

Tilbury Phase 2 LNG Expansion Project

Detailed Project Description Summary

Rev 0

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Contents

Glossary.....	vii
Acronyms and Abbreviations.....	ix
1. Introduction	1-1
1.1 Proponent Information.....	1-4
1.1.1 Project Contacts.....	1-4
1.1.2 Corporate Overview.....	1-4
1.1.3 The Tilbury LNG Facility.....	1-5
2. Project Overview	2-1
2.1 Project Need and Purpose.....	2-2
2.2 Project Components.....	2-3
2.3 Anticipated Project Cost.....	2-5
2.4 Infrastructure Requirements.....	2-6
2.5 Project Schedule.....	2-6
2.7 Alternatives to the Project.....	2-7
2.7.1 Gas Utility Resilience Analysis and LNG Storage.....	2-7
2.8 Alternative Means of Carrying Out the Project.....	2-9
3. Project Location	3-1
4. Spatial Boundaries	4-1
5. Land and Water Use	5-1
6. Emissions, Discharges, and Waste.....	6-1
7. Construction, Operations, and Decommissioning Phases	7-1
7.1 Project Construction and Operations.....	7-1
7.2 Project Decommissioning and Reclamation	7-2
8. Regulatory Context.....	8-1
8.1 British Columbia <i>Environmental Assessment Act</i>	8-1
8.2 Federal <i>Impact Assessment Act</i>	8-1
9. Federal Involvement – Financial Support, Lands, and Legislative Requirements.....	9-1
10. Environmental, Economic, Social, Culture, and Health Effects	10-1
10.1 Environmental Effects on Federal Lands, in a Province Other Than British Columbia, or Outside of Canada	10-1
10.2 Atmospheric Environment.....	10-1
10.2.1 Climate and Air Quality	10-1
10.2.2 Greenhouse Gases.....	10-1
10.2.3 Noise.....	10-2
10.3 Physical Environment.....	10-2
10.3.1 Geology and Soils.....	10-2
10.3.2 Contaminated Soils and Groundwater.....	10-2
10.3.3 Water and Aquatic Systems.....	10-3

10.4	Biological Environment	10-3
10.4.1	Vegetation.....	10-3
10.4.2	Wildlife and Wildlife Habitat.....	10-4
10.4.3	Fish and Fish Habitat.....	10-4
10.5	Human and Community Well-being Conditions.....	10-5
10.5.1	Social and Cultural Conditions.....	10-6
10.5.2	Economic Conditions	10-7
10.5.3	Archaeological and Heritage Resources Conditions.....	10-8
10.5.4	Health Conditions.....	10-9
10.6	Anticipated Cumulative Effects	10-9
10.7	Accidents and Malfunctions.....	10-9
10.8	Effects of the Environment on the Project	10-10
10.9	Mitigation and Management Strategies.....	10-11
11.	Engagement with Indigenous Nations	11-1
11.1	Identified Indigenous Nations.....	11-1
11.1.1	Indigenous Nations not Formally Identified as Participating Indigenous Nations.....	11-2
11.1.2	Indigenous Nations Identified in the Joint Summary of Issues and Engagement.....	11-2
11.2	Summary of Information Regarding Indigenous Nations' Lands.....	11-3
11.2.1	Chawathil First Nation	11-3
11.2.2	Cheam First Nation	11-3
11.2.3	Cowichan Tribes.....	11-3
11.2.4	Halalt First Nation	11-4
11.2.5	Katzie First Nation.....	11-5
11.2.6	Kwantlen First Nation.....	11-5
11.2.7	Kwikwetlem First Nation.....	11-5
11.2.8	Leq'á:mel.....	11-5
11.2.9	Lyackson First Nation.....	11-6
11.2.10	Malahat Nation.....	11-6
11.2.11	Matsqui First Nation	11-6
11.2.12	Métis Nation British Columbia.....	11-7
11.2.13	Musqueam Indian Band	11-7
11.2.14	Pauquachin First Nation.....	11-7
11.2.15	Penelakut Tribe.....	11-8
11.2.16	Popkum First Nation.....	11-8
11.2.17	Seabird Island Band.....	11-8
11.2.18	Semiahmoo First Nation.....	11-9
11.2.19	Shxw'ówhámél First Nation	11-9
11.2.20	Skawahlook (Sq'ewá:lxw) First Nation.....	11-9
11.2.21	Skowkale (Sq'ewqéyl-l) First Nation.....	11-9
11.2.22	Snuneymuxw First Nation	11-10
11.2.23	Sol'h Téméxw Stewardship Alliance	11-10
11.2.24	Soowahlie First Nation.....	11-11

11.2.25	Squamish Nation	11-11
11.2.26	Stó:lō Nation.....	11-11
11.2.27	Stz'uminus First Nation	11-12
11.2.28	Tsartlip First Nation.....	11-12
11.2.29	Tsawout First Nation.....	11-12
11.2.30	Tsawwassen First Nation.....	11-13
11.2.31	Tseycum First Nation	11-13
11.2.32	Tsleil-Waututh Nation	11-13
11.2.33	Ts'uubaa-asatx Nation (Lake Cowichan First Nation)	11-14
11.3	Summary of Early Engagement.....	11-14
11.3.1	Key Issues Raised.....	11-14
11.4	Summary of Planned Engagement Activities with Indigenous Nations	11-16
11.5	Preliminary Assessment of Potential Effects to Indigenous Nations Resulting from Project Activities	11-17
12.	Engagement with Governments, the Public, and Other Parties.....	12-1
12.1	Summary of Preliminary Engagement Activities.....	12-1
12.2	Government	12-1
12.3	Public and Other Interested Parties.....	12-3
13.	References.....	13-1

Appendix

A Indigenous Traditional Territories, Treaty Lands, and Reserve Locations

Tables

1-1	Project Information and Key Contacts.....	1-4
1-2	Tilbury Existing and Phase 1 Facilities	1-6
1-3	Material Offloading Components Included in the Tilbury Phase 2 LNG Expansion Project	1-8
2-1	Proposed Tilbury Phase 2 Facilities.....	2-1
2-2	Summary of Project Benefits.....	2-3
2-3	Project Components.....	2-3
2-4	Preliminary Project Schedule.....	2-6
2-5	System Resilience Alternatives Assessed.....	2-8
4-1	Preliminary Spatial Boundaries.....	4-1
7-1	Description of Project Activities	7-1
10-1	Preliminary Estimate of Net GHG Emissions per Phase.....	10-2
10-2	2016 Census Population Statistics for Metro Vancouver and Delta	10-6
10-3	Education Levels in Metro Vancouver	10-6
10-4	British Columbia Unemployment Rate, February to December 2020.....	10-8
10-5	British Columbia Employment Trends, February to December 2020.....	10-8
10-6	Preliminary List of Potential Accident and Malfunction Scenarios.....	10-10
10-7	Potential Effects of the Environment on the Project	10-11
11-1	Summary of Key Issues Raised by Indigenous Nations.....	11-15
11-2	Preliminary Identification of Potential Effects to Indigenous Interests Resulting from Project Activities.....	11-18
12-1	Government Agencies FortisBC Engages.....	12-2

Figures

1-1	Project Overview.....	1-3
1-2	Existing and Phase 1 Facilities.....	1-7
2-1	Phase 2 Project Facilities	2-2
2-2	Phase 2 Project Facilities Artistic Rendering.....	2-5
2-3	Key Elements of a Resilient Gas System.....	2-8
3-1	View of Tilbury site with Phase 1A in Foreground, and Base Plant in Background	3-1
3-2	Project Site Plan	3-2
5-1	Surrounding Land Use and Neighbouring Communities	5-3

Glossary

A Glossary has been added, since the Initial Project Description, to provide definitions of the terms used throughout the Detailed Project Description for the proposed Tilbury Phase 2 LNG Expansion Project (the proposed Project).

Acquired energy – Greenhouse gas (GHG) emissions associated with the generation of electricity, heat, steam, or cooling, purchased, or acquired from a third-party for the proposed Project. This term is now used in place of “indirect emissions” in the Environment and Climate Change Canada Strategic Assessment of Climate Change (2020).

Assessment – The application for an Environmental Assessment Certificate under the British Columbia (B.C.) *Environmental Assessment Act* (2018). Also known as the Impact Statement under the Canadian *Impact Assessment Act* (2019).

Base Plant – The original Tilbury LNG facility in operation since 1971 on Tilbury Island in Delta, B.C. The original facilities include liquefaction, a storage tank, LNG vaporizers for returning liquid to a gas, interconnects (gas feed and send-out), liquefaction refrigerant storage, and truck loading.

CO_{2e} – Or carbon dioxide equivalent, is a standard unit for measuring carbon footprints.

Existing Earth Jetty – The existing jetty adjacent to the FortisBC property, within Crown parcel PIN 6936210. The existing earth jetty has some physical structures but can be used for loading and offloading on a small-scale. If the existing earth jetty is upgraded during the Tilbury Marine Jetty project and or Phase 1 work, it will become the Material Offloading Facility (defined as follows).

Liquefaction Capacity – Up to 7,700 tonnes per day of additional LNG production capacity.

Material Offloading Facility (MOF) – The proposed upgraded earth jetty (described previously). Upgrades to the existing earth jetty are anticipated to occur as part of the Tilbury Marine Jetty project and for the Phase 1 site expansion activities. Additional upgrades to meet proposed Project-specific needs may be required. The design of the MOF is ongoing. The proposed upgrades could include the topside of the jetty and upland areas, which may include improving grading, load bearing, and dike upgrades as well as new in-water structures (such as, piles) may be part of the design. The design will include mitigation to reduce effects to the surrounding aquatic systems. The MOF will obtain the required permitting prior to being upgraded.

Net GHG emissions from a project are defined as: Net GHG emissions = Direct GHG emissions + Acquired energy GHG emissions - carbon dioxide captured and stored - Avoided domestic GHG emissions - Offset credits (Equation 1 in Environment and Climate Change Canada Strategic Assessment of Climate Change) (2020).

Phase 1A – The Phase 1 expansion has been approved by the B.C. government through B.C. Order-in-Council (OIC) (O.C. 557/2013) Direction No. 5 to the BCUC under the *Utilities Commission Act*. Phase 1A was constructed between 2014 and 2018 and has been in operation since 2018. Phase 1A includes natural gas liquefaction of approximately 700 tonnes per day and an LNG storage tank (Phase 1 tank) of approximately 46,000 cubic metres (m³) (1.1 petajoules [PJ]) and has received B.C. Oil and Gas Commission facility permits and Metro Vancouver emission permits.

Phase 1B – The Phase 1 expansion has been approved by the B.C. government through B.C. OIC (O.C. 557/2013) Direction No. 5 to the British Columbia Utilities Commission under the *Utilities Commission Act*. Phase 1B facilities are in design and engineering stages with the earliest in-service-date planned for 2025.

Detailed Project Description Summary

Project Application – The Environmental Assessment (EA) Application for the proposed Project.

Project Area – The general area around the proposed Project Site. Used when referring to the general area as opposed to the proposed Project Site, Footprint (defined as follows), or specific Local Assessment Area and Regional Assessment Area.

Project Footprint – The Project Footprint is the area directly disturbed by construction activities, including associated physical works and activities.

Project Site – 7651 Hopcott Road, on Tilbury Island in Delta, B.C. The legal description of the Tilbury site is Lot 1 District Lot 135 Group 2 New Westminster District Plan EPP28232 except Plan EPP 36476. PID: 029-263-301.

Storage Tank – New LNG storage tank with a working volume of 142,400 m³ approximately 3.5 PJ.

Tilbury Marine Jetty – The proposed jetty as part of the Tilbury Marine Jetty project. The Tilbury Marine Jetty includes temporary and permanent components. A floating temporary bunker berth will be constructed prior to the permanent marine tandem jetty.

Tilbury Marine Jetty project – The Tilbury Jetty Limited Partnership is proposing to construct a marine jetty (Tilbury Marine Jetty) next to the proposed Project Site to supply LNG to the marine transportation sector and for export. The Tilbury Marine Jetty project is separate and distinct from the Base Plant, Phase 1 expansion facilities, and the proposed Project. The Tilbury Marine Jetty project is currently undergoing a combined Federal and Provincial EA, under a substituted Provincial process that is led by the B.C. Environmental Assessment Office. The Tilbury Marine Jetty Assessment process began in May 2015 and the Application is currently in review.

Truck Loading – Two additional LNG truck loading bays will be added adjacent to the existing two bays that have already been constructed as part of the Phase 1A project. Construction of the additional bays is forecast to be completed at the end of 2022.

