and providing the nest is not used for nesting by a migratory bird for that period. In certain limited situations a damage or danger permit may be available to allow removal of the nest following a permit application and approval. ▪ High-disturbance transmission line activities will be avoided within 300 m of active bald eagle nests during the breeding period (February 5 – August 31). If high-disturbance activities within 300 m of an active bald eagle nest cannot be avoided, a QP will be consulted to develop appropriate mitigation. ▪ Mitigation for amphibians will be implemented for construction works occurring in or within 30 m of wetlands during the amphibian breeding and dispersal period (approximately mid-April to late-September). A QP will be consulted on the mitigation.	
Change in movement	Sensory disturbance from construction and decommissioning activities and forest gaps may alter movement patterns for some species.	Ungulate Winter Ranges designated under the *Forest and Range Practices Act* include general wildlife measures related to forest removal and road development.	A temporary change in movement related to sensory disturbance may occur during construction of the transmission line. During operation the transmission line is not expected to present a barrier to wildlife movement.		No change to the characterization of residual effects of the Project Residual effects on change in movement are anticipated to be low to high in magnitude, limited to the wildlife and wildlife habitat LAA, OWAA and TLAA, short- to long-term in duration, occur as a single event and are partially reversible when sensory disturbance ceases following completion of construction.
Change in mortality risk	Vegetation clearing during nesting or denning periods, human-wildlife conflict, increased hunter and trapper access, changes in predator access, collisions with overhead powerlines, and vehicle collisions have potential to increase mortality risk for wildlife. Potential for marbled murrelets to nest within the TLAA, which overlaps with Geographic Location Polygons that may contain critical habitat for marbled murrelet.	In combination the *Wildlife Act*, *Migratory Birds Convention Act*, and Migratory Birds Regulations prohibit the destruction or disturbance of most active bird nests. The nests of certain species are protected year-round under the *Wildlife Act* (e.g., bald eagle, osprey, great blue heron) and/or the Migratory Birds Regulations (e.g., pileated woodpecker and great blue heron).	Residual effects on change in mortality risk will depend on species and transmission line phase. The risk of accidental mortality related to vegetation clearing is greatest for nesting birds, denning bats, and breeding amphibians, and will primarily occur during construction. Mortality risk related to increased hunter and trapper access is greatest for ungulates and furbearers (e.g., marten, wolverine, beaver) and will primarily occur during operation. Collisions with overhead powerlines are most likely to occur during operation and the risk is greatest for large, low-maneuverability birds (e.g., raptors, waterfowl).		No change to the characterization of residual effects of the Project Residual effects on change in mortality risk are anticipated to be low to moderate in magnitude, limited to the wildlife and wildlife habitat LAA and TLAA, short- to long-term in duration, occur as single, multiple irregular, or continuous events. Mortality risk related to vegetation clearing is partially reversible following completion of construction. Mortality risk related to hunter and trapper access and collisions with overhead powerlines is reversible following decommissioning when access roads and the transmission line right-of-way are deactivated and transmission lines are removed.

Table F-5 – Assessment of Potential Effects to Valued Components in the updated Transmission Line Assessment Area

Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
				▪ A preconstruction survey for wildlife habitat features (i.e., dens, mineral licks, bat roosts, pileated woodpecker cavities, raptor nests) will be completed by a QP prior to the start of vegetation clearing, if those activities will occur during the active period for the habitat feature. Surveys for band-tailed pigeon mineral sites will be completed during the potential active period (i.e., during the breeding season and/or fall migration) prior to vegetation clearing. ▪ Mark setbacks around identified active wildlife habitat features prior to site preparation activities. The size of any setback will be determined through consultation with a QP. ▪ Develop and provide wildlife awareness training to on-site personnel and contractors ▪ Develop and implement waste management measures to manage waste including hazardous and construction waste, recyclables, and wildlife attractants. ▪ Overhead transmission lines may be marked using line markers to reduce the risk of bird collisions with transmission lines (APLIC 2012) in areas where a risk of collision is identified, and where it is feasible to do so.	
Freshwater Fish and Fish Habitat					
Change in phytoplankton density	Not applicable to TLAA; no further acidification or eutrophication assessment needed.	Not applicable	Not applicable to uTLAA, no further acidification or eutrophication assessment needed	Not applicable	No change to the characterization of residual effects of the Project No residual effects anticipated in association with the transmission line. Effects of the Project are anticipated to be low magnitude, limited to the acidification and eutrophication study area (AESA), long term, and reversible.

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Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
Change in fish habitat	Potential increases in sedimentation in watercourses during construction and decommissioning may impact instream fish habitat. Riparian clearing during construction and operation.	*Fisheries Act* DFO's Standards and Codes of Practice (DFO 2024b) DFO's Fish and Fish Habitat Protection Policy Statement (DFO 2019) in consideration of the 'avoid, mitigate, offset' hierarchy *Water Sustainability Act* and regulations Requirements and Best Management Practices for Making Changes In and About a Stream in British Columbia (Government of BC 2022) Terms and Conditions for *Water Sustainability Act* Changes In and About a Stream as specified by Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) Habitat Officers, Skeena Region (BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development 2018)	16 to 43 mapped watercourse crossings are present in the route corridors. These watercourses may have increased sedimentation within the uTLAA during construction and decommissioning, which may impact fish habitat. Riparian clearing will be required in the route corridor at these watercourse crossings during construction and operation.	▪ Develop and implement erosion prevention and sediment control measures using industry standard management practices. ▪ Planning and design will avoid or reduce impacts to identified watercourses, wetlands and riparian areas within the proposed transmission line development area to the extent possible ▪ Use clear span bridges or open-bottom arch culverts to cross streams with confirmed fish presence. ▪ During construction, develop and implement spill prevention and response measures including appropriate equipment refueling and servicing procedures. ▪ Instream works will be conducted in isolation of flowing water. ▪ As part of Request for Review process, develop schedule for construction activities that considers windows of least risk. ▪ Conduct fish salvage, as required, prior to specific activities with high potential for crushing and burial or during in-water work requiring isolation and dewatering. ▪ Water intakes used during construction will be screened in accordance with the Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater (DFO 2020) or the final code of practice, if available.	No change to the characterization of residual effects of the Project Residual effects of the Project to fish habitat are anticipated to be low to moderate in magnitude, limited to the freshwater fish and fish habitat LAA and TLAA, long-term in duration, occur as multiple irregular events, and be reversible as vegetation is re-established after decommissioning.
Change in fish health, growth, survival, or reproduction	Negligible changes to fish health, growth, survival, and reproduction. No instream work would likely be required for transmission line construction, as structures are anticipated to span watercourses. Instream work may be required for vehicle crossings during construction; however, implementation of mitigation measures such as using clear span structures for watercourse crossings, completing instream works within reduced risk timing windows and conducting fish salvages prior to instream works would limit potential changes in fish health, growth, survival, and reproduction.	*Fisheries Act* DFO's Standards and Codes of Practice (DFO 2024b) DFO's Fish and Fish Habitat Protection Policy Statement (DFO 2019) in consideration of the 'avoid, mitigate, offset' hierarchy Requirements and Best Management Practices for Making Changes In and About a Stream in British Columbia (Government of BC 2022) Terms and Conditions for *Water Sustainability Act* Changes In and About a Stream as specified by Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) Habitat Officers, Skeena Region (BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development 2018)	16 to 43 mapped watercourse crossings are present in the route corridor, however, negligible changes to fish health, growth, survival, and reproduction are anticipated. No instream work would likely be required for transmission line construction, as structures are anticipated to span watercourses. Instream work may be required for vehicle crossings during construction; however, implementation of mitigation measures such as using clear span structures for watercourse crossings, completing instream works within reduced risk timing windows and conducting fish salvages prior to instream works would limit potential changes in fish health, growth, survival, and reproduction.		No change to the characterization of residual effects of the Project Effects associated with the transmission line are anticipated to be negligible. Residual effects of the Project to fish health, growth, survival, or reproduction are anticipated to be low magnitude, limited in extent to the LAA, short- to long-term in duration, and reversible.

Table F-5 – Assessment of Potential Effects to Valued Components in the updated Transmission Line Assessment Area

Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
Marine Resources					
Change in water and sediment quality	Potential increases in suspended sediments during construction and decommissioning phases. Potential disturbance of historic contamination in the seabed during construction and decommissioning phases. Increased total suspended solids as a result of Site runoff after marine riparian clearing during construction.	BC Approved and Working Water Quality Guidelines for the Protection of Marine Aquatic Life (WQG-MAL; BC ENV 2021a, b) BC Approved and Working Sediment Quality Guidelines for the Protection of Marine Aquatic Life (SQG-MAL; BC ENV 2021a, b) CCME WQG-MAL (CCME 2022)	Approximately 15 to 23 km of the transmission line will either be placed on, or buried under, the seabed. This will result in increased suspended sediments during the construction and decommissioning phases.	▪ During construction, develop and implement spill prevention and response measures including appropriate equipment refueling and servicing procedures.	No change to the characterization of residual effects of the Project Residual effects of the Project to water and sediment quality are expected to be low to moderate in magnitude, limited to the marine terminal (MT)-LAA, marine shipping (MS)-LAA and marine portion of the TLAA, be short- to medium-term in duration and reversible.
Change in habitat	Marine riparian clearing (construction) and maintenance of a right-of-way (operation). Temporary or permanent alteration to fish habitat during the construction and decommissioning phases.	*Fisheries Act* (Section 35) DFO's Standards and Codes of Practice (DFO 2024b) DFO's Fish and Fish Habitat Protection Policy Statement (DFO 2019) in consideration of the 'avoid, mitigate, offset' hierarchy. Offset harmful alterations, disruption and/or destruction of fish habitat through habitat creation, restoration, or enhancement measures, if required.	Approximately 15 to 23 km of the transmission line will either be placed on, or buried under, the seabed resulting in a temporary (areas of burial) or permanent alteration (surface lay or in areas with armouring).	▪ Complete field surveys to better characterize fish habitat in intertidal and shallow subtidal zones that are potentially impacted by the transmission line. ▪ Offset harmful alterations, disruption and/or destruction of fish habitat through habitat creation, restoration, or enhancement measures, if required. The offset plan will be developed in collaboration with NLG and DFO. Consultation with other Indigenous nations on the offset plan is expected. ▪ Complete a marine survey to confirm the appropriateness of the selected route and to limit impacts to environmentally sensitive marine areas (e.g., sponge reefs, coral gardens).	No change to the characterization of residual effects of the Project Residual effects of the Project to fish habitat are expected to be low to moderate magnitude, extend to the Marine Terminal Local Assessment Area (**MT-LAA**), Marine Shipping Local Assessment Area (**MS-LAA**) and marine portion of the TLAA, be medium- to long-term in duration and reversible to irreversible. No permanent habitat destruction is anticipated as a result of transmission line installation.

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Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
Change in behaviour caused by sensory disturbance	Potential disturbance to marine mammals as a result of underwater noise during construction and decommissioning phases. Potential disturbance to marine organisms as a result of EMF field disturbance.	*Fisheries Act* (Marine Mammal Regulations). section 7 of the Marine Mammal Regulations prohibits the disturbance of marine mammals. Construction-related vessels will adhere to the marine mammal minimum approach distance provisions in the Marine Mammal Regulations under the *Fisheries Act*.	No changes	▪ None anticipated at this time.	No change to the characterization of residual effects of the Project Residual effects of the Project are expected to range from no measurable change to moderate, extend to the marine resources Regional Assessment Area (**RAA**), OWAA and marine portion of the uTLAA, be short- to medium-term in duration, and be reversible. Residual effects to marine mammals as a result of underwater noise are expected to be temporary (construction and decommissioning vessels) and reversible. Behavioural disturbance as a result of EMF during operation is not expected to displace or prevent marine fish or mammals from utilizing the waters surrounding the transmission line.
Change in injury and mortality risk	Increased potential for vessel strikes on marine mammals during the construction, operation, and decommissioning phases. Potential for crushing and burial of marine fish and invertebrates during the construction and decommissioning phases.	*Fisheries Act* (section 34) Construction-related vessels will adhere to the marine mammal minimum approach distance provisions in the Marine Mammal Regulations under the *Fisheries Act*. Section 32 of SARA prohibits the killing, harming, possession/collection, and harassment of any species listed on Schedule 1 (threatened, endangered, or extirpated).	No changes	▪ As part of Request for Review process, develop schedule for construction activities that considers windows of least risk ▪ Conduct marine fish and invertebrate salvage, as required, prior to specific activities with high potential for crushing and burial or during in-water work requiring isolation and dewatering.	No change to the characterization of residual effects of the Project Residual effects of the Project are expected to range from no measurable change to moderate, extend to the MT-LAA, MS-LAA, OWAA and marine portion of the TLAA, be short- to medium-term in duration, and be reversible to irreversible. Some burial and crushing of marine organisms is anticipated as a result of construction and decommissioning activities. This will primarily be limited to sessile (e.g., barnacles, mussels) and infaunal (e.g., clams, worms) invertebrates. No marine mammal injury or mortality is anticipated.