Acronyms and Abbreviations

°C	degree(s) Celsius
AAQO	Ambient Air Quality Objective
AIA	Archaeological Impact Assessment
ALR	Agricultural Land Reserve
AIR	Application Information Requirement
AOA	Archaeological Overview Assessment
APEC	area of potential environmental concern
Base Plant	original production and storage facility in operation since 1971
BAT	best available technology
B.C.	British Columbia
B.C. EAA	British Columbia <i>Environmental Assessment Act</i>
B.C. EAO	British Columbia Environmental Assessment Office
B.C. ENV	British Columbia Ministry of Environment and Climate Change Strategy
BCF	billion cubic feet
B.C. MEMLCI	British Columbia Ministry of Energy, Mines, and Low Carbon Innovation
B.C. MFLNRORD	British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development
B.C. MoTI	British Columbia Ministry of Transportation and Infrastructure
B.C. OGC	British Columbia Oil and Gas Commission
BCUC	British Columbia Utilities Commission
CAC	criteria air contaminant
CAD	Consultative Areas Database
CEA	Cumulative Effects Assessment
CI	carbon intensity
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CPCN	Certificate of Public Convenience and Necessity
CTS	Coastal Transmission System
Delta	City of Delta
DFO	Fisheries and Oceans Canada
DPD	Detailed Project Description
EA	Environmental Assessment

Detailed Project Description Summary

EAC	Environmental Assessment Certificate
ECCC	Environment and Climate Change Canada
FBC	FortisBC Inc. (electric company)
FEED	Front-End Engineering Design
FortisBC	FortisBC Holdings Inc. with its natural gas subsidiary FortisBC Energy Inc.
FEI	FortisBC Energy Inc. (gas company)
FHI	FortisBC Holdings Inc.
FTE	Full-Time Equivalent
GDP	Gross Domestic Product
GHG	greenhouse gas
HC	hydrocarbon
HIP	Heritage Inspection Permit
IA	Impact Assessment
IAA	<i>Impact Assessment Act</i>
IAAC	Impact Assessment Agency of Canada
IBA	Important Bird Area
IPD	Initial Project Description
km	kilometre(s)
kV	kiloVolt(s)
LAA	Local Assessment Area
LNG	liquefied natural gas
LIM	low-income measure
m	metre(s)
m ³	cubic metre(s)
masl	metre(s) above sea level
MLA	Member of Legislative Assembly
mm	millimetre(s)
MOF	Material Offloading Facility
MP	Member of Parliament
MTPA	million tonnes per year
N/A	not applicable
NO _x	nitrogen oxide
NRCan	Natural Resources Canada
OBE	Operating Basis Earthquake
OIC	Order-In-Council

PGV	Peak Ground Velocity
Phase 1A	Phase 1A production and storage expansion in operation since 2018
PJ	petajoule(s)
PM	particulate matter
proposed Project	proposed Tilbury Phase 2 LNG Expansion Project
proposed Project Site	7651 Hopcott Road, on Tilbury Island in the City of Delta, British Columbia
PSI	Preliminary Site Assessment
QEP	Qualified Environmental Professional
RAA	Regional Assessment Area
Richmond	City of Richmond
SARA	<i>Species at Risk Act</i>
SO _x	sulphur oxide
SSE	Safe Shutdown Earthquake
t/d	tonnes per day
TAC	Technical Advisory Committee
TBD	to be determined
tCO ₂ e	tonnes of carbon dioxide equivalent
tCO ₂ e/year	tonnes of carbon dioxide equivalent per year
TEGF	totally enclosed ground flare
TJLP	Tilbury Jetty Limited Partnership
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
VC	Valued Component
WAGE	Department of Women and Gender Equality

1. Introduction

FortisBC Holdings Inc. with its regulated natural gas subsidiary FortisBC Energy Inc. (collectively defined as FortisBC) is proposing to expand the existing liquefied natural gas (LNG) facility at 7651 Hopcott Road, on Tilbury Island in the City of Delta (Delta), British Columbia (B.C.) (Figure 1-1) (the proposed Project Site). The proposed Tilbury Phase 2 LNG Expansion Project (the proposed Project) includes expansion of a new LNG Storage Tank with a working volume of 142,400 cubic metres (m³) (approximately 3.5 petajoules [PJ]) and Liquefaction Capacity expansion of up to 7,700 tonnes per day (t/d) of LNG production. The proposed Project will receive natural gas at the proposed Project Site through established gas line systems. It will connect to the existing and proposed LNG facilities at Tilbury including the Tilbury Marine Jetty project.


The Project is being proposed to increase the storage and production of LNG to add resilience to FortisBC's gas system (that is, to increase its ability to withstand, manage through, and recover from supply emergencies), improving the security of supply to FortisBC's approximately 1.1 million natural gas customers in B.C. The proposed Project's Liquefaction Capacity can also serve the local marine transportation market should it exceed the capacity of FortisBC's Phase 1 facilities. The proposed Project also introduces opportunities to replace existing infrastructure with current technologies and to align with the Government of B.C.'s CleanBC Plan.

The proposed Project will receive natural gas at the proposed Project Site through established gas line systems. It will connect to the existing and proposed LNG facilities at Tilbury and the Tilbury Marine Jetty. All permanent components of the proposed Project are proposed within the proposed Project Site boundaries.


The proposed Project is reviewable under the current B.C. *Environmental Assessment Act* (B.C. *EAA*) (*Reviewable Projects Regulation*) and under Canada's *Impact Assessment Act* (*IAA*) and *Physical Activities Regulations*. The Environmental Assessment Certificate (EAC) Application completed for the Tilbury Marine Jetty project (submitted in March 2019), is the closest and most recent Environmental Assessment (EA) to the proposed Project Site. Available information from that EA will be reviewed and any relevant information will be incorporated into the proposed Project Application prepared for the current proposed Project.

**FIGURE 1-1
REGIONAL LOCATION
TILBURY PHASE 2
LNG EXPANSION PROJECT**

Proposed Project Components


 Proposed Project Footprint

Base Data


 Existing FortisBC Pipeline

 Highway

 Road

 Resource Road

 Railway

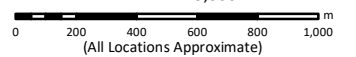
 Watercourse

 Municipality

 Waterbody

Project Site at NTS Grid: 092G03
49° 8' 27.4" N 123° 2' 4.8" W

SCALE: 1:25,000



Jacobs

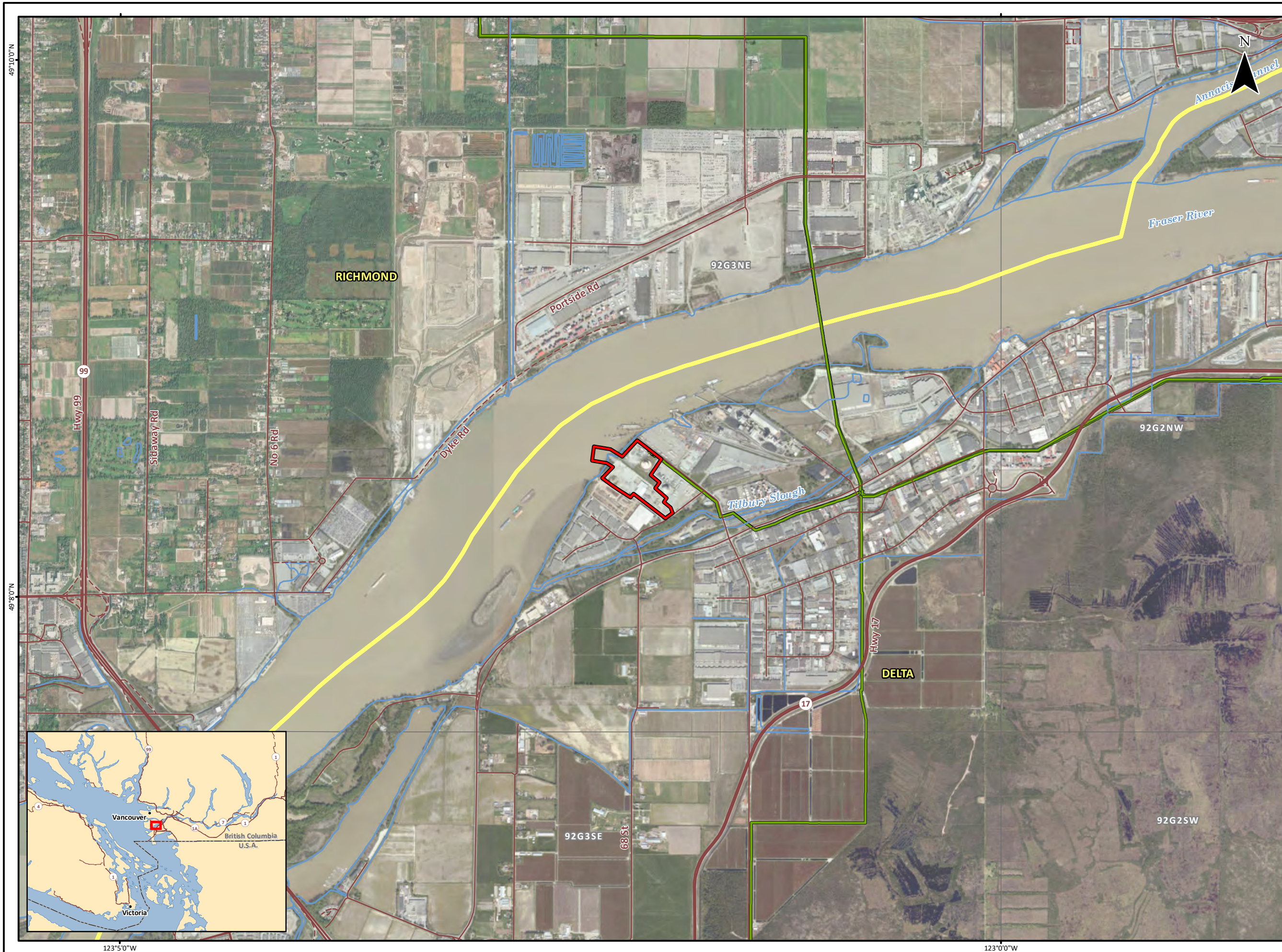
Project Number CE778100

UTM Zone 10 North, NAD 1983.
Existing FortisBC Pipeline: FortisBC 2012; Transportation: BC FLNRD 2012; Regional Districts & Municipalities: BC FLNRD 2017; Political Boundaries: ESRI 2005, USNIMA 2000; Hydrology: BC FLNRD 2011; Imagery Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community.

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

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1.1 Proponent Information

1.1.1 Project Contacts

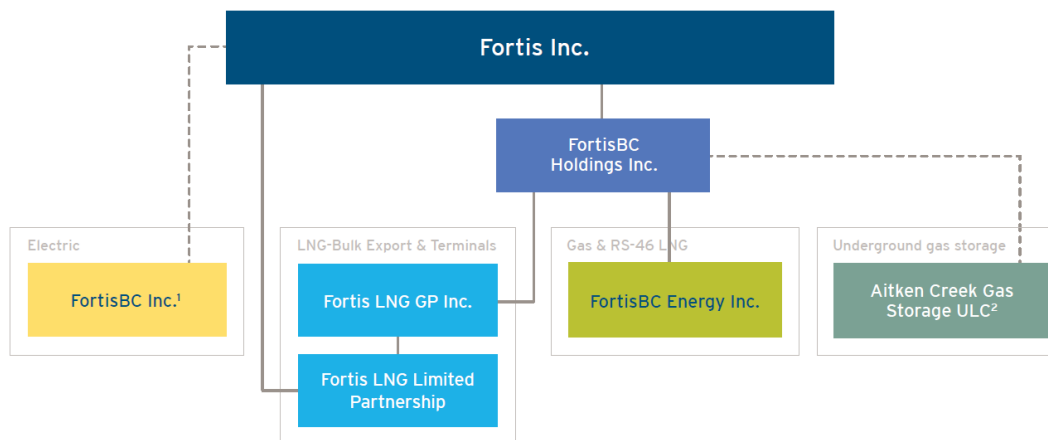
Table 1-1. Project Information and Key Contacts

Project Name	Tilbury Phase 2 LNG Expansion Project
Proponent	FortisBC Holdings Inc. with its regulated natural gas subsidiary FortisBC Energy Inc. (collectively defined as FortisBC)
Proponent Corporate Address	16705 Fraser Highway Surrey, B.C. V4N 0E8
Proponent Website	http://www.fortisbc.com
Project Website	https://talkingenergy.ca/tilburyphase2
Proponent President and CEO	Roger Dall'Antonia
Principal Contacts for the Project Application	Andrew Hamilton Senior Project Manager Tel: 778-222-7983 Email: andrew.hamilton@fortisbc.com

1.1.2 Corporate Overview

Fortis Inc. is a publicly traded Canadian company on both the TSX and the NYSE and the parent company of the proponent. FortisBC Holdings Inc. (FHI) is a B.C.-based company with subsidiary companies involved in natural gas, LNG and alternative energy in B.C. Fortis Inc. is also the parent company of FortisBC Inc. (FBC) an electrical utility operating in B.C. FortisBC Energy Inc. (FEI) is a natural gas utility, owner/operator of the Tilbury LNG facility and subsidiary of FHI. Fortis Inc.'s B.C.-based companies (including FHI, FEI, and FBC) employ more than 2,400 people, working to deliver natural gas, electricity, and renewable energy to more than 1.1 million customers across 135 communities in B.C. FBC owns and operates approximately 7,260 kilometres (km) of electric transmission and distribution power lines and four hydroelectric generating plants. FEI owns and operates approximately 49,000 km of natural gas transmission and distribution pipelines and two LNG production and storage facilities. Aitken Creek Gas Storage ULC owns B.C.'s largest underground natural gas storage facility.

FortisBC corporate structure chart



¹ FortisBC Inc. is a wholly owned subsidiary of FortisBC Pacific Holdings Inc., which is a wholly owned subsidiary of Fortis West Inc. FortisWest Inc. is a wholly owned subsidiary of Fortis Inc.

² Aitken Creek Gas Storage ULC is a wholly owned subsidiary of FortisBC Midstream Inc. (which is a wholly owned subsidiary of FortisBC Holdings Inc.)

1.1.2.1 FortisBC's Role as a Regulated Utility Within the Province

FEI is a regulated utility under the *Utilities Commission Act* and is required to provide and maintain its property and equipment in a condition to enable it to provide a service to the public that the commission considers is in all respects adequate, safe, efficient, just, and reasonable. FortisBC's regulated utilities deliver more energy to B.C. customers than any other company in the Province and can supply up to half of the Province's energy needs on the coldest days of the year. The company's gas and electric systems work in tandem to provide reliable energy service to British Columbians and are designed to provide resiliency to the Province's overall energy system.

1.1.2.2 Commitment to Sustainability

Our focus on sustainability is about prioritizing the health and well-being of our customers, our communities, the environment, and our employees—today, and into the future. To demonstrate our commitment to B.C.'s climate goals, FortisBC developed the Clean Growth Pathway to 2050. The Clean Growth Pathway highlights four action areas that FortisBC can take to help the government achieve its greenhouse gas (GHG) reduction objectives and reduce GHG emissions globally.

- a) Energy efficiency - Pursuing greater energy efficiency through rebates and innovative technology
- b) Renewable Gas - Supporting the growth of renewable gases in our system to 15 percent of our supply
- c) Low-Carbon Transport - Investing in low and zero-carbon vehicles and infrastructure
- d) LNG for Marine Fuelling and Global Markets - Positioning B.C. as a vital domestic and international LNG provider to lower global GHG emissions

Each of these actions have large potential to reduce GHG emissions and increase investment and growth in the Province. They are described further in subsection 1.1.2.2 of the Detailed Project Description (DPD).

Building on its Clean Growth Pathway, FortisBC announced its 30BY30 target in September 2019, committing to reduce its customers' GHG emissions by 30 percent by 2030. FortisBC is currently developing implementation pathways to achieve the target focusing on the four action areas listed above.

1.1.3 The Tilbury LNG Facility

The Tilbury LNG facility has been providing natural gas storage services to customers safely and reliably for 50 years. It contributes to security of supply, reliability, and operational flexibility for FortisBC's natural gas customers. With this in mind, FortisBC has continued to make investments in the Tilbury facility since its inception. The Tilbury LNG facility plays a vital role in the resilience of the natural gas system in B.C., as demonstrated by the Guidehouse study completed in 2020:

"On a very cold day, such as one experienced Jan. 14, 2020 when temperatures in the Lower Mainland approached -10 degrees Celsius, the energy delivered can be double an average winter day and 50% higher than the coldest day in 2019. The peak hour on the gas system was equivalent to over 18,000 MW of electrical generating, transmission and distribution capacity. This is approximately 60% greater than the peak load on the electric system during the same day and 50% larger than the entire hydroelectric generating capacity owned by BC Hydro (11,900 MW)."

Table 1-2 summarizes the Tilbury Existing and Phase 1 Facilities. These are described further in subsection 1.1.2.6 of the DPD.

Detailed Project Description Summary

Table 1-2. Tilbury Existing and Phase 1 Facilities

Phase / Expansion	Description	In-Service Date	Size	Owner	Key Regulator
Tilbury Base Plant (existing)	Original LNG facility	1971	Tank: 28,000 m ³ (0.69 PJ) LNG: 60 t/d	FEI	BCUC/B.C. OGC
Tilbury 1A (existing)	Storage tank, load-out facilities, and liquefaction	2018	Tank: 46,000 m ³ (1.1 PJ) LNG: 700 t/d	FEI	BCUC/B.C. OGC/ Metro Vancouver (emissions)
Tilbury 1B ^a (planned)	Incremental liquefaction, and gas send-out facilities.	2024 - 2025	LNG: up to 2,000 t/d	FEI	BCUC/B.C. OGC/ Metro Vancouver (emissions)
Tilbury 1B - Power line (planned)	Additional power supply from BC Hydro's Arnott substation to Tilbury LNG facility	2023 - 2024	6 km of 230 kV power line	TBD	BCUC (utility service)
CTS Tilbury Gate Station gas transmission expansion (planned)	Upgrade to gas transmission facilities between Tilbury Gate Station and Tilbury LNG facility	2023 - 2024	1 to 3 km, 30-inch natural gas transmission pipe	FEI	BCUC/B.C. OGC

^a If required, upgrades will be made to the existing earth jetty.

Notes:

B.C. OGC = British Columbia Oil and Gas Commission

BCUC = British Columbia Utilities Commission

CTS = Coastal Transmission System

kV = kilovolt(s)

TBD = to be determined (discussions ongoing with BC Hydro)

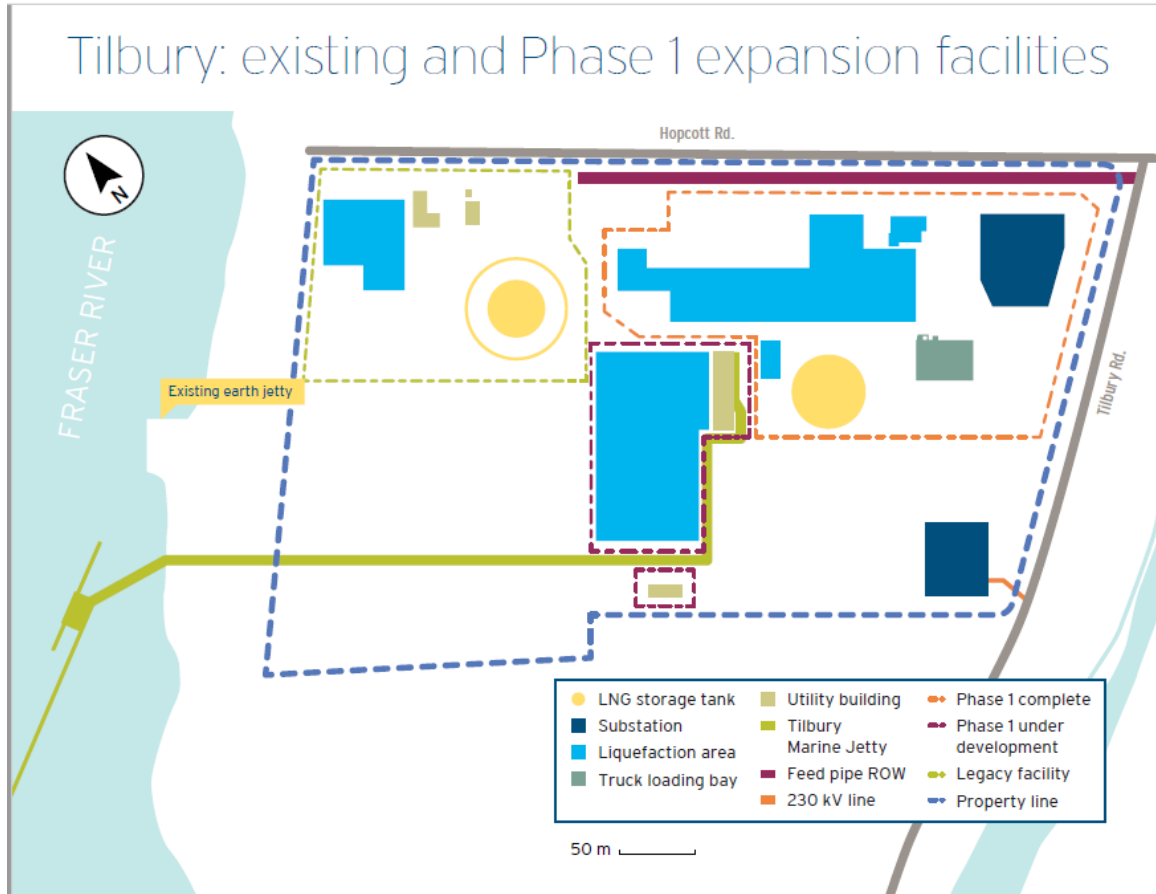


Figure 1-2. Existing and Phase 1 Facilities

Source: FortisBC

1.1.3.1 Existing Permits

The Tilbury LNG facility has an extensive list of existing permits for the operation. A brief list of key permits by regulatory agency is as follows:

- BC Hydro – Joint Operating Order (Plant and Substation); Electric Service Connections
- B.C. OGC – Facility and Pipeline permits
- Delta – Building Permit; Hydrant Permit; Occupancy Permit
- Metro Vancouver – Air Quality Management Bylaw Permit
- B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development (B.C. MFLNRORD) - Heritage Inspection Permit (HIP) Amendment
- Technical Safety BC – Various
- WorkSafe BC – Notice of Project

1.1.3.2 Tilbury Marine Jetty

The EAC Application for the Tilbury Marine Jetty project is currently being reviewed under a separate EA process. The proponent, Tilbury Jetty Limited Partnership (TJLP) a FortisBC affiliate, is proposing to construct a marine jetty next to the proposed Project Site to facilitate the supply of LNG to the marine transportation sector and for global markets. The Tilbury Marine Jetty project has been undergoing a combined Federal and Provincial EA since 2015, under a substituted Provincial process that is led by the B.C. Environmental Assessment Office (B.C. EAO).

Detailed Project Description Summary

The Tilbury Marine Jetty project EA includes assessments for shipping and loading activities that considers the Phase 1 and proposed Project LNG production capacities. The assessment has accounted for any potential impact of vessel traffic capable of carrying up to 3.5 million tonnes per year (MTPA) of LNG processed by the Tilbury facility.

An existing earth jetty adjacent to the FortisBC Tilbury sites (Figures 1-2, 2-1, and 3-1) will be upgraded as part of the Tilbury Marine Jetty project and may be upgraded for the Phase 1 expansion. Table 1-3 summarizes the activities for the Material Offloading Facility (MOF) during the Tilbury Marine Jetty project and the proposed Project. FortisBC is proposing to utilize the upgraded earth jetty, or MOF, to import modules and other pre-fabricated materials needed for the proposed Project. The MOF may require upgrades to meet the needs of the proposed Project, which will be determined as engineering design of the proposed Project facilities continue. The following MOF upgrade scope (Table 1-3) has been included in the event that upgrades are necessary.

Table 1-3. Material Offloading Components Included in the Tilbury Phase 2 LNG Expansion Project

Material Offloading Facility	Environmental Assessment Scope	
	Tilbury Marine Jetty	Tilbury Phase 2 LNG Expansion Project Possible Activities
Capital dredging (not maintenance)	✓	N/A
Riverbed Densification/Ground Improvement	✓	✓
Piling	✓	✓
Shoreline armour (rip rap/stabilization)	✓	✓
Grading (upland)	✓	✓
Dike crossing	✓	N/A
Deck expansion	N/A	✓
Upland works (outside of the riparian area)	✓	✓
Demolition of existing construction dock (inc. deck and piles)	N/A	✓
Scour protection on riverbed	✓	N/A

2. Project Overview

The proposed Project comprises an expansion beyond the existing Phase 1 facilities of a new LNG storage tank with a working volume of 142,400 m³ (3.5 PJ) (Storage Tank) and up to 7,700 t/d of LNG liquefaction (Liquefaction Capacity). The Storage Tank is needed to provide security of public utility service and resilience against possible interruptions of natural gas supply to the region and support future demand. The Liquefaction Capacity will be built in phases of one or more 'liquefaction trains' to meet market demand. The proposed Project, also referred to as Tilbury Phase 2, is detailed in Table 2-1.