Table F-5 – Assessment of Potential Effects to Valued Components in the updated Transmission Line Assessment Area

Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
Marine Use					
Change in marine navigation	Transmission line activities may interfere with marine navigation as in-water activities may necessitate commercial and recreational vessels using marine areas of the TLAA to adjust their navigational routes.	*Canadian Navigable Waters Act* protects the public right to navigation.	Construction of the transmission line involves 15 to 23 km of marine crossing. During construction and decommissioning of the submarine transmission line, the installation and decommissioning of submarine cable would temporarily disrupt marine navigation due to the presence of cable-laying and other related vessels. Maintenance and repairs to submarine cable during the operation phase are not expected to cause any additional interference with marine navigation.	▪ In consultation with the Canadian Coast Guard (**CCG**), identify and install appropriate aids to navigation (**AtoN**) ▪ Establish methods for regular communication of construction activities with marine users.	No change to the characterization of residual effects of the Project Residual effects of the Project to marine navigation are anticipated to be low in magnitude, limited to the marine use LAA, OWAA and TLAA, medium-term in duration, occur in multiple irregular events, and be reversible after decommissioning. Effects would be evenly distributed to affected subpopulations.
Change in marine fisheries and other uses	An increase in in-water activities may affect where and when Indigenous, commercial, and recreational fishers and users utilize the waters within the TLAA.	*Canadian Navigable Waters Act* protects the public right to navigation. *Fisheries Act* provides the regulatory framework for the management of marine and inland fisheries and the protection of fish and fish habitat, including preventing pollution. The Nisga'a Treaty provides the Nisga'a Nation with constitutional certainty in respect of the Aboriginal people's section 35 right to self-government and recognizes Nisga'a Lands and allows for joint economic initiatives in the development of the Nisga'a Nation's natural resources; constitutionally protected rights and legislative jurisdiction that can facilitate the construction and operation of projects on or near Nisga'a Lands. Indigenous nations' Marine Use Plans (Land Use Plan for Nisga'a Lands, Metlakatla Draft Marine Use Plan, Lax Kw'alaams Marine Resource Government and Management Plan, Kitsumkalum First Nation Marine Use Plan, Kitselas First Nation Land Use Plan, Gitxaała Marine Use Plan, Gitga'at Marine Use Plan, Haida Gwaii Marine Plan)	The construction of the transmission line involves 15 to 23 km of marine crossing. Installation and decommissioning of the submarine cable would temporarily disrupt marine users due to the presence of cable-laying and other related vessels. Potential effects of the submarine transmission line on species of Indigenous, commercial, or recreational fishing and recreational value (e.g., changes to habitat and mortality) are addressed in Section 7.09 Marine Resources. Maintenance and repairs to submarine cable during the operation phase are not expected to cause any additional interference with marine users. In addition, while the submarine cable is expected to settle into marine sediments or be buried, and there are no restrictions associated with fishing at/near the installed cable, it is expected that the submarine cable would be marked on marine charts and fishing may be avoided at/near the cable. This would result in an ongoing change in access for Indigenous, commercial and potentially recreational fishing.	▪ In consultation with the CCG, identify and install appropriate AtoN. ▪ Establish methods for regular communication of construction activities with marine users.	No change to the characterization of residual effects of the Project Residual effects to marine fisheries and other uses are anticipated to be low to medium in magnitude, limited to the marine use LAA, OWAA and TLAA, medium- to long-term in duration, occur in multiple irregular events, and be reversible after decommissioning. Effects would be disproportionately distributed to affected subpopulations.

Table F-5 – Assessment of Potential Effects to Valued Components in the updated Transmission Line Assessment Area

Potential Effects	Residual Effects to the VC within the TLAA as assessed in the Application	Legislation, Policy or Best Management Practices that Mitigate or Partially Mitigate Impacts	Updated Residual Effects to the VC associated with the Transmission Line within the uTLAA	Transmission Line-Specific Mitigation Measures and Commitments	Changes to Characterization of Residual Effects of the Project (including the transmission line in the uTLAA)
Change in aesthetic conditions	Increased in-water activities may affect aesthetic conditions (i.e., visual quality, ambient lighting) within the TLAA.	Not applicable	Portions of the terrestrial transmission line may be visible from Gingolx or to marine users. Depending on the final routing, there may be no to low magnitude effects to aesthetic conditions.	▪ Planning and design will avoid or reduce impacts to identified watercourses, wetlands, and riparian areas within the proposed transmission line development area to the extent possible.	No change to the characterization of residual effects of the Project. Effects of the Project are anticipated to be low magnitude, limited to the RAA and OWAA and TLAA, medium term in duration, and reversible after decommissioning. Effects would be disproportionately distributed to affected subpopulations.
Archaeological and Heritage Resources					
Loss of information about or alteration to Site contents or context	The transmission line has the potential to interact with Archaeological and Heritage Resources and could result in the loss of information about or alteration to site contents or context. With the implementation of mitigation measures to offset the loss of information resulting from their alteration, no adverse residual effects are anticipated.	*Land Act* - Provincial legislation governing the management of fossils, including the Fossil Management Framework and Policy *Heritage Conservation Act* -Provincial legislation governing the protection and conservation of heritage objects and sites The Nisga'a Treaty - A negotiated treaty between Nisga'a Nation, the Government of BC, and the Government of Canada, which came into force in 2000.	The construction of the transmission line will involve ground disturbing and tree clearing activities that could disturb or destroy archaeological and heritage resources.	▪ Planning and design will avoid identified archaeological and heritage sites to the extent possible. In cases where avoidance is not feasible or practical, mitigation will involve systematic data recovery (**SDR**). ▪ A chance find procedure will be established for activities associated with the transmission line, and will identify mitigation to be followed if archaeological, historical, or paleontological materials are unexpectedly discovered during construction activities.	No change to the characterization of residual effects of the Project After implementation of mitigation measures and engagement with Nisga'a Nation and other affected Indigenous groups, no adverse residual effects on Archaeological and Heritage Resources are anticipated as a result of the Project. The chance of encountering palaeontological resources during the Project is considered very low.

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F.7.2 Cumulative Effects

As noted in Table F-5, no changes to the characterization of residual effects of the Project are anticipated for any of the VCs as a result of the supplemental assessment of effects of the transmission line in the uTLAA. The Application conservatively characterized the Project's contributions to cumulative effects, and no changes to the assessment of cumulative effects are anticipated based on refinement of the proposed routing for the transmission line within the uTLAA. As such, no additional assessment of cumulative effects has been completed as part of this supplement.

F.8 Indigenous Interests

As described in Sections 11.0 to 15.0, 17.0 and 19.0 of the Application, the TLAA (and therefore the uTLAA) overlaps with the traditional territories and/or areas of interest of the following seven Indigenous nations: Nisga'a Nation, Lax Kw'alaams Band, Metlakatla First Nation, Kitselas First Nation, Kitsumkalum First Nation, and Métis Nation BC. The uTLAA overlaps with Gitga'at First Nation's Traditional Use and Occupancy Study Area (Section 17.0). The Gitxaała Nation traditional territory is not overlapped by the uTLAA however, the uTLAA is near the portion of the Gitxaała Nation's traditional territory on the Nass River and intersects the marine areas used by the Gitxaała Nation to access this portion of its traditional territory (Section 16.0). The uTLAA does not overlap with Haida Territories as identified by Haida Nation (Section 18.0).

Detailed descriptions of background and existing conditions specific to each Indigenous nation relative to the TLAA are provided in Sections 11.0 to 17.0 and 19.0 of the Application. Portions of the terrestrial and marine areas of the uTLAA are understood to overlap with travel routes permitting access to temporary and seasonal camps, marine and terrestrial resource harvesting and/or processing sites, culturally important species habitats, sacred places and heritage sites, teaching sites (e.g., knowledge transmission), and places connected to the health, well-being, livelihood, and social and economic conditions of one or more of these Indigenous nations. Table F-6 lists the key transmission line related concerns received through engagement with the Indigenous nations.

Table F-6 – Summary of Key Information, Indigenous Knowledge and Concerns for the Transmission Line Related to Indigenous Interests

Indigenous Nation	Key Information and Concerns	Influence on the Assessment
Nisga'a Nation	No information, comments or concerns specific to the transmission line were received through engagement with Nisga'a Nation.	-
Lax Kw'aalams Band	Lax Kw'aalams Band expressed concerns regarding: ▪ The qualitative, generalized assessment of impacts on marine resources within the TLAA ▪ The separation of effects on marine use resulting from the construction, operation and decommissioning of the transmission line within the TLAA from the assessment of other Project components and activities ▪ Effects on forested lands that will be cleared for the transmission line right of way ▪ Effects on vegetation (e.g., arctic daisy and pine mushrooms) and wetlands, freshwater fish and fish habitat, and wildlife and wildlife habitat within the TLAA ▪ Indirect effects (other than shading) to adjacent habitat	Section F.8.1 of this supplement includes the assessment of the potential effects and cumulative effects of the transmission line on Lax Kw'alaams Band interests relative to the uTLAA described in Section F.2.1. The results of the assessments of the potential effects on marine resources, marine use, vegetation and wetlands, and other applicable VCs described in Section F.7, Table F-4 to Table F-5, have informed the assessment of potential effects on Lax Kw'alaams Band interests.
Metlakatla First Nation	Metlakatla First Nation expressed concerns regarding: ▪ The qualitative, generalized assessment of impacts on marine resources within the TLAA ▪ The separation of effects on marine use resulting from the construction, operation and decommissioning of the transmission line within the TLAA from the assessment of other project components and activities ▪ Effects on forested lands that will be cleared for the transmission line right of way ▪ Effects on vegetation (e.g., Arctic daisy and pine mushrooms) and wetlands, freshwater fish and fish habitat, and wildlife and wildlife habitat within the TLAA ▪ Indirect effects (other than shading) to adjacent habitat	Section F.8.1 of this supplement includes the assessment of the potential effects and cumulative effects of the transmission line on Metlakatla First Nation interests relative to the uTLAA described in Section F.2.1. The results of the assessments of the potential effects on marine resources, marine use, vegetation and wetlands, and other applicable VCs described in Section F.7, Table F-4 to Table F-5, have informed the assessment of potential effects on Metlakatla First Nation interests.

Table F-6 – Summary of Key Information, Indigenous Knowledge and Concerns for the Transmission Line Related to Indigenous Interests

Indigenous Nation	Key Information and Concerns	Influence on the Assessment
Kitsumkalum First Nation	Kitsumkalum First Nation expressed concerns regarding: ▪ Increased access to recreational users due to construction of the transmission line and other projects (PRGT and hydro projects) through Kitsumkalum territory and Nisga'a Lands ▪ Cumulative impacts within the region of a new power line	Section F.8.1 of this supplement includes the assessment of the potential effects and cumulative effects of the transmission line on Kitsumkalum First Nation interests relative to the uTLAA described in Section F.2.1.
Kitselas First Nation	Kitselas First Nation expressed concerns regarding: ▪ That no attempt was made to determine potential residual effects for the transmission line and that Kitselas may not have an opportunity to review potential effects of the transmission line on the level of assessment that is being done for the Project	Section F.8.1 of this supplement includes additional assessment of the potential effects and cumulative effects of the transmission line on Kitselas First Nation interests relative to the uTLAA described in Section F.2.1. As this supplement is part of the Application (Appendix F) all Nations will have an opportunity to review and provide comment on the assessment relative to the uTLAA.
Gitxaała Nation	Gitxaała Nation expressed concern regarding: ▪ The transmission line and other third-party infrastructure and a lack of associated communication, information and assessment	Section F.8.1 of this supplement includes additional assessment of the potential effects and cumulative effects of the transmission line on Gitxaała Nation interests relative to the uTLAA described in Section F.2.1.
Gitga'at First Nation	Gitga'at First Nation expressed concern regarding: ▪ The lack of detail in the potential transmission line scenarios of how these scenarios were valuated and how potential effects were considered	Section F.8.1 of this memorandum includes additional assessment of the potential effects and cumulative effects of the transmission line on Gitga'at First Nation interests relative to the uTLAA described in Section F.2.1.
Haida Nation	No information, comments or concerns specific to the transmission line were received through engagement with Haida Nation	-
Métis Nation BC	No information, comments or concerns specific to the transmission line were received through engagement with Métis Nation BC.	-

The Nation-specific Indigenous interests for the assessments in Sections 11.0 to 17.0, and 19.0 of the Application were identified through engagement with each Nation and review of concerns about the Project and transmission line raised by the Nations (Table 6). Additional guidance from current federal and provincial acts, impact assessment policies, and best practices also informed the identification of Indigenous interests. For this supplement, the list of potential effects specific to each Nation have been combined into four key interests as follows:

- Changes to Indigenous marine and terrestrial harvest and consumption
- Changes to Indigenous governance, health and well-being, social and economic conditions
- Changes to Indigenous sacred places and heritage sites
- Changes to Indigenous access and travel

This supplement uses a conservative approach that recognizes that an absence of information regarding Nation-specific interests does not necessarily represent an absence of the exercise or practice of an Indigenous right. As such, this assessment assumes that Indigenous interests have the potential to occur on accessible lands and waters within the uTLAA that overlap with the traditional territories and/or areas of interest of the Indigenous nations.

F.8.1 Project Effects on Indigenous Interests

As described in Section F.7, Table F-4 shows which VCs are carried forward for further assessment of potential effects of the transmission line within the uTLAA and provides the rationale for VCs that are not carried forward.

Table F-5 presents the residual effects of the transmission line as per the Application, identifies legislation, policy or best management practices and Project-specific mitigation measures to manage potential effects, and summarizes any changes to the anticipated residual effects of the transmission line within the uTLAA (quantitatively where feasible). This assessment conservatively assumes that after the application of mitigation measures identified in Section F.7.1, the residual effects described in Section F.7 may result in the same or similar potential effects on Indigenous interests (through the same pathways) as those identified in Sections 11.0 to 17.0 and 19.0 of the Application.