The storage capacity and liquefaction capacity have been changed since submission of the Initial Project Description (IPD) due to early-stage engineering and planning work completed in 2020. As a result, FortisBC is able to more accurately state the amount of LNG storage required to meet the need for enhancing the resiliency of its natural gas system and the maximum size of liquefaction has been reduced.

The proposed Project Storage Tank and Liquefaction Capacity trigger a review under Provincial (the *Reviewable Projects Regulation*) and Federal (*IAA – Physical Activities Regulations*) legislation. The Storage Tank is also subject to approval from the BCUC and is the subject of a Certificate of Public Convenience and Necessity (CPCN) application that was filed with the BCUC in December 2020.

Detailed engineering for the proposed Project is expected to begin in 2022. The tank installation will be a priority because it is required to provide security of supply to FortisBC's natural gas customers including homes, businesses, schools, hospitals, government operations, transportation customers, and industries.

Table 2-1. Proposed Tilbury Phase 2 Facilities

Component	Description	In-Service Date	Size	Key Regulator
Storage Tank	LNG storage tank	2027 or earlier	Tank: 142,400 m ³ working capacity (3.5 PJ)	B.C. EAO/IAAC threshold and capacity: 136,000 m ³
Liquefaction Capacity	LNG liquefaction trains	2028+	Up to 7,700 t/d	IAAC threshold and capacity: 3,000 t/d

Notes:

^a Based on energy density of 23.9 gigajoules per cubic metre of LNG

IAAC = Impact Assessment Agency of Canada

The total proposed Project Site LNG storage could be up to 216,000 m³ combining the capacity of the Storage Tank, Base Plant storage tank and Phase 1A storage tank. The Base Plant tank was sized, designed, constructed, and commissioned 50 years ago to meet peak system demand. Should the Base Plant storage tank be removed before Storage Tank operation, the total proposed Project Site LNG working storage will be up to 188,000 m³. Additionally, the Liquefaction Capacity of the proposed Project will increase the production of LNG at the proposed Project Site from less than 3,000 t/d to up to approximately 10,500 t/d, including Base Plant liquefaction.

Figure 2-1 shows the Phase 2 proposed Project facilities and supporting infrastructure (with existing and Phase 1 in background).

Tilbury: proposed Phase 2 expansion

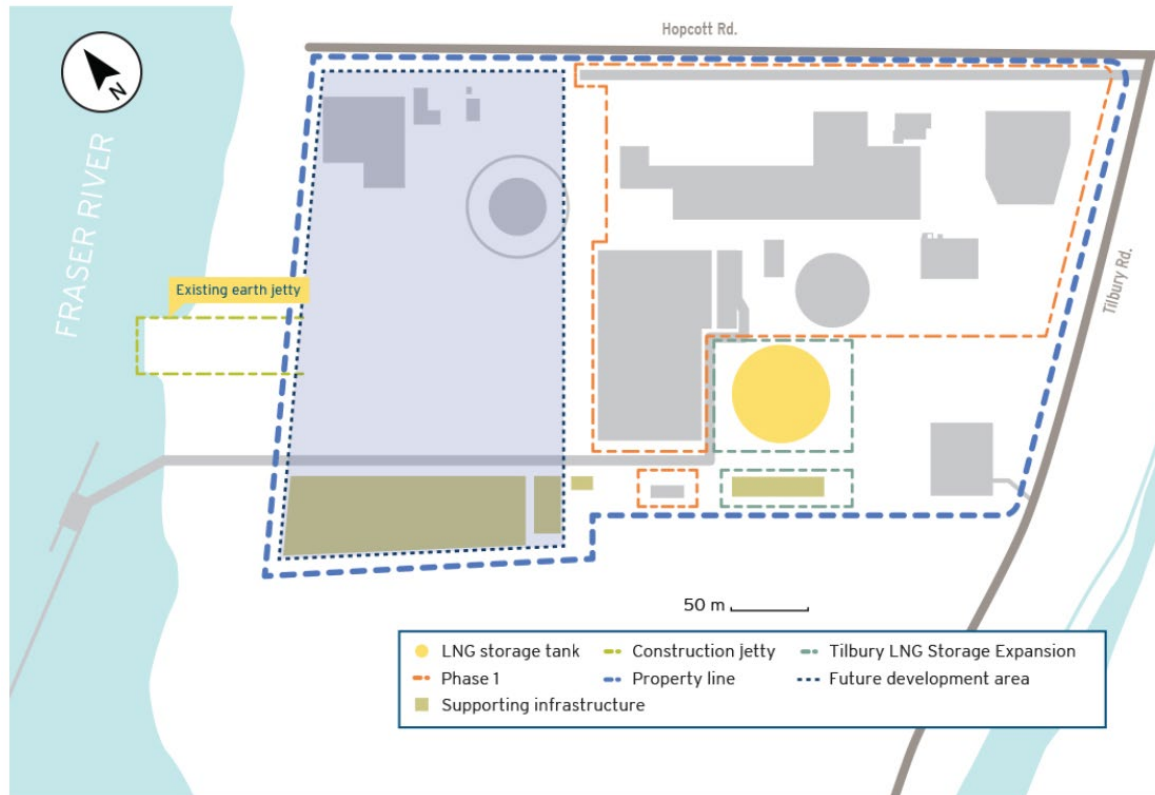


Figure 2-1. Phase 2 Project Facilities

Source: FortisBC

2.1 Project Need and Purpose

The purpose of the Project is to increase the production and storage of LNG to meet the need for energy resilience in the Lower Mainland and to meet the need for LNG as a transportable and storable low-carbon intensity (CI) fuel.

The proposed Project is expected to have a host of benefits, including reliable energy supply, reductions in GHG and air pollution, economic and job opportunities, and tax revenue. Table 2-2 provides a high-level summary of potential benefits, which are detailed throughout the DPD and this DPD Summary in several sections.

Table 2-2. Summary of Project Benefits

Resilient energy supply	Enhances the gas system's capability to withstand unforeseen events and maintain reliable service to Lower Mainland homes and businesses
Greenhouse gas emissions reductions	Could reduce emissions equivalent to removing more than 1.5 million cars off the road or 5 million tonnes of CO ₂ e compared to petroleum-based fuels
Air pollution reductions	LNG can reduce emissions of PM by 99%, SO _x by 99%, and NO _x by 95% compared to petroleum-based fuels
Economic opportunities	About \$1.7 billion could added to B.C.'s GDP during construction, an estimated \$700 million could be added annually during operations
Job opportunities	Construction could create more than 6,000 direct, FTE jobs and 110 FTE jobs during operations
Tax revenue	Construction could generate ~\$300 million in tax revenues for local government and ~\$280 million annually for Federal and Provincial governments during operations

Notes:

CO₂e = carbon dioxide equivalent

FTE = Full-Time Equivalent

GDP = Gross Domestic Product

NO_x = nitrogen oxide

PM = particulate matter

SO_x = sulphur oxide

2.2 Project Components

Table 2-3 provides a description of the components for the construction and operation phases of the proposed Project. Laydown and storage areas will be located either within the proposed Project Site or on previously disturbed areas such as adjacent industrial sites. Shipping of equipment modules will occur along the Fraser River using established shipping lanes and following the requirements of the applicable authorities including Transport Canada. Further details will be provided in the proposed Project Application based on detailed proposed Project planning. Figure 2-2 is an artistic rendering of the proposed Project facilities and supporting infrastructure.

Table 2-3. Project Components

Project Component	Description of Component
<i>Temporary Construction Components</i>	
MOF	<ul style="list-style-type: none"> ▪ Material offloading of pre-fabricated equipment modules will be required with access from the Fraser River. An existing earth jetty that will be upgraded as part of the Tilbury Marine Jetty project and possibly for Phase 1 projects may require additional upgrades to accommodate barge unloading of proposed Project equipment modules during construction. The possible additional upgrades are expected to focus on the topside of the jetty and upland areas, which may include improve grading and load bearing and dike upgrades. ▪ At the time of writing, design features and construction activities have not been specified for the MOF. The proposed upgrades could include the topside of the jetty and upland areas, which may include improving grading, load bearing, and dike upgrades as well as new in-water structures (such as, piles/retaining walls) may be part of the design and are therefore included. The design will include mitigation to reduce effects to the surrounding aquatic systems. The upgrades may be maintained after completion of the proposed Project for future use.

Detailed Project Description Summary

Table 2-3. Project Components

Project Component	Description of Component
Construction Materials Delivery	<ul style="list-style-type: none"> ▪ In addition to the larger equipment module delivery by river, existing roadways and proposed Project Site access points will also be used.
Construction Laydown and Staging	<ul style="list-style-type: none"> ▪ In addition to FortisBC's property, additional off-site laydown and storage space will be required especially during later/overlapping construction phases. Local and preferred options will be identified, assessed, and determined based on the specific requirements.
Construction Infrastructure/Service	<ul style="list-style-type: none"> ▪ Temporary offices, first aid, and security will be required for construction activities. ▪ Existing proposed Project Site service will be used (such as, power or water) where remote power/lighting is required portable generator systems or temporary construction power will be used. Power is provided from BC Hydro's Arnott Substation. Additional upgrades to the power supply are anticipated for Phase 1B including an approximately 6 km, 230 kV power line from the BC Hydro Arnott substation. This upgrade will consider the proposed Project needs such that further upgrades can be minimized or avoided to reduce costs, disturbance, and impacts.
Water Management and Hydro-Testing	<ul style="list-style-type: none"> ▪ Hydro-testing of the LNG tank and certain piping systems will be required. This will involve a large volume of water and discharging of the water. Given the volumes, river water may be utilized which will require filtration/treatment both before using for hydro-testing (to prevent contamination) and post-use to allow returning to the river in a state acceptable to the receiving environment. The source and discharge location for water will be confirmed following additional detailed design and will be presented in the proposed Project Application. In addition, rainwater management systems will be required for the proposed Project Site during construction.
Ground Preparation	<ul style="list-style-type: none"> ▪ Components of the LNG storage tank include ground improvements, foundations.
Operation Components	
LNG Storage	<ul style="list-style-type: none"> ▪ One new full containment storage tank with up to 142,400 m³ (3.5 PJ) of working storage. Components of the LNG storage tank include, double wall (full containment) construction, LNG pumps, boil-off gas management system including gas compressors, insulated piping, access stairways, lighting, instrumentation, controls, and safety systems.
Natural Gas Receiving	<ul style="list-style-type: none"> ▪ Existing FortisBC gas lines and right-of-way will be used to bring natural gas to the proposed Project Site. Additional metering/distribution and control equipment will be needed at the proposed Project Site to distribute gas to specific liquefaction operating units.
Natural Gas Processing and Liquefaction	<ul style="list-style-type: none"> ▪ Expected to be built in trains/phases depending on market demand for a total installed capacity of up to 7,700 t/d. ▪ From the metering/distribution and control equipment natural gas will enter gas pre-treatment to remove components in the natural gas not compatible with the cryogenic liquefaction process. Pre-treatment includes filtration, separators, compression, and adsorption processes. ▪ Combustion of waste streams with energy recovery to provide thermal regeneration of certain pre-treatment processes including continuous thermal oxidation and periodic combustion (flare) of vent/relief gases. ▪ Electric drive refrigerant compressors and air cooling used in the liquefaction process. ▪ Refrigerant unloading, storage, and makeup system. ▪ Instrument air and nitrogen generator systems, firewater system, control and safety system electronics, storm and wastewater handling systems, potable, and de-mineralized water systems. ▪ LNG transfer and boil-off gas management systems. ▪ Fire, safety, security emergency response, and protection systems designed to meet or exceed applicable standards.