Residual effects to Surface Water (e.g., quantity; chemical and physical composition), Freshwater Fish and Fish Habitat (e.g., habitat; fish health, growth, survival, or reproduction), Vegetation and Wetlands (e.g., plant species of interest; abundance or condition of ecological communities of interest; wetlands), Wildlife and Wildlife Habitat (e.g., habitat; movement; mortality risk), Marine Resources (e.g., behaviour; injury or mortality risk), Marine Use (e.g., navigation; fisheries and other uses) and Archaeological and Heritage Resources (e.g., loss of information; alteration to site context) of the transmission line within the uTLAA are consistent with those identified in the Application (i.e., no changes identified through the assessment completed for this supplement) (Table F-5).

Although no changes to the characterization of residual effects are identified for the applicable VCs considered in this supplement, the Proponents understand that the Indigenous nations may also experience loss or alteration of access to preferred harvesting areas and / or sacred places and heritage sites if present within the uTLAA, alteration of necessary conditions, change in the quality and quantity (real or perceived) of culturally important species and country foods, alteration of management principles and ability to make decisions regarding land and marine use, and alteration of community practices tied to identity, community cohesion, and cultural transference opportunities within areas of their traditional territories and/or areas of interest overlapped by the uTLAA.

A summary of mitigation measures to avoid or limit adverse residual effects of the transmission line construction on the Indigenous interests, and the associated environmental resources and conditions and social and economic conditions that support the exercise of Indigenous rights, are described in Section F.7.1 (Table F-5). Development of a measure consistent with Mitigation IN-1 described in Sections 11.0 to 17.0, 19.0 and Appendix A is predicted to further avoid or reduce residual effects on Indigenous interests from the transmission line within the uTLAA (e.g., continue to work with the Indigenous nations to understand how the Project may affect Treaty rights and/or Indigenous interests, and continue to engage with Indigenous nations to discuss the Project and its effects).

With the implementation of mitigation measures, residual effects on Indigenous interests during all Project phases are anticipated to be low to moderate in magnitude within portions of the uTLAA that overlap with the territories and/or areas of interest of the Indigenous nations. This includes timing considerations due to the seasonal use of camps, sacred places and heritage sites, the seasonal movements of migratory species, and the seasonal availability of harvested species and associated activities (e.g., hunting, gathering, fishing). Residual effects are short-term during the construction and decommissioning phases and long-term during the operation phase, lasting for longer than one generation (25 years). Residual effects will occur as multiple irregular events during the construction and decommissioning phases and multiple regular events during the operation phase. Residual effects are considered partially reversible during all transmission line phases (e.g., vegetation is re-established after decommissioning; mortality risk related to hunter and trapper access and collisions with overhead powerlines is reversible following decommissioning when access roads and the transmission line right of way are deactivated, and transmission lines are removed).

Potential adverse residual effects on Indigenous interests from the Project, including the transmission line within the uTLAA, could act cumulatively with similar effects from other past, present, and likely projects or activities in the region. Cumulative effects on Indigenous interests could result through the same pathways identified in Sections 11.0 to 17.0, and 19.0 of the Application. The Proponents are of the view that legislation, best practices, and guidelines applicable to limiting cumulative effects within the region, as well as commitments to specific mitigation measures (such as those provided in Table F-5) in relation to the transmission line within the uTLAA, will be tailored to suit environmental concerns associated with the route selected and equipment to be used based on the final design. It is expected that the same will be required for other future projects and activities.

The Proponents will continue to work with the Indigenous nations to develop a shared understanding of how the transmission line may affect their interests and will continue to engage with the Indigenous nations to discuss the transmission line and its effects, understand concerns that may arise and respond to those concerns.

F.9 Other Matters under S. 25 of the EAA

This section provides consideration of the following matters carried forward in Table F-3:

- Risks and uncertainties
- Malfunctions and accidents
- Effects on current and future generations
- Greenhouse gas emissions.

F.9.1 Risks and Uncertainties

The Application characterized risks and uncertainties associated with each potential effect for each VC, as required by the AIR. During review of the Application, members of the TAC expressed discomfort with the level of risk and uncertainty resulting from the size of the TLAA and lack of a prescribed route for the transmission line. The purpose of this supplement is to provide additional confidence based on refinement of the effects assessment and development of mitigation measures specific to the transmission line, to address outstanding uncertainties identified by the TAC regarding the TLAA approach in the Application. The TAC identified uncertainties within the TLAA due to the level of baseline information and qualitative approaches to the effects assessments for the following VCs:

- Surface Water
- Vegetation and Wetlands
- Wildlife and Wildlife Habitat
- Freshwater Fish and Fish Habitat
- Marine Resources
- Marine Use
- Archaeological and Heritage Resources

A summary of the potential risks and remaining uncertainties following the implementation of mitigation, as well as a recommended approach to further reduce these uncertainties is provided in Table F-8, following the same methods for defining risk and uncertainty as used in the Application. A table titled "Characterization of Residual Effects" is provided in each of the VC Sections of the Application (Section 7.02 to 7.15) outlining how risk and uncertainty are categorized for each VC. Risk is generally evaluated based on the interaction between the likelihood and consequence of an effect as shown in the risk rating Table F-7. In general, uncertainty is assessed by evaluating the level of confidence in data and methods, and the potential effectiveness of mitigation measures.

Table F-7 – Characterization of Risk

		Consequence		
		Major	**Moderate**	**Minor**
Likelihood	**High (>80% chance)**	High	Moderate	Low
	Medium (40-80% chance)	High	Moderate	Low
	Low (<40% chance)	Moderate	Low	Low

As summarized in Table F-8, further measures to reduce uncertainty have not been deemed necessary as there is a sufficiently low degree of uncertainty.

Table F-8 – Potential Risks, Uncertainties and Potential Measures to Reduce Uncertainty

VC	Potential Effects	uTLAA Risk Assessment[1]	uTLAA Uncertainty Assessment[1]	Potential Measures to Reduce Uncertainty
Surface Water	Change in the chemical and physical composition of surface waters	Low	Low	Uncertainty is expected to be sufficiently low following the implementation of mitigation measures
	Change in surface water quantity	Low	Low	
Vegetation and Wetlands	Change in abundance of plant species of interest	Low to Moderate	Low	Uncertainty is expected to be sufficiently low following the implementation of mitigation measures, including commitments for pre-construction vegetation and wetlands surveys
	Change in abundance or condition of ecological communities of interest	Low to Moderate	Low	
	Change in wetlands	Low	Low	
Wildlife and Wildlife Habitat	Change in Habitat	Low to Moderate	Low	Uncertainty is expected to be sufficiently low following the implementation of mitigation measures, including commitments to pre-construction wildlife surveys
	Change in Movement	Moderate	Low	
	Change in Mortality Risk	Low to Moderate	Low	
Freshwater Fish and Fish Habitat	Change in fish habitat	Low	Low	Uncertainty is expected to be sufficiently low following the implementation of mitigation measures and pre-construction freshwater fish and fish habitat surveys
	Change in fish health, growth, survival, or reproduction	Low	Low	

Table F-8 – Potential Risks, Uncertainties and Potential Measures to Reduce Uncertainty

VC	Potential Effects	uTLAA Risk Assessment[1]	uTLAA Uncertainty Assessment[1]	Potential Measures to Reduce Uncertainty
Marine Resources	Change in water and sediment quality	Low to Moderate	Moderate	The level of uncertainty is expected to decrease once marine surveys have been completed to determine seafloor composition and inform final routing and trenching methods
	Change in habitat	Low	Low to Moderate	
	Change in behaviour caused by sensory disturbance	Low to Moderate	Low to Moderate	
	Change in injury and mortality risk	Low to Moderate	Low to Moderate	
Marine Use	Change in marine navigation	Low to Moderate	Low	Uncertainty is expected to be sufficiently low following the implementation of mitigation measures
	Change in marine fisheries and other uses	Low to Moderate	Moderate	The level of uncertainty is expected to decrease once marine surveys have been completed to determine seafloor composition and inform final routing
Archaeological and Heritage Resources	Loss of information about or alteration to Site contents or context	Low	Low	Uncertainty is expected to be sufficiently low following the implementation of mitigation measures and pre-construction archaeological surveys.

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F.9.2 Malfunction and Accidents

As noted in the Notice of Substitution Approval under the *Impact Assessment Act* (IAAC 2023), the assessment of potential effects of malfunctions or accidents must include the transmission line associated with the Project. Section 9.0 of the Application provides an assessment of malfunctions and accidents associated with the Project, for the seven scenarios summarized in Table F-9 of this supplement. In particular, Section 9.7 of the Application (Emergency LNG Production Unit Shutdown, Including Flaring) includes consideration of potential for a malfunction of the transmission line to result in a full or partial shutdown of LNG production, however the remaining scenarios in the Application do not explicitly include consideration of the transmission line. Table 8 provides a summary of potential effects and mitigation measures for these malfunction and accident scenarios as they relate to the transmission line.

Table F-9 – Potential Malfunctions and Accidents Associated with the Transmission Line

Scenario	Potential Effects	Mitigation Measures
Terrestrial and marine spills of a hazardous material (e.g., diesel, gasoline, refrigerant, lubricants, oils; not including LNG)	There is risk of terrestrial and marine spills of a hazardous material during construction of the transmission line. Effects would be consistent with those assessed in Section 9.4 of the Application. A spill is considered possible and could last from hours to days. The consequences for VCs range from insignificant for air quality and marine use, to minor for vegetation and wetlands and wildlife and wildlife habitat. Potential moderate consequences are predicted for surface water, freshwater fish and fish habitat, and marine resources. In consideration of the likelihood and consequence, the overall risk to VCs from a terrestrial or marine spill of a hazardous material is rated low to moderate.	▪ During construction, develop and implement spill prevention and response measures including appropriate equipment refueling and servicing procedures.
Terrestrial and marine fires or explosions	There is risk of terrestrial or marine fires during construction of the transmission line, and risk of terrestrial fires during operation of the transmission line. A terrestrial or marine fire could result from ignition of combustible materials stored on land or on a marine vessel during construction. Effects to VCs from a terrestrial or marine fire during construction would be consistent with those assessed in Section 9.5 of the Application, given there would be onsite construction personnel present to provide early detection for any such event. The Application considered potential effects of terrestrial fires initiated onsite during operation, with an active workforce present. Given there is no on-site workforce associated with operation of the transmission line, there is potential for a terrestrial fire to spread on the landscape (i.e., if it is undetected for more than a short period of time). As such, the consequence of a terrestrial fire during operation of the transmission line could exceed the characterizations provided in the Application for vegetation and wetlands, wildlife and wildlife habitat, and freshwater fish and fish habitat. The likelihood of a terrestrial fire during operation of the transmission line is considered unlikely, but the consequence could be major depending on the extent of the resultant forest fire. The overall risk characterization would remain low to moderate. Also see Section 10.7 of the Application for an assessment of the effects of forest fires on the Project.	▪ Meet or exceed the minimum vertical and horizontal clearances and separations from wire to ground outlined in applicable standards[1] ▪ Implement measures for integrated vegetation management for control of vegetation in transmission rights-of-way in accordance with the applicable standards (e.g., Western Electricity Coordinating Council Standard FAC-003-1) ▪ As directed by a Qualified Professional, implement measures to manage the fuel load created from vegetation management activities to maintain transmission line corridors in a condition that would reduce the potential for fire to spread in accordance with the *Wildfire Act* and Regulation

Table F-9 – Potential Malfunctions and Accidents Associated with the Transmission Line

Scenario	Potential Effects	Mitigation Measures
Loss of containment of LNG or a hazardous material (e.g., condensate, refrigerants, amines) from the floating liquefied natural gas (**FLNG**) facilities, including the resultant embrittlement of infrastructure from exposure to extreme temperatures	This scenario is focused on the FLNG and not applicable to the transmission line	Not applicable
Emergency LNG production unit shutdown including flaring	A malfunction of the transmission line could result in a full or partial shutdown of LNG production. Effects of emergency LNG production shutdown due to a transmission line malfunction would be consistent with those assessed in Section 9.7 of the Application. An emergency LNG production unit shutdown including flaring is considered possible and would occur as a single, temporary event (i.e., minutes to hours). The consequences for VCs range from insignificant for acoustic environment, to minor for air quality, greenhouse gases, and wildlife and wildlife habitat. In consideration of the likelihood and consequence, the overall risk to VCs from an emergency LNG production shutdown due to a transmission line malfunction is rated low to moderate.	▪ No additional mitigation measures required beyond those presented in the Application
Carrier or vessel near-miss incidents, grounding, collisions or allisions (including any resultant loss of propulsion fuel)	There is risk of vessel near-miss, grounding, collision or allision incidents during construction of the marine component of the transmission line. There is potential that grounding, collision or allision could damage a ship's hull and result in a release of hazardous material, including propulsion fuel (e.g., diesel fuel, bunker fuel). Near-miss incidents are not anticipated to interact with any VCs. Effects to VCs of grounding, collision and allision incidents would be consistent with those assessed in Section 9.8 of the Application. Vessel grounding, collision, or allision is considered rare and would occur as a short-term, localized,	No specific mitigation has been identified for incidents regarding vessels associated with the transmission line. These vessels are expected to comply with the *Canada Shipping Act* and applicable environmental legislation, which would manage potential risks associated with cable laying and installation as well as the *Pilotage Act* and the Pacific Pilotage Regulations, which requires vessel pilotage by a Canadian marine pilot for vessels 350 gross tons or larger.

Table F-9 – Potential Malfunctions and Accidents Associated with the Transmission Line

Scenario	Potential Effects	Mitigation Measures
	one-time, non-recurring event. The consequence of a vessel grounding, collision, or allision is considered insignificant to minor for human health, minor for air quality, moderate for vegetation and wetlands and wildlife and wildlife habitat, moderate to major for and marine resources and major for marine use. In consideration of the likelihood and consequence, the overall risk to VCs from vessel grounding, collision, or allision is rated low.	
LNG carriers or natural gas liquids (**NGL**) product vessel spills	This scenario is focused on LNG carriers and NGL product vessels and not applicable to the transmission line.	Not applicable
Project-related transportation incidents (roadway and marine).	There is risk of a roadway or marine transportation incident during construction of the transmission line. Effects would be consistent with those assessed in Section 9.10 of the Application. The consequence of transmission line-related transportation incidents, for those VCs where the uTLAA is applicable, is considered insignificant for air quality, minor for surface water, freshwater fish and fish habitat, vegetation and wetlands, and human health, minor to moderate for wildlife and wildlife habitat, and moderate to major for marine resources and marine use. The overall risk of a transportation-related accident to VCs is considered low to high.	▪ If large numbers of transmission line workers are anticipated to be traveling via Highway 113/Nisga'a Highway, provide buses to transport workers to reduce the number of individual vehicle trips. ▪ Vehicles traveling on Highway 113/Nisga'a Highway will carry fire suppression tools (e.g., fire pump can)

NOTES:

[1] Applicable Standards include:

[1] BC Hydro Transmission Engineering Technical Standards, Procedures and Guidelines, Manual ES41K, Section 1.1 Revision 2, December 2013

[2] CAN/CSA Standard C22.3 No. 1-20 Overhead Systems (for clearance and separations that are not specified in the relevant BC Hydro Standard)

[3] BC Hydro Transmission Engineering Standard ES41C Section 1, May 2010 Right-of-Way Dimensions for New Overhead Transmission Lines.

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F.9.3 Effects on Current and Future Generations

Section 22.0 of the Application provides a summary of positive and adverse effects of the Project on current and future generations. This section provides a summary of such effects as they relate to the transmission line. As outlined in Sections 11.0 to 19.0 and Section 22.0 of the Application, a span of 25 years serves as representative of a single human generation. The lifecycle of the transmission line is anticipated to exceed 25 years. Certain long-term effects on current and future generations will therefore be realized within the temporal boundaries of the transmission line.

The transmission line serves several purposes that are foundational and relevant to current and future generations:

- Providing renewable electricity to the Project from the BC Hydro grid, reducing greenhouse gas emissions, improving compliance with federal and provincial requirements, and aligning it with environmental and sustainable development goals
- Facilitating development of new regional infrastructure incidental to the Project that will bring economic opportunities to both Indigenous and non-Indigenous communities and businesses
- Creating economic self-determination opportunities for the Nisg̲a’a Nation and improving the quality of life for Nisg̲a’a citizens

The transmission line has the potential to generate adverse effects (see Section F.7.1 for detailed assessment) to current and future generations through the following direct and indirect pathways:

- Marine activities related to construction and decommissioning of the transmission line have the potential to adversely affect Indigenous, recreational and commercial marine harvesting, and marine use for recreation and tourism. As noted in the marine use assessment in Table F-5, operation maintenance and repairs to submarine cable is not expected to cause any additional interference with marine users.
- Physical activities and marine construction have the potential to adversely affect Indigenous interests, including actual or perceived changes to sense of place, cultural identity, effects on sacred places and heritage sites, access and travel, and self-determination.
- Activities related to the transmission line have the potential to adversely affect biophysical conditions along the transmission line within the uTLAA, such as vegetation and wetlands, surface water, wildlife and wildlife habitat, freshwater fish, and marine resources. These changes have the potential to contribute to biodiversity loss, therefore indirectly and directly affecting current and future generations.

Construction of the transmission line is expected to have several positive impacts. The transmission line is anticipated to enhance the employment and economic benefits to the Nisg̲a’a Nation provided by the Project, contributing to economic reconciliation and self-determination. These aspects are explored in detail in Section 22.0 of the Application. The transmission line will also facilitate improved electric grid service and reliability to the four Nisg̲a’a villages located outside of the uTLAA: Gitlaxt’aamiks, Laxgalts’ap,

Gitwinksihlkw, and Gingolx. This improvement is anticipated to yield several economic and environmental benefits, some of which align with the calls to action presented by the Truth and Reconciliation Commission (2015):

- reduced risk of power outages and disruption, providing benefits to residents, businesses, and essential services
- facilitates better healthcare services (Recommendation #19), education (Recommendation #7) and communication: hospitals and clinics can function optimally, students can study without interruptions, and households can access modern amenities
- reduced need for backup generators or inefficient energy sources: contributes to environmental sustainability and reduced greenhouse gas emissions
- availability of electricity supports community development initiatives: allows for the establishment of community/healing centres (Recommendation #21), recreational facilities, and cultural events

In respect of GHG emissions, which is also discussed in F.9.4, the transmission line will enable the Project to reduce its GHG emissions. These emissions are likely to contribute to climate change, which can have direct and indirect effects on current and future generations. The transmission line is expected to aid in the strategic positioning of the Project to align with federal, provincial, local, and Indigenous sustainability goals, including CleanBC, StrongerBC, First Nations Climate Change Initiative (FNCI), BC First Nations Climate Strategy and Action Plan, Nisga'a Land Use Plan, and the Nisga'a Treaty.

Section 22.0 of the Application provides further details on how the transmission line supports the alignment of the Project with these strategic directives and initiatives and federal and provincial laws and policies, contributing to environmental protection and the development of a sustainable economy for current and future generations.

F.9.4 Greenhouse Gas Emissions

Using the same method and data sources as described in the Application (see Section 4.1.6 of Appendix 8.0A GHG TDR), the revised estimate of land-use change emissions from construction of the transmission line is 69,385 tonnes carbon dioxide equivalent (CO_2e). This estimate includes the use of the longest on-land portion of the transmission line (28.6 km). Assuming a 2-year construction period for the on-land portion, annual GHG emissions are 34,693 t CO_2e per year.

Similarly, the estimate of GHG emissions from construction activities was revised to 1,362 t CO_2e. This estimate was made using the same method and data sources as described in the Application (see Section 4.1.6 of Appendix 8.0A GHG TDR) and using a length of 28.6 km.

Removal of vegetation associated with construction of the transmission line will disturb the ability of forests and wetlands to absorb carbon dioxide from the atmosphere. A portion of the disturbed forest land will be allowed to regenerate to grass and shrub. Using the same method and data sources as described in the Application (see Section 2.0 of Appendix 8.0B Strategic Assessment of Climate Change

TDR), the carbon sink assessment indicates that the Project (including the transmission line in the uTLAA) would prevent the absorption of approximately 431 tonnes of carbon, which corresponds to approximately 1,581 t CO_2e. Note that this estimate is conservative as it does not account for regrowth of shrubby biomass in the right-of-way.

F.10 Summary of Mitigation Measures

Mitigation measures were selected for each applicable VC and assessment matter to avoid or reduce potential effects related to the transmission line. These mitigation measures, which are typical for managing potential effects associated with transmission lines, are summarized in Table F-10. As required by the AIR, the table provides:

- The mitigation selected to avoid or reduce effects on specific VCs
- General mitigation and commitments resulting from engagement
- Rationale for selection
- An assessment of the expected success (e.g., if there is little relevant or applicable experience) as well as any risks and/or uncertainties
- Presentation of the timing related to the phase of the activities for implementation as well as when the mitigation is expected to become effective. These mitigation measures are intended to support construction and operation of the transmission line. Mitigation measures to support decommissioning are anticipated to be similar to those for construction, but will be determined at the time of decommissioning, as applicable.
- Whether the mitigation falls within federal jurisdiction

With the implementation of the mitigation measures identified in Table F-10, it is anticipated that potential effects for many VCs will be reduced.

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Surface Water				
Mitigation: Develop and implement erosion prevention and sediment control measures using industry standard management practices. **Mitigation Mechanism:** Managing erosion and sedimentation using industry best practices and site-specific controls to prevent or reduce changes to water quality.	To prevent or limit change in water quality	**Expected Success:** There is a moderate to high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is some uncertainty about the effectiveness of this mitigation measure because of the wet climate. Continuous wet/rainy conditions can reduce the effectiveness of erosion prevention and sediment control measures if measures are not regularly monitored and adapted to address local conditions.	**Phase:** Construction **Effectiveness:** This mitigation measure is expected to be effective in the short-term	✓
Mitigation: Develop and implement measures for water and stormwater management. **Mitigation Mechanism:** Meeting the BC Water Quality Guidelines for Freshwater Aquatic Life or being within 20% of background conditions as a component of stormwater management protects surface water quality during construction activities. Documentation and communication (e.g., education) of best practices during construction will enable personnel to effectively implement measures to reduce impacts on surface water related to stormwater entering waterbodies.	To prevent or limit change in water quality.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. Water and stormwater management methods are widely used and effective. **Risk and Uncertainty:** There is little uncertainty about the effectiveness of this mitigation.	**Phase:** Construction **Effectiveness:** This mitigation measure is expected to be effective in the short-term and will begin functioning once measures are implemented.	-
Mitigation: Implement dust control measures (e.g., application of water) during dry or dusty conditions. **Mitigation Mechanism:** Watering roads and exposed surfaces will help to suppress dust and thus limit dust inputs into waterbodies.	To prevent or limit change in water quality.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty of the effectiveness of this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and will function immediately upon application.	-
Vegetation and Wetlands				
Mitigation: Complete a pre-construction survey of environmentally sensitive features, including plant species of interest, ecological communities of conservation concern and wetlands within the transmission line footprint. **Mitigation Mechanism:** A pre-construction survey of environmentally sensitive features will identify the boundaries around the transmission line footprint so they may be avoided during construction.	Avoidance is the first step in the mitigation hierarchy. A pre-construction survey may identify environmentally sensitive features that can then be avoided during construction.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There are no unknown risks or uncertainty associated with this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Mitigation: Incorporate botanical and cultural forest products into reclamation planning. **Mitigation Mechanism:** Incorporating botanical and cultural forest product plant species into reclamation planning will reduce long-term losses of these species.	This mitigation measure is recommended to reduce losses of botanical and cultural forest product species and increase the success rate of revegetation efforts because these species are native to the area and will likely establish quickly.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure because these species may establish after a disturbance and revegetation efforts using the same species will increase the success rate. **Risk and Uncertainty:** There is uncertainty in the survival of planted stock	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the medium-term.	-

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Mitigation: Implement industry standard management practices to reduce the introduction or spread of invasive plants and noxious weeds. **Mitigation Mechanism:** Invasive plant management to control the potential introduction of invasive plants reduces the indirect effects on native plant communities.	The *Weed Control Act* and Regulations prohibit the spread of invasive species.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. Invasive plant prevention and control techniques are well-known and understood. Invasive plant control and management is an industry standard. **Risk and Uncertainty:** There is little uncertainty of the effectiveness of this mitigation measure because invasive plant control and management is an industry standard.	**Phase:** Construction Operation **Effectiveness:** This mitigation measure is effective in the short-term and will be ongoing throughout the life of the transmission line	-
Mitigation: Develop and implement erosion prevention and sediment control measures using industry standard management practices. **Mitigation Mechanism:** These measures will be applied on the ground during construction.	Erosion and sediment control are industry standard best management practices.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There are no known risks associated with this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and will begin functioning once measures are installed.	✓
Mitigation: Develop and implement a wetland compensation plan to address loss of wetland area and function. **Mitigation Mechanism:** This mitigation measure will compensate for the loss of wetland functions associated with the transmission line (i.e., through securement and restoration, enhancement, or creation of wetlands).	Operational Framework for Use of Conservation Allowances (Environment Canada 2012). Compensation is the last step in the mitigation hierarchy.	**Expected Success:** This mitigation has a moderate likelihood of success because compensation is not always successful. **Risk and Uncertainty:** There are no unknown risks or uncertainty associated with this mitigation measure.	**Phase:** Construction Operation **Effectiveness:** This mitigation measure is effective in the medium- term.	✓
Wildlife and Wildlife Habitat				
Mitigation: Avoid disturbance related to transmission line footprint preparation during the primary nesting period (i.e., April 11 to August 8): • Where disturbance must occur during the primary nesting period a pre-disturbance nesting bird survey will be completed by a QP. • A setback will be placed around active nests; the size of the buffer will be determined through consultation with a QP. **Mitigation Mechanism:** Reduce potential interactions with wildlife and wildlife habitat by avoiding sensitive timing for wildlife.	Avoiding and/or reducing loss or alteration of potential nesting habitat will reduce adverse residual effects associated with change in habitat and change in mortality risk for birds.	**Expected Success:** There is a high level of success associated with avoiding the primary nesting period. There is also a high level of success associated with delineating the nest buffer. **Risk and Uncertainty:** There is moderate risk associated with this mitigation because not all nests may be detected during a nest sweep and the nest sweeps may disturb nesting birds. There is little uncertainty associated with this mitigation measure because marking the nest buffer clearly identifies the clearing limit for the contractor.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and is not necessary after the short-term (i.e., after clearing).	✓