Table 2-3. Project Components

Project Component	Description of Component
Supporting Infrastructure	<p>The following facilities will be permanently installed for the lifecycle of the proposed Project and will support the safe operation of the facility:</p> <ul style="list-style-type: none"> ▪ Proposed Project Site administration, control room(s), site grading, roadways, lighting, security, and safety facilities. ▪ Liquid hydrocarbon (HC)/chemical storage and handling facilities (including truck loading). ▪ Connection to BC Hydro or FortisBC power systems. ▪ Additions to potable water, firewater, wastewater, and storm water systems from existing proposed Project Site systems.

**Figure 2-2. Phase 2 Project Facilities Artistic Rendering**

Source: Jacobs Consultancy Canada Inc. (Jacobs)

2.3 Anticipated Project Cost

The current estimated cost of the proposed Project is \$3 to \$3.5 billion. This estimate covers all known construction costs including that for structures, engineering, machinery and equipment, and all professional services associated with the build. The estimated costs will be refined as design and engineering is refined.

Detailed Project Description Summary

Construction activities are expected to span 3 to 6 years. Once completed, annual operating costs are anticipated to be approximately \$250 million. This figure excludes the cost of feed gas.

The expenditures associated with the proposed Project's construction and operations will have a direct, indirect, and induced effect on the local, regional, provincial, and national economies. Estimates of these effects are provided in subsection 10.5.1 of this document.

Decommissioning costs at the end of the facility life are estimated at \$210 million, utilizing the assumption that the land base will remain industrial.

2.4 Infrastructure Requirements

The proposed Project Site has been used for natural gas processing and storage for nearly 50 years and is located in a largely industrial setting adjacent to the Fraser River. Many of the necessary utilities and infrastructure are present or readily expandable. Access roadways are existing and recently upgraded to support trucking traffic in the area and connection to major transportation arteries including the South Fraser Perimeter Road (Highway 17).

Material offloading from the Fraser River of pre-fabricated equipment modules will be required for the proposed Project which would also include marine transportation of vessel/barges along the Fraser River. It is estimated that six to eight Project cargo vessel deliveries will be required during the construction period. The proposed Project cargo vessel deliveries are expected to come from Sand Heads lighthouse at the mouth of the Fraser River along the shipping channel of the South Arm of the Fraser River to the proposed Project Site and will follow the requirements of applicable authorities including Transport Canada. An existing earth jetty on the Fraser River connected to the FortisBC proposed Project Site will be upgraded as part of the proposed Tilbury Marine Jetty project for construction purposes. The proposed Project may require additional upgrades to the MOF for barge unloading of equipment modules to accommodate the weight/size of proposed Project modules.

The proposed Project Site power is available (provided by BC Hydro). Additional power supply is being planned as part of the Phase 1 facilities and will also be sufficient to provide power for the proposed Project.

Construction laydown and storage can be accommodated on the proposed Project Site in the early construction stages; however, nearby construction laydown and storage will be required as the proposed Project Site is built-out over time and available space becomes limited.

2.5 Project Schedule

The preliminary schedule for the Project is provided in Table 2-4.

Table 2-4. Preliminary Project Schedule

Task	Timing
Submitted IPD to B.C. EAO and IAAC to initiate assessment	February 27, 2020
Submit DPD to B.C. EAO	Q3 2021
Submit DPD to IAAC	Q4 2021
Readiness Decision B.C. EAO	Q4 2021
B.C. EAO issues Process Order	Q2 2022
Substitution Decision B.C. EAO and IAAC	Q4 2021/Q1 2022
Draft Application to B.C. EAO under substituted process (requested)	Q2 2022

Table 2-4. Preliminary Project Schedule

Task	Timing
Final Application to B.C. EAO under substituted process	Q4 2022
EAC issued	Q1/Q2 2023
Permitting (synchronous permitting for some permit applications with EA Review)	2022 to 2025
Construction of LNG Storage Tank	2025 or earlier
LNG Storage Tank In-Service	2027 or earlier
Phased Construction of LNG liquefaction facilities	2026+
LNG Liquefaction facilities In-Service	2028
Decommissioning	60+ years

Note:

Phase 1A and Phase 1B In-service dates are provided in Table 1-2. Tilbury Existing and Phase 1 Facilities and are independent of the proposed Project.

2.7 Alternatives to the Project

This section summarizes key components of the proposed Project for which alternatives and options were reviewed, including:

- LNG storage type
- Storage location
- Storage volume
- Liquefaction driver technology
- Cooling technology

The Tilbury Phase 2 LNG Expansion is for the dual purpose of increasing the production and storage of LNG to meet the need for energy resilience in the Lower Mainland and meeting the need for LNG as a transportable and storable low-CI fuel. A summary of alternatives to achieve this dual purpose are provided below. These alternatives consider a number of factors throughout the EA process including feedback collected through ongoing engagement, early engineering and technical feasibility, financial considerations, and potential environmental impact. The alternatives screening and selection process also considered the environmental implications of the technologies and development choices, primarily air emissions.

2.7.1 Gas Utility Resilience Analysis and LNG Storage

As described in the CPCN application to the BCUC, FortisBC has determined that a new LNG storage tank located at the Tilbury LNG site is the only technically and economically feasible option to meet its objective of strengthening the resilience of its Lower Mainland gas system (BCUC 2021). Further analysis determined that a tank of 3 billion cubic feet (BCF) (142,400 m³ capacity) is the most suitable size to provide resiliency and allow flexibility to meet future demand growth. The system analysis examined three key elements of system resilience: pipeline diversity, storage, and load management (Figure 2-3).

- 1) **Load management:** The ability to manage load during a supply disruption allows a utility to perform a controlled system shutdown and maintain supply to as many customers as possible.
- 2) **Diverse pipelines and supply:** Increased access to regional pipelines improves FortisBC's ability to dependably collect and distribute gas to its customers.

- 3) **Ample storage:** Access to storage within a utility’s own system improves its capability to manage expected or unexpected changes in supply for a period of time. Underground storage and LNG are two common means of providing gas system storage.

The analysis identified and assessed the options available to FortisBC to ensure system resiliency to mitigate future risks of gas supply disruptions in the region, which in turn reduce the risk of significant social, economic, and public utility customer impacts.

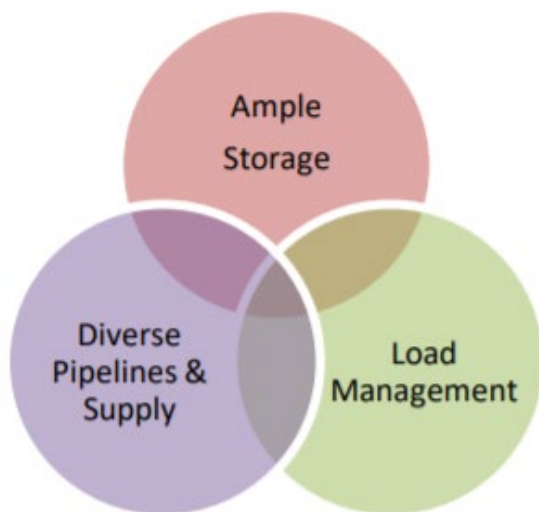


Figure 2-3. Key Elements of a Resilient Gas System

Source: FortisBC CPCN Application

The outcome of the system resilience analysis was that system resilience is best achieved through the addition of LNG storage. Further analysis also determined that “on system” storage in proximity to the end user was the optimal solution. The three alternatives were assessed as follows in Table 2-5.

Table 2-5. System Resilience Alternatives Assessed

Option	Description	Recommended	Comments
1	Load Management	Yes, but not as an alternative to ample storage	Load management complements resilience by reducing consumption when supply is constrained, but without additional supply many customers would be without service.
2	Diverse Pipelines	Yes, but not as an alternative to ample storage	Expansion of existing regional pipelines would add little resiliency for FortisBC as there would still be a single point of supply. New regional pipelines would add resiliency by diversifying supply; however, storage would still be required to ensure resiliency if there is a failure of one of the pipeline systems.
3	Ample Storage	Yes	On-system LNG storage provides additional gas close to the customer, would be downstream of failure points, with opportunity to develop on a brownfield site and limit the proposed Project Footprint.

The analysis determined achieving system resilience will require the addition of LNG storage. Further analysis determined that “on system” storage in proximity to the end user (that is, as far downstream from potential failure points as geographically possible) was the optimal solution.

2.8 Alternative Means of Carrying Out the Project

FortisBC is always looking for opportunities to help customers save energy and money, while supporting the Province's climate action goals to help ensure a cleaner, healthier tomorrow. During Early Engagement, we received feedback regarding the use of best available technologies (BATs) and emerging technologies to maximize GHG reductions and energy efficiency.

Alternatives for various components of the proposed Project were assessed to determine the potential effects, risks and uncertainties:

- **Storage type and location:** With options limited due to the existing infrastructure and footprint, the preferred storage type and location is replacing the Base Plant facilities with new, larger on-system storage and regasification at Tilbury. This method replaces the undersized base plant that is reaching the end of its useful life with "right sized" efficient infrastructure.
- **Storage volume:** Two alternatives were assessed, 3 BCF of Storage being the preferred option as it accommodates some future load growth, provides operational flexibility, and is more effective use of capital because of economies scale, in comparison to 2 BCF of Storage.
- **Liquefaction driver technology:** Gas fired compression and electric drive methods were both considered for the liquefaction trains. The screening assessment determined that electric drive is the preferred alternative because of the proven and reliable technology, and no direct GHG, NO_x, or SO_x emissions.
- **Cooling technology:** Air and water cooling technology were considered, with air cooling determined to be the preferred method. Air cooling is routinely used for LNG production with well understood lifecycle economics and has minimal environmental effects due to the lack of emissions.
- **Flare technology:** Four types of flare technologies were considered, including multi-point ground flare, totally enclosed ground flare (TEGF), elevated flare, and combined hybrid flare technologies. The TEGF has low visibility and spatial requirements and is also beneficial from an emissions perspective. Presently the TEGF or a hybrid of the TEGF and elevated flare are the preferred options. Flare technology selection will be determined through further engineering and design, air quality modelling, and engagement.
- **Alternative construction methods:** Preliminary construction planning has identified modularized liquefaction train construction at an off-site location as a preferred alternative over constructing the process equipment on-site. Material transport options will consider numerous factors such as safety, construction logistics, road and waterway traffic, and emissions.

3. Project Location

The proposed Project Site is located on private property owned by FortisBC for the existing Tilbury LNG facility on Tilbury Island, within the Tilbury Industrial Park, adjacent to the Fraser River in Delta (Figure 3-2). The legal description of the Tilbury site is Lot 1 District Lot 135 Group 2 New Westminster District Plan EPP28232 except Plan EPP 36476. PID: 029-263-301.

FortisBC currently operates an existing LNG facility, which occupies the northern portion of the 7651 Hopcott property (closest to the Fraser River). Coordinates of the approximate centre of the proposed Project Site are 49 08'28"N and 123 01' 57"W and elevation is approximately 1 metre above sea level (masl). The MOF built as part of Phase 1B may be used during construction of the proposed Project. The MOF is located along the Fraser River adjacent to the FortisBC property (Water Licence No 2005596, Diversion ID PD191626, WELL DRILL/TRANSPRT MGMT).

Neighbouring properties are mainly used for industrial purposes with the nearest resident being approximately 450 metres (m) to the southwest of the proposed Project Site, although the closest residential area is approximately 3 km away. Other nearby businesses include the Riverside Funeral Home and Crematorium and the Delta Community Animal Shelter. Public access to the proposed Project Site is limited, although there is public use of the dike to the north of the property along the Fraser River. There is no land-based recreational access to the proposed Project Site.



Figure 3-1. View of Tilbury site with Phase 1A in Foreground, and Base Plant in Background

The proposed Project is located in the Traditional Territory of the Coast Salish Peoples. The proposed Project Area includes overlapping Traditional Territories of over 35 Indigenous nations within the broader Coast Salish Traditional Territory (Figures 1A to 3B in Appendix A). Refer to Section 11 for a complete list of Indigenous nations with established or asserted Traditional Territories overlapping the proposed Project Footprint.

Proposed Project Components

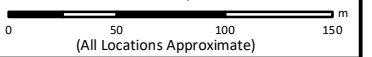
- Proposed Project Footprint
- Material Offloading Facility

Base Data

- Existing FortisBC Natural Gas Pipeline
- Road
- Railway
- Parcel Boundary
- Municipality
- Waterbody

Project Site at NTS Grid: 092G03
49° 8' 27.4" N 123° 2' 4.8" W

SCALE: 1:3,500



Jacobs

Project Number CE778100

UTM Zone 10 North, NAD 1983.
Proposed Marine Jetty: Ausenco March 2019; Existing Pipeline: FortisBC 2012; Transportation: BC FLNRD 2012; Regional Districts & Municipalities: BC FLNRD, 2017; Political Boundaries: ESRI 2005, USNIMA 2000; Hydrology: BC FLNRD 2011; Imagery Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

Mapped By: SL

Checked By: TW



4. Spatial Boundaries

Table 4-1 has been updated to include the spatial boundaries for key Valued Components (VCs). Selected VCs and their spatial boundaries were determined by subject matter experts and will be further refined during the Process Planning Phase.