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Mitigation: Nests of bird species listed in a table on Schedule 1 of the Migratory Birds Regulations 2022 are protected year-round from removal during the waiting period ascribed to that species. If such a nest is detected: • An 'active period' setback will be placed around the nest while it is active and a smaller 'inactive period' setback will be placed around the nest while inactive to facilitate year-round protection. The size of the setback will be determined through consultation with a QP and in accordance with ECCC's guidelines to avoid harm to migratory birds. • If removal of the nest is necessary, it may be removed without a permit if all conditions of Migratory Birds Regulations 5.2(c) are met, including providing written notice to the Minister of ECCC (via the Abandoned Nest Registry) as many months in advance as required for that species and providing the nest is not used for nesting by a migratory bird for that period. In certain limited situations a damage or danger permit may be available to allow removal of the nest following a permit application and approval. **Mitigation Mechanism:** Reduce potential interactions with wildlife and wildlife habitat by avoiding sensitive habitat features for wildlife.	Avoiding and/or reducing loss or alteration of potential nesting habitat will reduce adverse residual effects associated with change in habitat.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure because there is a physical or digital marker showing the setback. **Risk and Uncertainty:** There is moderate risk associated with this mitigation because not all nests may be detected. There is little uncertainty associated with this mitigation measure because marking the nest setback clearly identifies the clearing limit for the contractor.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Mitigation: High-disturbance transmission line activities will be avoided within 300 m of active bald eagle nests during the breeding period (February 5 – August 31). If high-disturbance activities within 300 m of an active bald eagle nest cannot be avoided, a QP will be consulted to develop appropriate mitigation. **Mitigation Mechanism:** Avoid potential interactions with wildlife and wildlife habitat by avoiding sensitive timing and habitat features.	Avoiding sensitive wildlife features will reduce adverse residual effects associated with change in habitat and change in mortality risk.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure because avoiding construction or maintenance activities during the active nesting period within the setback distance reduces sensory disturbance and the potential for physical disturbance to the nest. **Risk and Uncertainty:** There is low risk and uncertainty associated with this mitigation because this follows best management practices for bald eagle nests.	**Phase:** Construction Operations **Effectiveness:** This mitigation measure is effective in the short-term.	-
Mitigation: Mitigation for amphibians will be implemented for construction works occurring in or within 30 m of wetlands during the amphibian breeding and dispersal period (approximately mid-April to late-September). A QP will be consulted on the mitigation. **Mitigation Mechanism:** Reduce potential interactions with wildlife and wildlife habitat by avoiding sensitive habitat features and species.	Reducing activities in wetlands and riparian areas will reduce adverse residual effects associated with change in habitat, change in movement, and change in mortality risk for amphibians.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure because avoiding work in wetlands during the amphibian breeding and dispersal period reduces the potential for interactions with amphibians. **Risk and Uncertainty:** There is low risk and uncertainty associated with this mitigation because this follows best management practices for amphibians.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	-
Mitigation: A pre-construction survey for wildlife habitat features (i.e., dens, mineral licks, bat roosts, pileated woodpecker cavities, raptor nests) will be completed by a QP prior to the start of vegetation clearing, if those activities will occur during the active period for the habitat feature. Surveys for band-tailed pigeon mineral sites will be completed during the potential active period (i.e., during the breeding season and/or fall migration) prior to vegetation clearing. **Mitigation Mechanism:** Reduce potential interactions with wildlife and wildlife habitat by avoiding sensitive habitat features and species.	Avoiding disturbance to sensitive wildlife features will reduce adverse residual effects associated with change in habitat and change in mortality risk.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure because identifying wildlife habitat features will allow appropriate mitigation to be implemented. **Risk and Uncertainty:** There is moderate risk associated with this mitigation because not all habitat features may be detected. There is low uncertainty in the effectiveness of this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and is not necessary after the short-term (i.e., after clearing).	-

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Mitigation: Mark setbacks around identified active wildlife habitat features prior to site preparation activities. The size of any setback will be determined through consultation with a QP. **Mitigation Mechanism:** Reduce potential interactions with wildlife and wildlife habitat by avoiding sensitive habitat features and species.	Avoiding disturbance to sensitive wildlife features will reduce adverse residual effects associated with change in habitat and change in mortality risk.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure because physical or electronic markers will clearly indicate to contractors the permitted clearing boundary around identified wildlife habitat features. **Risk and Uncertainty:** There is low risk and low uncertainty in the effectiveness of this mitigation measure because the clearing boundaries will be delineated and marked in the field prior to transmission line footprint preparation activities.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and is not necessary after the short-term (i.e., after clearing).	-
Mitigation: Develop and provide wildlife awareness training to on-site personnel and contractors. **Mitigation Mechanism:** Reduce potential interactions with wildlife and wildlife habitat through education of on-site personnel and contractors.	Enhanced understanding of potential transmission line-related interactions with wildlife and wildlife habitat will reduce adverse residual effects associated with change in mortality risk.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low risk and low uncertainty associated with this mitigation.	**Phase:** Construction Operations **Effectiveness:** This mitigation measure is effective in the short-term	-
Mitigation: Develop and implement waste management measures to manage waste including hazardous and construction waste, recyclables, and wildlife attractants. **Mitigation Mechanism:** Decreases the likelihood of human-wildlife conflict and decreases the likelihood that transmission line-related waste will act as an attractant for wildlife.	Reducing the potential for human-wildlife conflict will reduce adverse residual effects associated with change in mortality risk	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low uncertainty that this mitigation will reduce the potential for transmission line-related waste to attract wildlife to the construction area.	**Phase:** Construction Operation **Effectiveness:** This mitigation measure is effective in the short-term-term	-
Mitigation: Overhead transmission lines may be marked using line markers to reduce the risk of bird collisions with transmission lines (APLIC 2012) in areas where a risk of collision is identified, and where it is feasible to do so. **Mitigation Mechanism:** Decreases the likelihood of bird collisions with overhead transmission lines.	Reducing the likelihood of bird collisions with overhead transmission lines will reduce adverse residual effects associated with change in mortality risk.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low risk and moderate uncertainty in the effectiveness of this mitigation measure. Effectiveness depends on the location line markers are installed and type of line markers used.	**Phase:** Operation **Effectiveness:** This mitigation is effective in the long-term and will begin functioning once line markers are installed.	✓
Freshwater Fish and Fish Habitat				
Mitigation: Develop and implement erosion prevention and sediment control measures using industry standard management practices. **Mitigation Mechanism:** Documentation and communication of best practices during construction, operation, and decommissioning will reduce impacts on fish habitat related to erosion and sediment entering watercourses through education and accountability.	Erosion prevention and sediment control measures are widely used and effective when installed to address site-specific conditions.	**Expected Success:** There is a moderate to high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is some uncertainty about the effectiveness of this mitigation measure because of the wet climate around the uTLAA. Continuous wet/rainy conditions can reduce the effectiveness of erosion prevention and sediment control measures if measures are not regularly monitored and adapted address local conditions.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and will begin functioning once measures are installed.	✓

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Mitigation: Planning and design will avoid or reduce impacts to identified watercourses, wetlands, and riparian areas within the terrestrial transmission line footprint to the extent possible. **Mitigation Mechanism:** Limiting impacts to fish-bearing streams and wetlands reduces the impact on fish habitat structure and cover. Limiting riparian vegetation clearing in the riparian reserve zone (**RRZ**) or the riparian management area (**RMA**) reduces impact on riparian habitat function (e.g., cover, nutrients, shading, etc.) and reduces the amount of sediment entering waterbodies	Maintaining freshwater stream and wetland habitat and riparian vegetation to the extent possible reduces effects to freshwater fish habitat through the maintenance of fish habitat function (e.g., instream structure and cover, soil stabilization, shade provision, and nutrient inputs. This mitigation measure has been selected to reduce the potential for the harmful alteration, disruption and/or destruction of fish habitat under the *Fisheries Ac*t, by reducing the loss of instream and riparian habitat in the uTLAA.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty about the effectiveness of this mitigation measure because reducing the transmission line footprint around streams, wetlands, and in riparian areas will reduce direct and indirect effects to fish habitat.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and long-term and will be effective upon the start of construction.	✓
Mitigation: Use clear span bridges or open-bottom arch culverts to cross streams with confirmed fish presence. **Mitigation Mechanism:** Limiting the instream footprint of road crossings will reduce impacts to fish habitat.	The use of clear span bridges or open-bottom culverts constructed above the ordinary high water mark will avoid or reduce impacts to fish habitat over the use closed-bottom structures.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty of the effectiveness of this mitigation measure because it avoids or reduces instream impacts to fish and fish habitat.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and long-term and is effective immediately.	✓
Mitigation: During construction, develop and implement spill prevention and response measures including appropriate equipment refueling and servicing procedures. **Mitigation Mechanism:** Following the above guidelines reduces the potential for hydrocarbons to enter streams, wetlands, or lakes by removing them from being in proximity to these waterbodies, and allows measures to be implemented (e.g., spill kits) should leaks occur	These guidelines are industry standard best management practices	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty about the effectiveness of this mitigation measure because it is industry standard practices, and the methods are well established and proven effective.	**Phase:** Construction **Effectiveness:** This mitigation measure is expected to be effective in the short-term.	✓
Mitigation: Instream works will be conducted in isolation of flowing water. **Mitigation Mechanism:** Isolating instream work areas reduces the potential for downstream sedimentation.	This mitigation measure reduces the potential for sedimentation and a reduction in the quality of fish habitat fish habitat.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty about the effectiveness of this mitigation measure because it is industry standard practice, and the methods are well established and proven effective.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term and is effective immediately upon implementation.	✓
Mitigation: As part of Request for Review process, develop schedule for construction activities that considers windows of least risk. **Mitigation Mechanism:** Scheduling construction activities during windows of least risk, where possible, reduces risks to freshwater fish.	The Request for Review process will confirm requirements for compliance with the *Fisheries Act*	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty about the effectiveness of this mitigation measure because it avoids or reduces impacts to fish	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short- term.	✓

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Mitigation: Conduct fish salvage, as required, prior to specific activities with high potential for crushing and burial or during in-water work requiring isolation and dewatering. **Mitigation Mechanism:** Reduce or avoid harm to fish by salvaging them from areas of impact.	This mitigation measure has been selected to reduce potential of death of fish under the *Fisheries Act*.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure, which is considered the industry standard. **Risk and Uncertainty:** Buried and/or microscopic invertebrates are unlikely to be salvaged and may be affected by construction activities despite this mitigation. Organisms may enter the salvaged area if it is not practical to achieve complete isolation.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Mitigation: Water intakes used during construction will be screened in accordance with the Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater (DFO 2020) or the final code of practice, if available. **Mitigation Mechanism:** Limiting the potential for the entrainment and impingement of fish on water intakes will reduce fish mortality and impacts to fish health.	This mitigation measure has been selected to reduce potential of death of fish under the *Fisheries Act*.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty about the effectiveness of this mitigation measure because it is industry standard practice, and the methods are well established and proven effective	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short- term and is effective immediately upon implementation.	✓
Marine Resources				
Mitigation: During construction, develop and implement spill prevention and response measures including appropriate equipment refueling and servicing procedures. **Mitigation Mechanism:** Managing water quality by preventing or reducing changes to water quality as a result of fuel/chemical spills.	This mitigation has been selected to prevent or limit changes in water quality due to contaminants from fuel and/or chemical spills	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There are low risks or uncertainties associated with this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short- term.	✓
Mitigation: Complete field surveys to better characterize fish habitat in intertidal and shallow subtidal zones that are potentially impacted by the transmission line. **Mitigation Mechanism:** This mitigation measure has been selected to better understand fish habitat potentially affected by the transmission line, which may improve mitigation measures selected to reduce effects during construction.	This mitigation measure has been selected to better understand potential effects of the transmission line.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty about the effectiveness of this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Mitigation: Offset harmful alterations, disruption and/or destruction of fish habitat through habitat creation, restoration, or enhancement measures, if required. The offset plan will be developed in collaboration with NLG and DFO. Consultation with other Indigenous nations on the offset plan is expected. **Mitigation Mechanism:** Residual harmful alteration, disruption, and/or destruction of fish habitat resulting from transmission line-related activities will be counterbalanced through the implementation of offsetting.	The *Fisheries Act* requires offsetting for any permanent alteration to, or destruction of, fish habitat.	**Expected Success:** There is a moderate likelihood of success with this mitigation measure, which is considered an industry standard, but offsetting sometimes involves a time lag before becoming effective. **Risk and Uncertainty:** There are moderate risks or uncertainties associated with this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the medium- to long-term.	✓
Mitigation: Complete a marine survey to confirm the appropriateness of the selected route and to limit impacts to environmentally sensitive marine areas (e.g., sponge reefs, coral gardens). **Mitigation Mechanism:** This mitigation measure would support route planning and reduce potential effects of the transmission line on marine resources.	This mitigation measure could help reduce potential effects of the transmission line on marine resources by providing a better understanding of the marine environment.	**Expected Success:** There is a moderate likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is uncertainty around whether the route could be altered to avoid or further reduce effects to environmentally sensitive marine areas.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Mitigation: As part of Request for Review process, develop schedule for construction activities that considers windows of least risk. **Mitigation Mechanism:** Scheduling construction activities during windows of least risk, where possible, reduces risks to marine fish.	The Request for Review process will confirm requirements for compliance with the *Fisheries Act*	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is little uncertainty about the effectiveness of this mitigation measure because it avoids or reduces impacts to fish	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Mitigation: Conduct marine fish and invertebrate salvage, as required, prior to specific activities with high potential for crushing and burial or during in-water work requiring isolation and dewatering. **Mitigation Mechanism:** Direct removal of marine organisms in areas to be dewatered or directly impacted is expected to limit the likelihood of injury or mortality.	Conducting fish salvage in isolated areas slated for dewatering/in-water work is a common practice.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure, which is considered the industry standard. **Risk and Uncertainty:** Buried and/or microscopic invertebrates are unlikely to be salvaged and may be affected by transmission line-related activities despite this mitigation. Organisms may enter the salvaged area if it is not practical to achieve complete isolation.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Marine Use				
Mitigation: In consultation with the CCG, identify and install appropriate AtoN. **Mitigation Mechanism:** The installation of appropriate AtoN will promote safe marine navigation. AtoN will be installed in coordination with the applicable regulatory bodies such as the CCG.	This mitigation measure was selected based on its effectiveness to mitigate potential changes to marine navigation and its inclusion as a mitigation measure for similar projects in the region (Aurora LNG 2017b; LNG Canada 2014b).	**Expected Success:** There is a high likelihood of success associated with this mitigation measure because there is a long history of AtoN being used to help guide marine traffic in Canada and throughout the world. **Risk and Uncertainty:** There is little uncertainty of the effectiveness of this mitigation measure; however, AtoN are subject to damage, failure, and dislocation (CCG 2011). The CCG's NAVWARNs and robust repair replacement process minimizes the risk to AtoN of damage, failure, and dislocation. All installations would be reviewed by the CCG to ensure compliance with the International Association of Lighthouse Authorities.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Mitigation: Establish methods for regular communication of construction activities with marine users **Mitigation Mechanism:** Communication of transmission line-related activities with marine users will provide an understanding of timing of activities that may affect them.	This mitigation was selected to reduce potential effects on marine users by communicating transmission line-related information so they can make informed decisions.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low risk and uncertainty associated with this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Mitigation: Planning and design will avoid or reduce impacts to identified watercourses, wetlands, and riparian areas within the proposed transmission line development area to the extent possible. **Mitigation Mechanism:** Reduction in riparian clearing provides better visual quality to marine users.	This mitigation was selected to reduce changes in visual quality for marine users in the area of the transmission line.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is moderate uncertainty associated with this mitigation measure as there will be limits to how much riparian clearing can be avoided.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Archaeological and Heritage Resources				
Mitigation: Planning and design will avoid identified archaeological and heritage sites to the extent possible. In cases where avoidance is not feasible or practical, mitigation will involve SDR. **Mitigation Mechanism:** The transmission line component of the Project is designed to avoid archaeological and heritage resources where feasible. SDR could include additional field investigations, potentially including controlled excavations, collection and dating of CMT stem round samples, monitoring.	This mitigation avoids transmission line-related effects to the resource. Typically, the mitigation preferred by the Archaeology Branch, BCER, and Indigenous nations. This mitigation would use SDR methods approved by the Archaeology Branch and developed in consultation with the Heritage Branch. SDR methods would be determined on a site-by-site basis.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** Chance finds of archaeological or heritage resources could still occur and this would be addressed in a chance find procedure. There is little uncertainty in the effectiveness of this mitigation measure because the SDR would use standardized, regulator-approved methods.	**Phase:** All phases **Effectiveness:** Avoidance to be confirmed during the detailed design stage. Fencing or flagging of site avoidance zones may be required during construction and operation. SDR is typically completed prior to construction; however, monitoring and collection of CMT stem round samples could occur during construction.	-
Mitigation: A chance find procedure will be established for activities associated with the transmission line, and will identify mitigation to be followed if archaeological, historical, or paleontological materials are unexpectedly discovered during construction activities. **Mitigation Mechanism:** This mitigation measure provides guidelines to follow in the event that an archaeological, historical or paleontological material is unexpectedly discovered during construction.	This mitigation provides guidelines to follow in the event of a chance find during construction.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is a low risk and uncertainty associated with this mitigation measure.	**Phase:** All phases **Effectiveness:** This mitigation measure is effective in the short-term.	-
Malfunctions and Accidents				
Mitigation: During construction, develop and implement spill prevention and response measures including appropriate equipment refueling and servicing procedures. **Mitigation Mechanism:** This mitigation measure is recommended to prevent spills from happening and to have a process for clean up in the event that a spill does occur.	This mitigation measure provides processes to follow in the event of a spill and provides procedures for appropriate refueling and servicing.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low risk and uncertainty associated with this mitigation measure.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	✓
Mitigation: Meet or exceed the minimum vertical and horizontal clearances and separations from wire to ground outlined in applicable standards[2] **Mitigation Mechanism:** This mitigation measure is recommended to reduce potential for malfunctions or accidents associated with objects touching the transmission line wire.	This mitigation measure is required by the standards that the transmission line will operate under.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low risk and uncertainty associated with this mitigation measure.	**Phase:** Operation **Effectiveness:** This mitigation measure is effective in the short-term.	-
Mitigation: Implement measures for integrated vegetation management for control of vegetation in transmission rights-of-way in accordance with applicable standards (e.g., Western Electricity Coordinating Council Standard FAC-003-1) **Mitigation Mechanism:** This mitigation measure provides guidelines for vegetation management along the transmission line rights-of-way.	This mitigation measure provides standards applicable to vegetation management for transmission lines.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low risk and uncertainty associated with this mitigation measure.	**Phase:** Operation **Effectiveness:** This mitigation measure is effective in the short-term.	-