Table 4-1. Preliminary Spatial Boundaries

Valued Component	LAA Preliminary Boundary and Rationale	RAA Preliminary Boundary and Rationale
Air Quality	The LAA for air quality is a 20 km by 20 km domain centered on the proposed Project.	The RAA for air quality covers a 30 km by 30 km area centered on the proposed Project, and extends to the coast on the west, the U.S border to the south, Vancouver and Burnaby to the north, and Surrey to the east.
Acoustic	The Acoustic LAA will be defined as a 1.5 km wide zone around the perimeter of the proposed Project Area. The historical village of Tl'uq̓tinus as well as portions of Delta and Richmond fall within this study area.	The Acoustic RAA will be defined as a 3 km wide zone around the perimeter of the proposed Project Area.
Surface Water	The LAA for surface water encompasses the area 100 m upstream and 200 m downstream of the proposed Project Footprint. The LAA also includes 100 m upstream and 200 m downstream within the Tilbury Slough from the culvert outlet that drains stormwater from the proposed Project Site.	The RAA for surface water encompasses the Fraser River for 500 m upstream and 1,000 m downstream of the proposed Project Footprint. The RAA also includes Tilbury Slough for 500 m upstream and 1,000 m downstream of the culvert outlet that drains stormwater from the proposed Project Site.
Groundwater	The LAA for groundwater encompasses the terrestrial footprint of the proposed Project Site.	The RAA for groundwater encompasses the mapped extent of the aquifer that is within the proposed Project Site.
Soil	The proposed Project Footprint plus a 100 m buffer around the proposed Project Footprint and a 50 m buffer around truck routes between the highway and the proposed Project Site.	The Soil RAA is the same as the Soil LAA.
Vegetation	The LAA for vegetation will consist of the proposed Project Footprint plus a 100 m buffer around the proposed Project Footprint and includes both aquatic and terrestrial habitat. The Vegetation LAA also includes 100 m upstream and 200 m downstream within the Tilbury Slough from the culvert outlet that drains stormwater from the proposed Project Site.	The RAA for vegetation will consist of a 1 km buffer surrounding the proposed Project Footprint and includes both aquatic and terrestrial habitat.
Wildlife and Wildlife Habitat	The LAA for wildlife and wildlife habitat consists of the proposed Project Footprint plus a 300 m buffer around the proposed Project Footprint and includes both aquatic and terrestrial habitat.	The RAA for wildlife and wildlife habitat consists of the proposed Project Footprint and the Wildlife and Wildlife Habitat LAA and includes both aquatic and terrestrial habitat. The Wildlife and Wildlife Habitat LAA also encompasses the Fraser River for 300 m upstream and 2 km downstream of the proposed Project Footprint, including a 50 m buffer from the high-water mark on either side.
Fish and Fish Habitat	The LAA for fish and fish habitat encompasses the Fraser River for 100 m upstream and 200 m downstream of the proposed Project Footprint. The Fish and Fish Habitat LAA also includes Tilbury Slough for 100 m upstream and 200 m downstream of the culvert outlet that drains stormwater from the proposed Project Site.	The RAA for fish and fish habitat encompasses the Fraser River for 500 m upstream and 1,000 m downstream of the proposed Project Footprint. The RAA also includes Tilbury Slough for 500 m upstream and 1000 m downstream of the culvert outlet that drains stormwater from the proposed Project Site.

Table 4-1. Preliminary Spatial Boundaries

Valued Component	LAA Preliminary Boundary and Rationale	RAA Preliminary Boundary and Rationale
Employment and Economy	The LAA for employment and economy is Metro Vancouver.	The Employment and Economy RAA is the same as the Employment and Economy LAA.
Land and Resource Use	<p>The LAA for land and resource use will include Delta, which comprises three urban communities: Ladner (administrative centre), Tsawwassen, and North Delta.</p> <p>The Land and Resource Use LAA will include all lands with a potential viewpoint of proposed Project components for potential effects to views. This includes the area within the foreground (less than 1 km from the proposed Project boundary), and middle ground (1 to 5 km from the proposed Project boundary).</p> <p>Where the land and resource use has the potential to be affected by changes to the Acoustic VC, the LAA for the Acoustics VC may be included in the land and resource use assessment.</p>	The Land and Resource Use RAA will include Metro Vancouver.
Infrastructure and Services	<p>Delta, including Ladner (administrative centre), Tsawwassen and North Delta.</p> <p>Infrastructure and Services LAA boundaries may be adjusted to consider other areas beyond Delta where they have the potential to be affected by infrastructure and service needs directly related to the proposed Project (such as, dikes, landfills, emergency response).</p> <p>The Infrastructure and Services LAA will include consideration of flood protection infrastructure along the Fraser River in an area that has the potential to be affected by use of the Fraser River for construction of the proposed Project. This would include flood protection infrastructure along relevant portions of the Fraser River shoreline.</p>	The Infrastructure and Services RAA will include Metro Vancouver.
Archaeological and Heritage Resources	The LAA for archaeological and heritage resources includes the area of ground disturbance for the proposed Project plus a 100 m buffer around the proposed Project Site.	The RAA for the archaeological and heritage resources will include the Archaeological and Heritage Resources LAA and the South Arm of the Fraser River from the proposed Project Site downstream to Sand Heads and upstream to Annacis Island and extending 1 km inland from the north and south shores of the river.
Culture	The LAA for culture will include Delta, which comprises three urban communities: Ladner (administrative centre), Tsawwassen, and North Delta. The LAA will include the boundaries of the VCs that interact with Indigenous interests, including: wildlife and wildlife habitat, vegetation, air quality, acoustic environment, surface water, infrastructure and services, land and resource use, fish and fish habitat, and archaeological and heritage resources.	The Culture RAA will include Metro Vancouver. The Culture RAA will include the boundaries of the VCs that interact with Indigenous interests including: wildlife and wildlife habitat, vegetation, air quality, acoustic environment, surface water, infrastructure and services, land and resource use, fish and fish habitat, and archaeological and heritage resources.

Table 4-1. Preliminary Spatial Boundaries

Valued Component	LAA Preliminary Boundary and Rationale	RAA Preliminary Boundary and Rationale
Human Health	<p>Air Quality: The LAA for the assessment of potential health effects to humans from potential changes to air quality will be the same as that for the Air Quality VC.</p> <p>Country Foods: The LAA for health risks related to the quality and quantity of country foods will be the same as the LAA for the Land and Resource Use VC and the LAAs for VCs for potentially harvested species (that is, Vegetation VC, Wildlife and Wildlife Habitat VC, and Fish and Fish Habitat VC).</p> <p>Soil, Sediment, Groundwater, Surface Water: Health risks related to soil, sediment quality, and groundwater contaminants will be assessed in the proposed Project Footprint. The LAA for health risks related to surface water quality will be determined using the Surface Water LAA and its areas of overlap with land uses and activities.</p> <p>Social Determinants of Health: Spatial boundaries for assessment of changes to social determinants of health, including well-being, will refer to the spatial boundaries relevant to linked VCs such as Employment and Economy VC (due to the potential link between incomes and health/well-being), and Infrastructure and Services VC (due to the potential link between access to services and health/well-being). For health effects related to changes in the acoustic environment, the LAA is the footprint plus 1.5 km.</p>	<p>Air Quality: The RAA for the assessment of potential health risks to humans from potential changes to air quality will be the same as that for the Air Quality VC.</p> <p>Country Foods: The RAA for health risks related to quality and quantity of country foods will be the same as the RAA for the Land and Resource Use VC and the RAAs for VCs for potentially harvested species (that is, Vegetation VC, Wildlife and Wildlife Habitat VC, and Fish and Fish Habitat VC).</p> <p>Soil, Sediment, Groundwater, Surface Water: Health risks related to soil, sediment quality, and groundwater contaminants will be assessed in the proposed Project Footprint. The RAA for assessing health risks related to water quality will be determined using the Surface Water RAA and its areas of overlap with land uses and activities.</p> <p>Social Determinants of Health: Federal guidance on assessment of effects to health includes factors such as social determinants of health, including well-being. Spatial boundaries for assessment of changes to social determinants of health, including well-being, will refer to the spatial boundaries relevant to linked VCs such as Employment and Economy VC (due to the potential link between incomes and health/well-being), and Infrastructure and Services VC (due to the potential link between access to services and health/well-being). For health effects related to the acoustic environment, the RAA is the footprint plus 5 km (compared to footprint plus 3 km in the Acoustic VC). The RAA for the health component of acoustics was expanded to include the possibility of nearby sensitive receptors that may be affected. The RAA for assessing health risks related to water quality will be determined using the Surface Water RAA and its areas of overlap with land uses and activities.</p>
Indigenous Nation-identified VC	No Indigenous nation-specific VCs have been identified to-date. The LAA for VCs requested by Indigenous nations will be defined if Indigenous nation VCs are identified.	No Indigenous nation-specific VCs have been identified to-date. The RAA for VCs requested by Indigenous nations will be defined if Indigenous nation VCs are identified.

Notes:

LAA = Local Assessment Area

m = metre(s)

RAA = Regional Assessment Area

Richmond = City of Richmond

5. Land and Water Use

The proposed Project Site is located within the local government boundary of Delta on Tilbury Island on the southern shoreline of the South Arm of the Fraser River (Figure 1-1). The proposed Project Site is located on easements within the FortisBC property, located at 7651 Hopcott Road, and occupies an area intended for Industrial Land Use, and will be designated as I7 (Special Industrial) which allows for manufacturing, processing, finishing, and storage of natural gas.

There is no land-based recreational access to the proposed Project Site and is not within the boundaries of any provincial parks, conservation areas, Agricultural Land Reserves (ALRs), or ecological reserves. The mainland area to the south of Tilbury Island is primarily a combination of agricultural and industrial lands within Delta (Delta 2019). Apart from agricultural lands, other significant land uses include Burns Bog, a critical Ecological Conservancy Area, single-family residential uses, parks, regional parks and open area, and industry and port/terminal use.

The Fraser River and surrounding area are significant to Indigenous nations within the territory. Since time immemorial, Indigenous Peoples have established fishing camps, settlements, hunting grounds, trading sites, spiritual sites and other Traditional Use areas, on the banks of the Fraser River, and in the upland areas in Tsawwassen and North Delta. Archaeological sites in the area are amongst the oldest known in the Province. Indigenous Peoples continue to use and occupy the Fraser River and surrounding area for these purposes.

The Fraser River is an important transportation route and is used by numerous industrial facilities and cargo terminals that handle logs, steel, machinery, and general industrial cargo. The Fraser River is also used for Indigenous, commercial, and recreational purposes, including boating, fishing, tourism, and marine transportation. For example, the Fraser River is host to numerous activities for locals and tourists alike, including boat cruises, estuary ecotours, guided fishing trips, and kayak lessons (Tourism Vancouver 2020). Two recreational rowing and canoeing clubs are available for locals to join (Delta Outrigger Canoe Club 2020; Delta Deas Rowing Club 2020).

Effects to the use and availability of the Fraser River are expected to be negligible as the increased river traffic and construction activities associated with the upgraded MOF are expected to represent a minimal incremental increase to existing river traffic. It is estimated that six to eight Project cargo vessel deliveries will be required during the 3-year construction period. Some additional deliveries may be required for aggregate and other construction material delivery. Marine transportation during construction including delivery of equipment modules along the Fraser River would occur along established shipping lanes and following the requirements of the applicable authorities including Transport Canada. Existing navigation channels, safety requirements, and communication with other river users are expected to effectively manage potential effects to navigation safety and river use by recreational and commercial users.

Potential effects on the rights of Indigenous nations, including current use of lands and resources for traditional purposes resulting from proposed Project activities (such as, increased marine transportation during construction) are addressed in subsection 11.4 of this document.