Table F-10 – Summary of Mitigation Measures

Mitigation/Mitigation Mechanism	Rationale for Selection	Expected Success/ Risks and Uncertainty	Timing	Falls Within Federal Jurisdiction[1]
Mitigation: As directed by a Qualified Professional, implement measures to manage the fuel load created from vegetation management activities to maintain transmission line corridors in a condition that would reduce the potential for fire to spread in accordance with the *Wildfire Act* and Regulation **Mitigation Mechanism:** This mitigation measure will reduce potential for a fire to spread along the transmission line right-of-way.	This mitigation measure will reduce potential for a wildfire to spread along the transmission line and reduces potential for fires to spread if started as a result of a malfunction or accident.	**Expected Success:** There is a high likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low risk and uncertainty associated with this mitigation measure.	**Phase:** Operation **Effectiveness:** This mitigation measure is effective in the short- term.	-
Mitigation: If large numbers of transmission line workers are anticipated to be traveling via Highway 113/Nisga'a Highway, provide buses to transport workers to reduce the number of individual vehicle trips. **Mitigation Mechanism:** This mitigation measure is recommended to reduce the number of vehicles on the highway, which reduces the potential for accidents.	This mitigation measure is recommended to reduce the number of vehicles on the highway, which reduces the potential for accidents.	**Expected Success:** There is a moderate likelihood of success associated with this mitigation measure. **Risk and Uncertainty:** There is low risk associated with this mitigation measure and some uncertainty because an accident involving a bus rather than a single-occupant vehicle may result in more injuries.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	-
Mitigation: Vehicles traveling on Highway 113/Nisga'a Highway will carry fire suppression tools (e.g., fire pump can). **Mitigation Mechanism:** This mitigation measure aims to reduce the spread of a potential fire caused by a vehicular accident by having fire suppression tools available in each vehicle.	This mitigation measure is recommended to reduce potential for a fire if an accident were to start one.	**Expected Success:** This mitigation measure has a moderate likelihood of success. If a fire is started because of a vehicle accident, and workers are not injured and are able to use suppression tools, a fire could be put out or controlled until emergency response arrives. **Risk and Uncertainty:** There is a low level of risk and a moderate level of uncertainty associated with this mitigation measure, because personnel may be too injured to use fire suppression equipment, or a fire may escape containment quickly, depending on weather conditions.	**Phase:** Construction **Effectiveness:** This mitigation measure is effective in the short-term.	-

NOTES:

[1] Indicating that a mitigation falls within federal jurisdiction does not preclude that it may also fall under the jurisdiction of another governing body.

[2] Applicable Standards include:

[1] BC Hydro Transmission Engineering Technical Standards, Procedures and Guidelines, Manual ES41K, Section 1.1 Revision 2, December 2013

[2] CAN/CSA Standard C22.3 No. 1-20 Overhead Systems (for clearance and separations that are not specified in the relevant BC Hydro Standard)

[3] BC Hydro Transmission Engineering Standard ES41C Section 1, May 2010 Right-of-Way Dimensions for New Overhead Transmission Lines.

1

F.11 Statutory Requirements under the *Impact Assessment Act*

The Project is undergoing a substituted impact assessment process that must meet the legislative requirements of the *Impact Assessment Act*. Section 24.0 of the Application provides a summary of how these statutory requirements are addressed in the Application. This section will evaluate whether any additional considerations as they relate to potential effects of the transmission line within uTLAA are required. A concordance between the list of potential effects within federal jurisdiction, as established in section 2 (Definitions) of the IAA, and the information provided in this Appendix is provided in Table F-11. A concordance between the factors that must be taken into account by an impact assessment of a designated project as per subsection 22(1) Factors to be Considered of the IAA, and where/if the relevant information is presented in this Appendix is provided in Table F-12.

Table F-11 – Concordance of Potential Effects Within Federal Jurisdiction

Effects within Federal Jurisdiction (as defined in section 2 of the IAA), with respect to a physical activity or a designated project:	Additional Content Provided in this Appendix
(a) a change to the following components of the environment that are within the legislative authority of Parliament:	
(i) fish and fish habitat, as defined in subsection 2(1) of the *Fisheries Act,* (ii) aquatic species, as defined in subsection 2(1) of *Species at Risk Act*	**Section F.7.1; Table F-5:** The **Surface Water** VC is discussed in relation to changes to the chemical and physical composition of surface water. **Section F.7.1; Table F-5:** The **Freshwater Fish and Fish Habitat** VC is discussed in relation to change in fish habitat and change in fish health, growth, survival, or reproduction. **Section F.7.1; Table F-5:** The **Marine Resources** VC is discussed in relation to change in water and sediment quality, change in habitat, change in behaviour caused by sensory disturbance, change in injury and mortality risk.
(iii) migratory birds, as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*, and	**Section F.7.1; Table F-5:** The **Wildlife and Wildlife Habit** VC is discussed in relation to change in habitat and change in injury and mortality risk.
(iv) any other component of the environment that is set out in Schedule 3;	n/a
(b) a change to the environment that would occur:	
(i) on federal lands,	The uTLAA is smaller in area than the TLAA and includes approximately 0.3 ha of federal lands (a federal subdivision [PID 10556729]) at the north end of Mylor Peninsula. The portion of the uTLAA that extends south of the TLAA does not overlap any federal lands. No additional content beyond what was assessed in the Application is required.
(ii) in a province other than the one where the physical activity or the designated project is being carried out,	Potential effects are not predicted to extend to a province outside of BC.
(iii) outside Canada;	No effects that occur outside of Canada are within the scope of this supplement

Table F-11 – Concordance of Potential Effects Within Federal Jurisdiction

Effects within Federal Jurisdiction (as defined in section 2 of the IAA), with respect to a physical activity or a designated project:	Additional Content Provided in this Appendix
(c) with respect to the Indigenous peoples of Canada, an impact — occurring in Canada and resulting from any change to the environment — on:	
(i) physical and cultural heritage,	**Section F.7.1; Table F-5:** The **Archaeological and Heritage Resources** VC is discussed in relation to loss of information about or alteration to Site contents or context **Section F.7.1; Table F-5:** The key concerns of affected Indigenous nations related to the transmission line received through engagement are discussed. These included potential changes in marine access, and therefore ability to access sacred places and heritage sites.
(ii) the current use of lands and resources for traditional purposes,	**Section F.7.1; Table F-5:** The **Marine Use** VC is discussed in relation to change in marine fisheries and other uses, including Indigenous nations' Marine Use Plans.
(iii) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance;	**Section F.7.1; Table F-5:** The **Archaeological and Heritage Resources** VC is discussed in relation to loss of information about or alteration to Site contents or context
(d) any change occurring in Canada to the health, social or economic conditions of the Indigenous peoples of Canada; and	As described in Table 3 of the AIR, the TLAA (and similarly the uTLAA) is not applicable to health, social or economic effects.
(e) any change to a health, social or economic matter that is within the legislative authority of Parliament that is set out in Schedule 3.	There are no other health, social or economic matters set out in Schedule 3 of the IAA.

1

Table F-12 – Concordance with Factors to be Considered

Factor to be considered (as defined in section 22(1) of the IAA)	Additional Content provided in this Appendix
22 (1) The impact assessment of a designated project, whether it is conducted by IAAC or a review panel, must take into account the following factors	
(a) The changes to the environment or to health, social or economic conditions and the positive and adverse consequences of these changes that are likely to be caused by the carrying out of the designated project, including:	
(i) the effects of malfunctions or accidents that may occur in connection with the designated project;	Section F.9.2; Table F-9 provides a summary of potential effects and mitigation measures for the malfunction and accident scenarios discussed in the Application as they relate to the transmission line.
(ii) any cumulative effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out;	Section F.7.2; no changes to the assessment of cumulative effects are anticipated based on refinement of the proposed routing for the transmission line within the TLAA.

Table F-12 – Concordance with Factors to be Considered

Factor to be considered (as defined in section 22(1) of the IAA)	Additional Content provided in this Appendix
(iii) the result of any interaction between those effects	Section F.7.2; no changes to the assessment of cumulative effects are anticipated based on refinement of the proposed routing for the transmission line.
(b) mitigation measures that are technically and economically feasible and that would mitigate any adverse effects of the designated project;	Section F.7.1; Table F-6 identifies transmission line-specific mitigation measures to manage potential effects, summarizes any changes to the anticipated residual effects of the transmission line within the uTLAA (quantitatively where feasible), and summarizes any changes to the characterization of residual effects. Section F.9.2; Table F-9 provides a summary of potential effects and mitigation measures for malfunction and accident scenarios as they relate to the transmission line. Section F.10; Table F-10 summarizes the mitigation measures identified in Section F.7.1; Table F-6 and Section F.9.2; Table F-9.
(c) the impact that the designated project may have on any Indigenous group and any adverse impact that the designated project may have on the rights of the Indigenous peoples of Canada recognized and affirmed by section 35 of the *Constitution Act,* 1982;	Section F.7.1; Table F-5 presents the potential effects of the transmission line within the uTLAA, including the impacts on environmental resources and conditions and social and economic conditions that support the exercise of Indigenous rights. Section F.8.1 discusses the potential effects of the transmission line as they specifically relate to Indigenous interests.
(d) the purpose of and need for the designated project;	Section F.1 provides discussion about the need for the transmission line as it relates to the Project. Further discussion of the need for the Project is discussed in Section 1.0 of the Application.
(e) alternative means of carrying out the designated project that are technically and economically feasible, including through the use of best available technologies, and the effects of those means;	Section 1.0 of the Application (sub-Section 1.8 Alternatives to the Project) evaluated aerial, subsea and terrestrial options for construction of the third-party transmission line between the Site and Nisga'a Lands. Section F.3 clarifies that aerial marine crossings are no longer under consideration. Section F.2.1 describes the route options considered within the uTLAA.
(f) any alternatives to the designated project that are technically and economically feasible and are directly related to the designated project;	None. Section 1.0 of the Application (sub-Section 1.9 Alternative Means of Carrying out the Project)
(g) Indigenous knowledge provided with respect to the designated project;	Section F.8; Table F-6 provides a summary of key information, Indigenous knowledge and transmission line concerns related to Indigenous interests. Further Indigenous knowledge and land use information regarding the transmission line and TLAA has been included throughout the Application, where it was made available through consultation, information gathering, and voluntary information sharing by Indigenous nations. This is described in the existing conditions sections of each VC Section as well as in Section 11.8.2 in Section 11.0 and Sections 1X.1.3 in Sections 12.0 to 19.0.

Table F-12 – Concordance with Factors to be Considered

Factor to be considered (as defined in section 22(1) of the IAA)	Additional Content provided in this Appendix
(h) the extent to which the designated project contributes to sustainability;	Section F.9.3 discusses some of the positive impacts that the transmission line is expected to have on future generations including how it may aid in aligning the Project with federal, provincial, local, and Indigenous sustainability goals. Further discussion can be found in Section 23.0 of the Application.
(i) the extent to which the effects of the designated project hinder or contribute to the Government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change;	Section F.9.3 discusses how the transmission line may aid in aligning the Project with federal, provincial, local, and Indigenous sustainability goals. Section F.9.4 provides a revised estimate of land-use change emissions from construction of the transmission line.
(j) any change to the designated project that may be caused by the environment;	Section F.9.2 discusses the risk of terrestrial or marine fires caused by the interaction of environmental factors (i.e., hazardous trees) with the transmission line. Section F.2.2.1 discusses that geotechnical and geophysical investigations will inform the routing, designs, and installation equipment that will be used to reduce risks related to the transmission line. Section F.5; Table F-2 discusses that pre-engineering geophysical surveys and a detailed marine survey will be integrated into the design to address site specific constraints and conditions of the seafloor. This includes consideration of the risks to submarine infrastructure due to active seafloor processes.
(k) the requirements of the follow-up program in respect of the designated project;	None. A follow-up strategy is proposed where a positive or adverse residual effect and/or cumulative effect has been identified as per Section 6.10 of the AIR. This is provided in each VC assessment. A summary of the Follow-up Strategy is provided in Appendix A.3
(l) considerations related to Indigenous cultures raised with respect to the designated project;	Section F.8 discusses the key concerns related to the TLAA and the construction of the transmission line received through engagement with the Indigenous nations. Indigenous culture was included where identified.
(m) community knowledge provided with respect to the designated project;	Section F.5; Table F-2 provides a high-level summary of comments from members of the TAC as they relate to the transmission line. Community knowledge is discussed in greater detail in Section 3.0 Public Engagement of the Application.
(n) comments received from the public;	None. Section 3.0 of the Application summarizes feedback received from the public, including comments related to the transmission line.
(o) comments from a jurisdiction that are received in the course of consultations conducted under section 21;	N/A

Table F-12 – Concordance with Factors to be Considered

Factor to be considered (as defined in section 22(1) of the IAA)	Additional Content provided in this Appendix
(p) any relevant assessment referred to in section 92, 93 or 95;	None. The Minister's Notice of Substitution Approval under the IAA describes the following considerations for substitution: ▪ consideration of federal policy measures and commitments outlined in the Federal Government's Strengthened Climate Plan; and ▪ consideration of commitments to be outlined in Canada's 2030 Emissions Reduction Plan as required under the *Canadian Net-Zero Emissions Accountability Act*, including consideration of a cap on emissions and best in class guidance to be established for the oil and gas sector, in the impact assessment. These considerations are provided in Appendix 8.0B Strategic Assessment of Climate Change TDR of the Application.
(q) any assessment of the effects of the designated project that is conducted by or on behalf of an Indigenous governing body and that is provided with respect to the designated project;	The requirements for the assessment of the Nisga'a Treaty, which establishes the Nisga'a Nation's Treaty rights and interests on Nisga'a Lands, the Nass Wildlife Area, and the Nass Area are provided in Section 11.0 Nisga'a Nation of the Application.
(r) any study or plan that is conducted or prepared by a *jurisdiction* — or an Indigenous governing body not referred to in paragraph (f) or (g) of the definition jurisdiction in section 2 — that is in respect of a region related to the designated project and that has been provided with respect to the project;	Section 11.0 Nisga'a Nation of the Application; the Nisga'a Effects Assessment has been developed collaboratively with the NLG.
(s) the intersection of sex and gender with other identity factors;	None. This factor is not applicable to the transmission line within the uTLAA
(t) any other matter relevant to the impact assessment that the Agency requires to be taken into account	N/A. The Agency has not identified any matters relevant to the transmission line assessment that are not identified in AIR and addressed in the Application.

F.12 Conclusion

This supplement has been developed to meet the conditions of EAO's Notice and to respond to concerns expressed by members of the TAC. This supplement provides the following additional information in relation to the transmission line:

- Defines the uTLAA based on preliminary routing analyses conducted to date (see Section F.2.1).
- Assesses the potential effects of the transmission line within the uTLAA. These are anticipated to potentially include:
  - Changes to surface water at between 16 and 43 mapped watercourse crossings present in the route corridors. Surface water quality has the potential to be impacted in watercourses in the uTLAA through sedimentation and dustfall during construction and increases in temperature associated with riparian clearing during construction and operation. Surface water drainage has the potential to be impacted in these watercourses during the construction phase. Water withdrawal may be required for dust suppression during the construction phase.
  - Changes to vegetation and wetlands including overlap with estuarine meadows with potential to support Arctic daisy, introduction and spread of invasive plant species, potential for impacts to approximately 8.7 to 23.3 ha of ecosystems with potential to support blue-listed communities and 0 to 9.6 ha of ecosystems with potential to support red-listed communities, approximately 36.8 to 71.8 ha of old or very old forest, approximately 0.5 to 21.5 ha of OGDA, and 12.6 to 31.6 ha of wetlands present in the revised corridors through tree clearing and tower placements.
  - Changes to wildlife and wildlife habitat through impacts to 22 to 53 ha of critical habitat polygons that may contain the biophysical attributes of marbled murrelet terrestrial critical habitat (depending on the route), approximately 300 ha of mountain goat Ungulate Winter Range, potential removal of bald eagle nest trees, temporary changes in movement related to sensory disturbance from construction, and change in mortality risk from accidental mortality related to vegetation clearing.
  - Changes to freshwater fish and fish habitat at between 16 and 43 mapped watercourse crossings present in the route corridors. Changes to fish habitat may include increases in sedimentation from construction and decommissioning, and riparian clearing may be required.
  - Changes to marine resources through installation of between approximately 15 and 23 km of marine cable. This will result in increased suspended sediments during construction and decommissioning, and temporary alteration (in areas where cable is buried) or permanent alteration (in areas with surface lay or armouring) to marine habitat.

- Changes to marine use and users through disruptions to marine navigation during construction, operation and decommissioning of the submarine cables. These changes may be temporary due to the presence of cable-laying and other related vessels, or ongoing due to marking of marine charts resulting in possible avoidance of fishing at/near the cable. Potential changes to aesthetics as portions of the terrestrial transmission line may be visible from Gingolx or to marine users, depending on the final routing.
- Changes to archaeological and heritage resources through ground disturbance and tree clearing activities that could disturb or destroy archaeological and heritage resources.
- Changes to Indigenous interests including: marine and terrestrial harvest and consumption; governance, health and well-being, social and economic conditions; sacred places and heritage sites; and, access and travel.

- Identifies mitigation measures for the construction, operation and decommissioning of the proposed transmission line within the uTLAA. These measures can adequately manage potential effects to VCs and reduce risk and uncertainty associated with the uTLAA.

In conclusion, this supplemental assessment of the transmission line within the uTLAA has not identified any change to the characterization of Project effects as presented in the Application. Similarly, this supplemental assessment has not resulted in any required changes to the Nation-specific assessments presented in the Application. To increase confidence in these results, the findings of pre-construction surveys will be incorporated into subsequent route planning and design. In addition, legislation, policy, best management practices, and transmission line specific mitigation measures will be implemented to manage potential effects.

Revised responses to all comments relating to the transmission line have been provided in the ITT provided with this Application (Appendix G).

F.13 References

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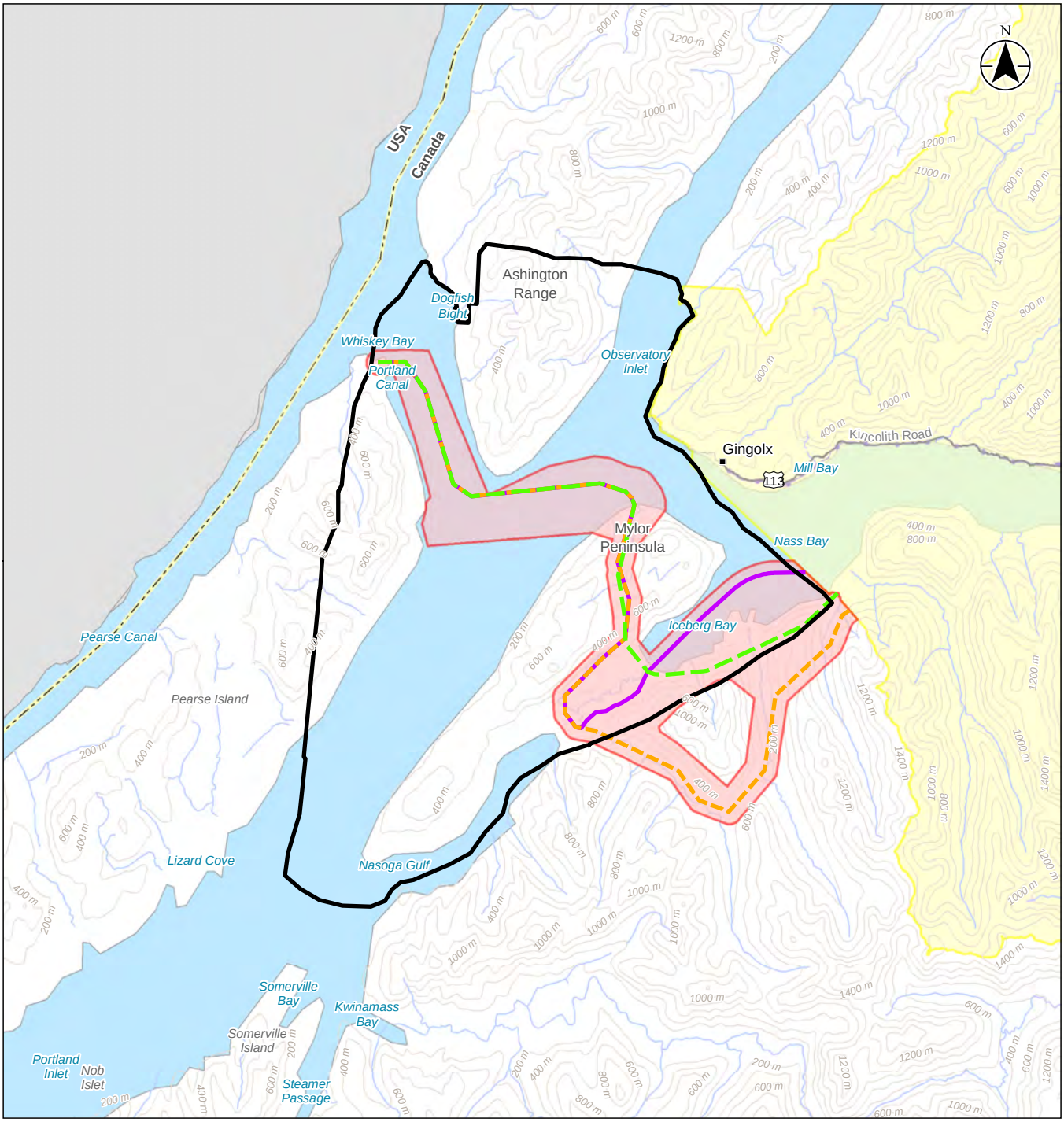
F.14 Figures



KSI LISIMS LNG

Route Options
- Option 1
- Option 2
- Option 3
- Nisga'a Lands Boundary
- Transmission Line Assessment Area
- Updated Transmission Line Assessment Area
- International Boundary
- Road
- Local Street
- Watercourse
- Waterbody

0 2 4 6 8 km
1:250,000 (at original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 BC Environment Albers
2. Data Sources: DataBC, Government of British Columbia; Natural Resources Canada