FIGURE 5-1
SURROUNDING LAND USE & NEIGHBOURING COMMUNITIES
TILBURY PHASE 2
LNG EXPANSION PROJECT

Proposed Project Component

Proposed Project Footprint

Base Data

- Existing FortisBC Pipeline
- Highway
- Paved Road
- Secondary Road
- CAN Railway
- Watercourse
- Municipality
- Waterbody

Metro 2040 Land Designations

- General Urban
- Industrial
- Mixed Employment
- Conservation and Recreation
- Agricultural

Project Site at NTS Grid: 092G03
 49° 8' 27.4" N 123° 2' 4.8" W

SCALE: 1:50,000

 (All Locations Approximate)

Jacobs

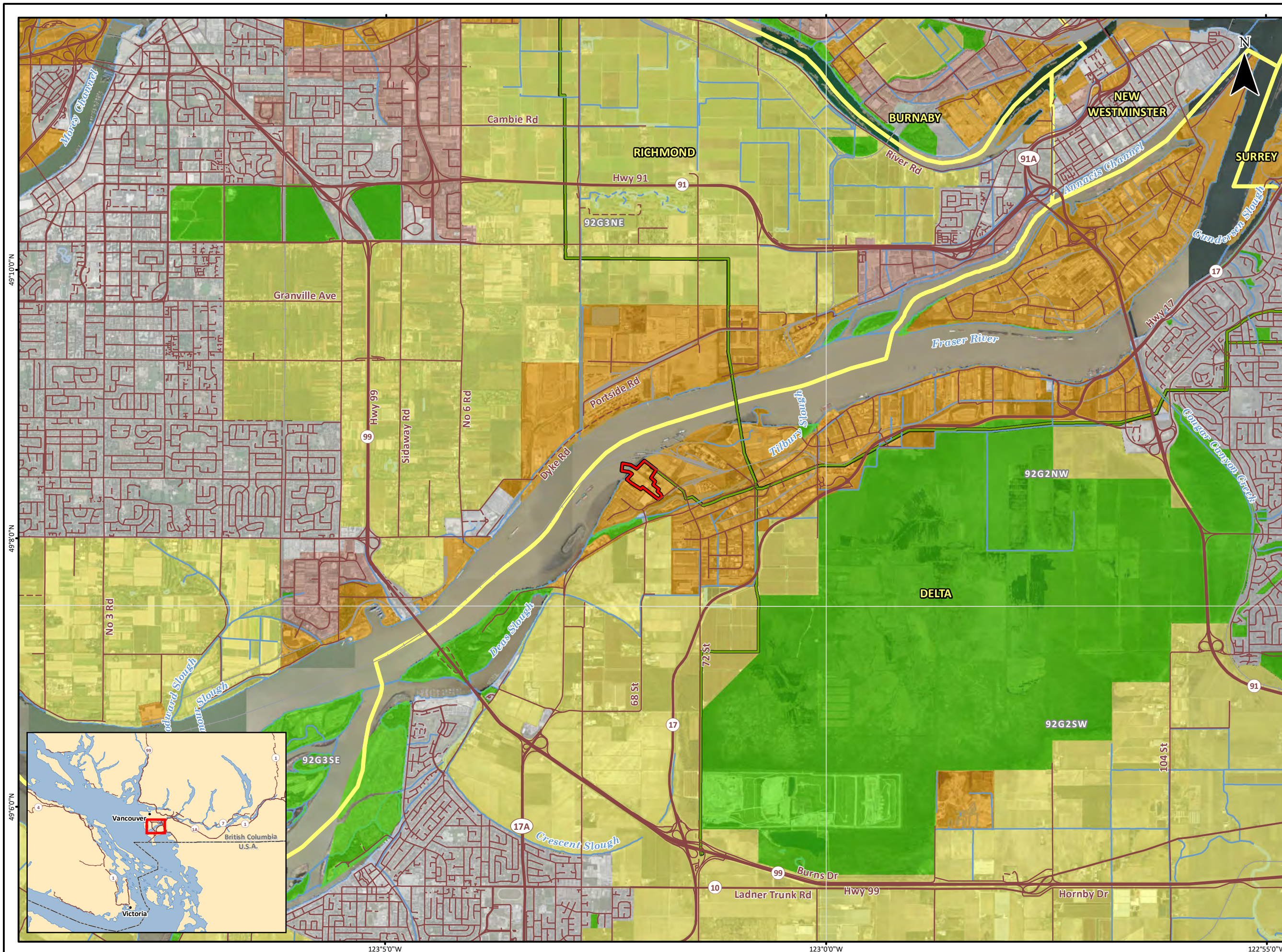
Project Number CE778100

UTM Zone 10 North, NAD 1983.
 Metro 2040 Land Use Designation: Metro Vancouver, 2018;
 Existing FortisBC Pipeline: FortisBC 2012; Transportation: BC
 FLNRORD 2012; Regional Districts & Municipalities: BC FLNRORD.
 2017; Political Boundaries: ESRI 2005, USNIMA 2000; Hydrology: BC
 FLNRORD 2011; Imagery Service Layer Credits: Source: Esri, Maxar,
 GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,
 AeroGRID, IGN, and the GIS User Community.

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of the data are advised that errors in the data may be present.

Mapped By: SL

Checked By: TW



6. Emissions, Discharges, and Waste

Activities associated with all phases of the proposed Project have potential to produce emissions, discharges and waste, including atmospheric emissions, as well as water and solid waste discharges.

The following is a summary of proposed Project-related emissions, discharges, and waste. These may include but are not limited to:

- light, noise, and vibration emissions
- emissions of atmospheric contaminants and GHGs
- silt and soil from roads, laydown, and soil storage areas
- sanitary waste
- construction water (such as, storage tank and liquefaction train hydrotest water, equipment and facilities wash down water, along with dust suppression water runoff)
- storm water runoff
- firewater runoff in the event of an emergency
- solid wastes (such as, household and industrial wastes associated with facility operations)
- hazardous waste (such as, used motor and hydraulic oils, contaminated filters, used chemical cleaning fluids, and paints)

Subsection 10.2.2 of this document provides an estimate of annual net GHG emissions by proposed Project phase.

7. Construction, Operations, and Decommissioning Phases

7.1 Project Construction and Operations

Table 7-1 outlines the proposed Project activities for site preparation, construction, and operations. Most proposed Project-related activities will be conducted within the property boundaries of the proposed Project Site. Laydown and storage areas will be located either within the proposed Project Site or on previously disturbed areas such as adjacent industrial sites or remote storage facilities. If upgrades to the MOF are required, activities will occur adjacent to the proposed Project Site. Shipping of some equipment modules will occur along the Fraser River using established shipping lanes and following the requirements of the applicable authorities including Transport Canada.

Table 7-1. Description of Project Activities

Site Preparation
<ul style="list-style-type: none"> ▪ Site planning by phase ▪ Mobilization of construction equipment, temporary offices, and materials to the site by truck or river ▪ Clearing, filling, and grading of the previously developed, brownfield site ▪ Provide construction utilities including power, water, phone, offices and internet services ▪ Relocation/improvements to storm water and erosion and sediment control measures ▪ Ground preparation, geotechnical, and archaeological assessments and work permitted for the site to improve load bearing of the soil (could include pre-loading and geotechnical ground stabilization)
Construction
<ul style="list-style-type: none"> ▪ Ground improvements and civil works including foundations and structures ▪ Construction of electrical step-down transformers from 230 kV substation, including associated on-site proposed Project power lines ▪ Construction of LNG storage tank. Installation of related piping/instrumentation and controls/electrical equipment, in-tank pumps, and boil-off compressors. Piping connections to existing plant and to the Tilbury Pacific LNG Marine Jetty ▪ Construction of the gas supply interface and pre-treatment systems ▪ Upgrading/reinforcing the MOF, if required ▪ Transporting equipment modules up the Fraser River, mooring at the MOF, and offloading at site. It is estimated that six to eight Project cargo vessel deliveries will be required during the 3 to 6 year construction period. Some additional deliveries may be required for aggregate and other construction material delivery. The Project cargo vessel deliverables are expected to come from Sand Heads lighthouse at the mouth of the Fraser River along the shipping channel of the South Arm of the Fraser River to the proposed Project Site ▪ Transporting, setting, and final assembly construction of liquefaction train modules ▪ Construction of thermal oxidizer/flare for combustion of waste and emergency vent streams; before the flares are built at site, the relief streams from pressure safety valves/blowdown valves will be vented to atmosphere (that is, to a safe location) during upset and emergency scenarios ▪ Connections of liquefaction trains to LNG tank, power, utilities, safety, and control systems ▪ Construction of administration/control, maintenance, utility, and safety facilities ▪ Commissioning of phased equipment installation including initial purging, cool-down, and fill of LNG lines and tank ▪ Decommissioning of temporary infrastructure such as construction offices, warehousing, temporary power, fuel depots, and batch plants ▪ Site clean-up, installation of security
Operation
<ul style="list-style-type: none"> ▪ Receipt of natural gas via piping from FortisBC natural gas metering station ▪ Pre-treatment of natural gas to remove components of gas line natural gas not compatible with liquefaction process ▪ Storage of refrigerants ▪ Liquefaction of the natural gas (using electric compression drives and air cooling) ▪ Transfer LNG and LNG storage ▪ LNG boil-off gas management ▪ Transfer of stored LNG to distribution (existing regasification/send-out, LNG marine jetty) ▪ Control, inspection, and maintenance of proposed Project components

7.2 Project Decommissioning and Reclamation

The proposed Project Site is zoned for industrial use; therefore, at the end of the proposed Project's operational life (40 to 60 years) the proposed Project facilities may be decommissioned in accordance with regulations applicable at that time, including B.C. OGC permitting requirements, and in consideration of preferred land uses at that time.

Decommissioning activities may include:

- De-energizing, decommissioning purging, and dismantling of LNG facilities
- Repurposing and recycling of materials and equipment
- Reclamation of the proposed Project Site for alternate use

The proposed Project Site would then be prepared for its next use. The schedule for decommissioning activities will be developed during Front-End Engineering Design (FEED).

8. Regulatory Context

The following sections describe the legislative and regulatory context for the proposed Project including the B.C. *EAA*, the Federal *IAA*, and other anticipated permits and approvals. The proposed Project considers international agreements such as the Pacific Coast Collaborative - Pacific Coast Action Plan on Climate and Energy and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). The proposed Project also introduces opportunities to upgrade existing infrastructure to current design standards and technologies and to align with new environmental policies (such as, the Government of B.C.'s CleanBC Plan).

8.1 British Columbia *Environmental Assessment Act*

The proposed Project will trigger a Provincial EA pursuant to the B.C. *EAA* as it exceeds the trigger for assessment as follows:

*"the modification results in an increase in the capability of the Project to store one or more energy resources, other than electricity, by a quantity that can yield by combustion ≥ 3 PJ of energy or, for liquefied natural gas, increase by $\geq 136\,000\text{ m}^3$." (Part 4, Table 8, Column 3, Criteria (1)(b) *Reviewable Projects Regulation*) (Government of B.C. 2018)*

The proposed Project includes adding working storage of up to $142,400\text{ m}^3$ (3.5 PJ) which would increase the total storage at the proposed Project Site to $216,400\text{ m}^3$ (5.3 PJ) with the existing Base Plant Tilbury tank remaining which exceeds the $136,000\text{ m}^3$.

FortisBC has met with the B.C. EAO to provide an overview of the proposed Project and initiated discussions related to EA process and timing and consultation. The IPD was submitted to the B.C. EAO on February 11, 2020. The IPD was accepted and approved by the B.C. EAO on February 27, 2020 pursuant to Section 13(3)(a) of the B.C. *EAA*.

8.2 Federal *Impact Assessment Act*

The proposed Project will also be subject to the Federal Impact Assessment (IA) process under the *IAA*. Section 38(d) of the *Physical Activities Regulations* includes;

"38 The expansion of one of the following: (d) an existing facility for the liquefaction, storage or regasification of liquefied natural gas, if the expansion would result in an increase in the liquefied natural gas processing or storage capacity of 50% or more and a total liquefied natural gas processing capacity of 3 000 t/day or more or a total liquefied natural gas storage capacity of $136\,000\text{ m}^3$ or more, as the case may be." (Government of Canada 2019)

FortisBC has met with the IAAC to provide an overview of the proposed Project and initiated discussions related to IA process and timing and consultation. The IPD was submitted to the IAAC on February 11, 2020.

The proposed Project includes adding liquefaction of up to 7,700 t/d for a total facility LNG production of up to 10,460 t/d. The proposed Project represents an LNG processing increase of more than 50 percent and total LNG processing capacity exceeding 3,000 t/d.