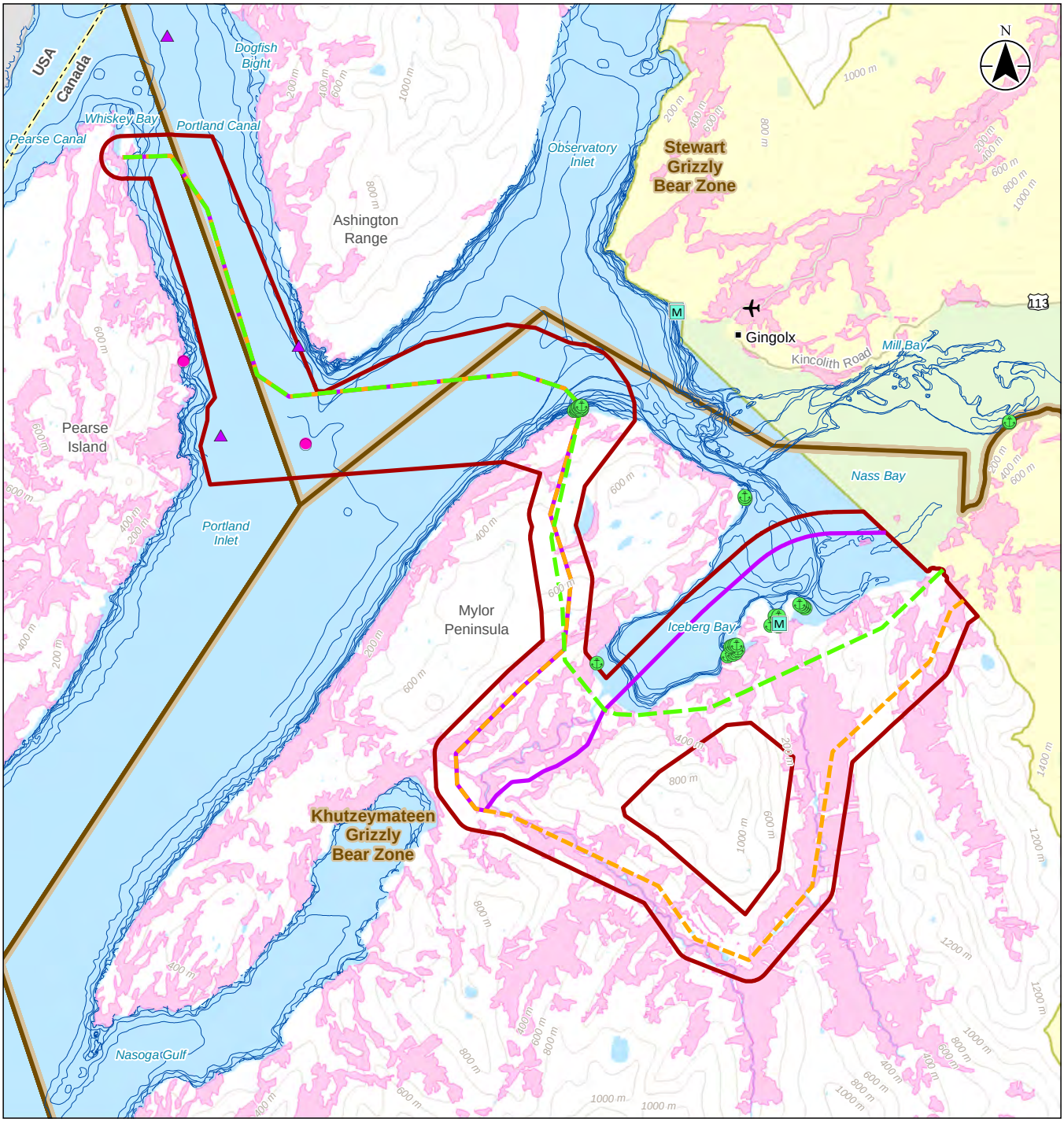
Stantec

Project Location: Pearse Island, BC
Project Number: 123221820
Prepared by TQUILICHINI on 20240522
Requested by JMENSER on 20240521

Client/Project/Report
Ksi Lisims LNG
Natural Gas Liquefaction and Marine Terminal

Figure No.
F-1

Title
Updated Transmission Line Assessment Area



KSI LISIMS LNG

Notes
1. Coordinate System: NAD 1983 BC Environment Albers
2. Data Sources: DataBC, Government of British Columbia; Natural Resources Canada

- Airport, Aerodrome, Heliport
- Coastal BC Mooring
- Recreational Marina

Whale Sighting
- Killer Whale
- Minke Whale
- Bathymetric Contour
- International Boundary
- Topographic Contour
- Critical Habitat Species at Risk Geographic Location Polygon (Marbled Murrelet)
- Grizzly Bear Population Unit

Route Options
- Option 1
- Option 2
- Option 3
- Nisga'a Lands Boundary
- Updated Transmission Line Assessment Area

0 1 2 3 4 km
1:140,000 (at original document size of 8.5x11)

Stantec

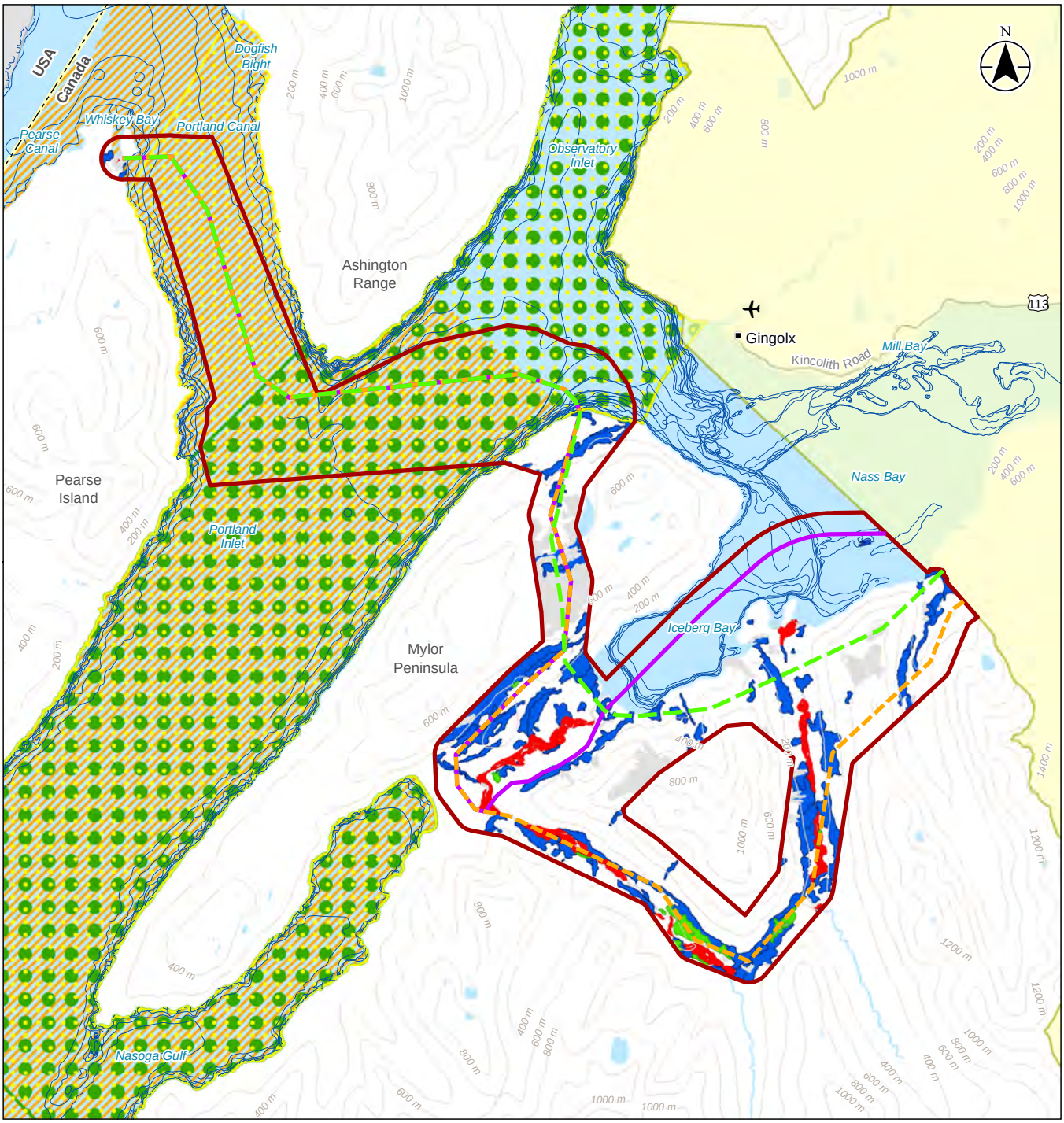
Project Location: Pearse Island, BC
Project Number: 123221820
Prepared by TQUILICHINI on 20240625
Requested by BSTANDING on 20240624
Reviewed by EFLORY on 20240625

Client/Project/Report
Ksi Lisims LNG
Natural Gas Liquefaction and Marine Terminal

Figure No.
F-2

PG. 1 of 3

Title
Key Environmental Constraints in the Updated Transmission Line Assessment Area (uTLAA)



KSI LISIMS LNG

Notes
1. Coordinate System: NAD 1983 BC Environment Albers
2. Data Sources: DataBC, Government of British Columbia; Natural Resources Canada

- Airport, Aerodrome, Heliport
- Bathymetric Contour
- International Boundary
- Topographic Contour

Ecological Communities of Conservation Concern
- Blue
- Not Ranked
- Red
- Various
- DFO Important Area for Eulachon
- DFO Important Area for Pollock
- DFO Important Area for Tanner Crab

Route Options
- Option 1
- Option 2
- Option 3
- Nisga'a Lands Boundary
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0 1 2 3 4 km
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Title
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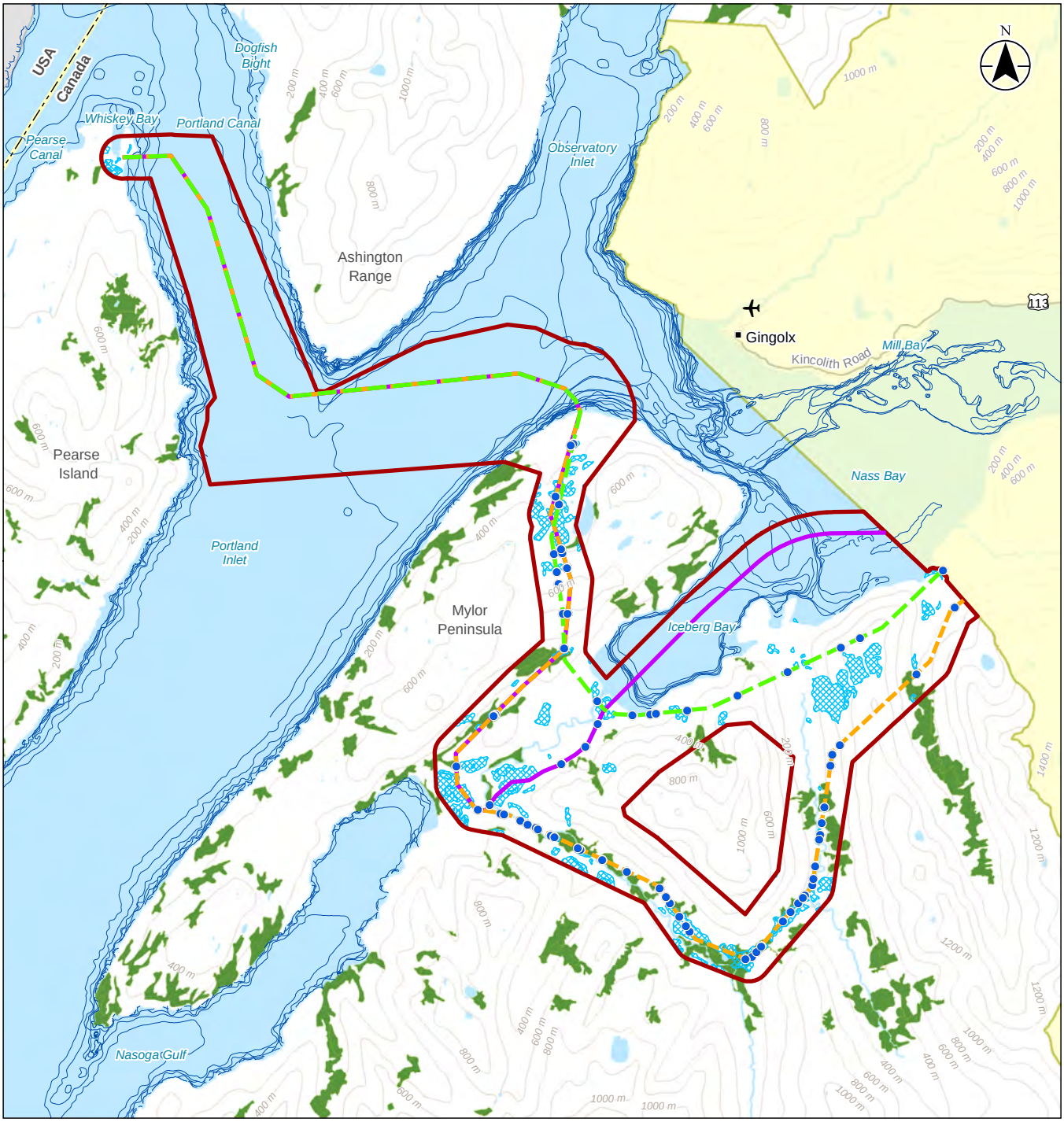

Airport, Aerodrome, Heliport
Potential Watercourse Crossing
Bathymetric Contour
International Boundary
Topographic Contour
Old Forest Priority Deferral Area
TEM Wetland

Route Options
Option 1
Option 2
Option 3
Nisga'a Lands Boundary
Updated Transmission Line Assessment Area

0 1 2 3 4 km
1:140,000 (at original document size of 8.5x11)

KSI LISIMS LNG

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Figure No.
F-2
PG. 3 of 3

Title
Key Environmental Constraints in the Updated Transmission Line Assessment Area (uTLAA)