Detailed Project Description Summary

The proposed Project includes adding working LNG storage of up to 142,400 m³ (3.5 PJ) for a total facility LNG storage of up to 216,400 m³ (5.5 PJ). The proposed Project represents an increase in LNG storage capacity of more than 50 percent and total LNG storage capacity of more than 136,000 m³. Therefore, the proposed Project would be considered a physical activity pursuant to the *Physical Activities Regulations* and is thereby reviewable under the *IAA*.

Given that both the Federal and Provincial EA processes are triggered, FortisBC submitted a request for substitution in March 2020. The Province will request the Federal Minister of Environment and Climate Change to approve the substitution of the Provincial EA process for the Federal IA process. If substitution is approved for the proposed Project, it is expected that the B.C. EAO will conduct the proposed Project Application in accordance with the Conditions set out in the Substitution Decision, and at the end of the assessment process the B.C. EAO will provide its report to both the Provincial and Federal Ministers for their consideration.

Refer to subsection 8.3 of the DPD for a list of other permits and approvals that may be required for the proposed Project.

9. Federal Involvement – Financial Support, Lands, and Legislative Requirements

There are no Federal lands or reserves that will be used for the purpose of carrying out the proposed Project. The proposed Project will not require Federal financial support and is located in an area that has not been the subject of federal and regional environmental studies. During construction, equipment and supplies may be delivered via the Fraser River to the proposed Project Site. The portion of the Fraser River next to the proposed Project Site is within Provincial jurisdiction. The closest Federal lands to the proposed Project Site are on the southern tip of Tilbury Island. The parcels are narrow strips of land in the riparian area of the Fraser River and a side channel. The closest parcel is 150 m to the southwest and encompasses a portion of the Tilbury Island dike, which is used as a public walking trail and directly across the Fraser River from the proposed Project Site (approximately 900 m north) is a complex of Federally-owned industrial parcels on Lulu Island. The businesses directly adjacent to the river include Lulu Island Terminal, Coast 2000 Terminals, and Westran Portside Terminal. Potential Federal permits and approvals are listed in subsection 8.2 of this document and subsection 8.3 of the DPD.

10. Environmental, Economic, Social, Culture, and Health Effects

This section provides a brief overview of the potential environmental, economic, social, culture, and health effects, and proposed mitigation, as they are currently understood, that may arise from construction, operation, and decommissioning for the proposed Project.

10.1 Environmental Effects on Federal Lands, in a Province Other Than British Columbia, or Outside of Canada

The proposed Project Site is located on private land owned by FortisBC within the local government boundaries of Delta and a portion of the Fraser River, within Provincial jurisdiction. Potential changes to the environment as a result of carrying out the proposed Project are not anticipated to interact with or impact Federal lands, a Province other than B.C., or outside of Canada. Potential trans-B.C.-boundary effects will be determined during the development of the proposed Project Application, but could include, for example, air quality and GHG emissions.

10.2 Atmospheric Environment

10.2.1 Climate and Air Quality

The proposed Project Site experiences generally mild and mildly varying temperatures throughout the seasons owing to the proximity to the Pacific Ocean. Daily average temperatures in the area range from 2 degrees Celsius (°C) in the winter months to 19°C in the summer, while average monthly rainfall ranges from 37 millimetres (mm) in July to 199 mm in November (based on Environment and Climate Change Canada [ECCC] Climate Normals for Richmond Nature Park). Winds typically blow from the east and northeast in the winter months; while in the spring and summer, and to a lesser extent in the fall, sea breeze circulations add westerly and southerly winds to the dominant easterly winds. Climate change is causing more frequent extreme heat and wildfire smoke events during the summer months, leading to episodes of elevated fine particulate matter (PM_{2.5}) and coarse particulate matter (PM₁₀) ground concentrations in recent years.

Tilbury Island is located within Metro Vancouver, which has an extensive air quality network. The air quality is generally good with criteria air contaminant (CAC) concentrations below the Metro Vancouver Ambient Air Quality Objectives (AAQOs). The proposed Project Site is however located in a predominantly industrial area, with air contaminants emitted from nearby industrial activities and marine traffic.

Potential proposed Project-related effects to air quality include:

- Air quality effects from dust during construction; and
- CAC emissions during operations.

10.2.2 Greenhouse Gases

Activities associated with all phases of the proposed Project, can directly emit GHGs or cause GHG emissions indirectly, which have the potential to affect the environment by altering radiative forcing and the acidity of the oceans. GHG emissions in this section are reported in CO₂e, which is the amount of carbon dioxide (CO₂) that would cause the same radiative forcing over a 100-year period.

Table 10-1 provides estimates of annual net GHG emissions by proposed Project phase.

Table 10-1. Preliminary Estimate of Net GHG Emissions per Phase

Phase	Duration (years)	Direct Emissions (tCO ₂ e/year)	Acquired Energy Emissions (tCO ₂ e/year)	Net Emissions (tCO ₂ e/year)
Construction	3 to 6	5,060	0	5,060
Operations	40 to 60	191,000	43,100	234,000
Decommissioning	2	N/A	0	N/A

Notes:

Values have been rounded to three significant figures to reflect the early stage of design information. Totals may not add up due to rounding errors.

These estimates are preliminary and based on the proposed Project design as it is currently envisioned before going through detailed design.

Annual average direct GHG emissions during the 3-year Construction Phase are estimated to be about 5,060 tonnes of carbon dioxide equivalent per year (tCO₂e/year), or a total of approximately 15,180 tonnes of carbon dioxide equivalent (tCO₂e). Should the construction period extend (such as, to 6 years) annual construction emissions will diminish. N/A = no information available at this stage, but emissions can reasonably be assumed to be lower than for construction.

Net GHG emissions of the proposed Project during operations are estimated to be 234,000 tCO₂e at full production of 7,700 t/d or 2.5 MTPA, which corresponds to a CI of 0.09 tCO₂/tLNG.

10.2.3 Noise

The existing noise environment within the area surrounding the Tilbury facility is dominated by existing industrial activity on Tilbury Island and the local road system which is primarily from traffic along Hopcott Road, Tilbury Road, River Road and South Fraser Perimeter Road. Additional environmental noise that may be present would be from marine activity along the Fraser River and industrial activity in Richmond directly across the Fraser River from the Tilbury facility.

10.3 Physical Environment

10.3.1 Geology and Soils

Surficial materials at the proposed Project Site are typical of flood plain or deltaic deposits, composed of very deep silts, sands, and clays. These unconsolidated materials are deposited in layers and extend up to 200 m below the surface of the ground. The soil stratigraphic profile of the proposed Project Site shows silt or clay loams to a depth of approximately 5 m, overlaying deep (~25 m) deposits of Fraser River sand, which is situated on top of very deep (> 100 m) marine deposits (Golder 2013).

The proposed Project Site elevation is approximately 1 masl and is typical of flood plain sites, with a fluctuating water table and soils that are saturated during the winter months due to poor drainage, flat topography and dense, fine-textured soils (Green and Klinka 1994).

Potential proposed Project-related effects to soils include generation and mobilization of sediment.

FortisBC will control sediment production and mobilization through erosion control measures and sediment collection or settling facilities. Ground and surface water will be controlled through measures such as proposed Project Site isolation, damming, or pumping around work areas.

10.3.2 Contaminated Soils and Groundwater

The proposed Project Site was subject to numerous environmental investigations and remediation efforts from 1991 to 2014. A Certificate of Compliance under the B.C. *Contaminated Sites Regulation* was

obtained for the western portion of the proposed Project Site, formerly the sawmill site. This area has since been developed with additional infrastructure as part of the Phase 1 expansion of the Tilbury LNG facility. The Environmental Overview Assessment for the CPCN application, resulted in eight areas of potential environmental concern (APECs) and their associated potential contaminants of concern were identified for the proposed Project Site. A Stage 1 and 2 Preliminary Site Investigation (PSI) was conducted in 2020/2021 and APECs were identified for the proposed Project Site. A Stage 2 PSI is planned for the proposed Project Site in 2021 to investigate soils, groundwater, and soil vapour.

10.3.3 Water and Aquatic Systems

The property boundary extends between 20 m and 30 m southeast of the Fraser River. Between the Project Site and the Fraser River is a dike which is maintained by Delta. The existing earth jetty extends approximately 74 m past the dike and into the river.

The south end of the property is approximately 100 m north of Tilbury Slough, a side channel of the Fraser River. The proposed Project Site has been mostly cleared for industrial purposes and has no natural watercourses. There are a series of drainage ditches located on the property that serve to drain surface water from the proposed Project Site. Site drainage enters Tilbury Slough via a culvert located at the southwest end of the property.

Potential proposed Project-related effects to the aquatic environment include localized changes to:

- Flow direction
- Velocity
- Scouring
- Sedimentation

Sediment and erosion control measures will be implemented to reduce water quality effects to the aquatic environment from construction activities.

10.4 Biological Environment

10.4.1 Vegetation

The proposed Project is situated in the Coastal Douglas-Fir Biogeoclimatic Zone, although it is transitional to the Coastal Western Hemlock Zone. The Coastal Douglas-Fir Biogeoclimatic Zone has warm dry summers and mild wet winters (DeLong et al. 1991). The proposed Project Footprint was previously cleared of natural forest and has been heavily disturbed, with the majority of the proposed Project Site being used for industrial purposes.

Vegetated areas include the riparian area on the banks of Tilbury Slough along the southeast perimeter of the proposed Project Site as well as a small area of riparian vegetation on the bank of the Fraser River.

The Tilbury Slough is characterized by riparian vegetation dominated by native and non-native plant species such as black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), red alder (*Alnus rubra*), common cattail (*Typha latifolia*) and reed canarygrass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus armeniacus*). Where the slough is not draining, standing water has accumulated and a wetland plant community exists.

The riparian vegetation along the Fraser River is deciduous-dominated young forest with an understory dominated by plant species that are common on disturbed and riparian sites. The two drainage ditches are characterized by non-native herb and grass species.

Potential proposed Project-related effects to vegetation include short-term reduction of instream and riparian vegetation.

The potential effects of the proposed Project on the upland vegetation communities at the proposed Project Footprint would be limited, as most of the native vegetation has been previously removed from the proposed Project Footprint. The riparian vegetation along the Tilbury Slough will not be impacted by construction.

10.4.2 Wildlife and Wildlife Habitat

Wildlife use within the proposed Project Area is primarily limited to the riparian area on the banks of Tilbury Slough and along the Fraser River. The proposed Project Footprint is situated within an industrialized portion of the Fraser River and upland habitat is predominately covered by hard, anthropogenic surfaces. The majority of wildlife habitat in the proposed Project Area has been altered by industrial and agricultural development. There is little to no suitable wildlife habitat within the Tilbury site itself.

The proposed Project Footprint is surrounded by the Important Bird Area (IBA) BC017: Boundary Bay – Roberts Bank – Sturgeon Bank (Fraser River Estuary) (IBA Canada 2021). This IBA supports globally or continentally significant populations of 15 species, including American wigeon, northern pintail, mallard, brant, snow goose, trumpeter swan, western sandpiper, black-bellied plover, dunlin, great blue heron, western grebe, red-necked grebe, glaucous-winged gull, Thayer's gull, and mew gull. In addition, the IBA supports nationally significant numbers of barn owl and peregrine falcon.

The small patches of riparian forest along the Fraser River and Tilbury Slough provide suitable breeding, nesting, and foraging habitat for a variety of migratory birds, waterfowl, and raptors, including the bird species with special conservation status. Within the proposed Project Footprint, there is limited suitable breeding and nesting habitat for birds, as the majority of the proposed Project Site has been anthropogenically altered.

Although riparian habitat and slow-moving water is present within Tilbury Slough, the slough does not provide suitable habitat for the majority of native amphibian and turtle species as it contains salty/brackish waters. Non-native amphibian species (that is, green frog) are anticipated to be present within the Tilbury Slough. However, suitable amphibian within the proposed Project Footprint is limited.

Potential proposed Project-related effects to wildlife and wildlife habitat include:

- Temporary displacement of small mammals and birds during construction;
- Reduction in potentially suitable nesting and foraging habitat for migratory birds due to vegetation removal; and
- Avoidance of the area by migratory birds during construction.

The potential effects are considered minimal due to the highly disturbed nature of the site and the small area of vegetated habitat affected. The riparian habitat along Tilbury Slough will not be impacted by construction.

10.4.3 Fish and Fish Habitat

The property boundary is adjacent to the riparian area of the Fraser River, but separated by a dike that is maintained by Delta. However, the MOF extends past the dike and into the river. The south end of the property is approximately 100 m north of Tilbury Slough, a side channel of the Fraser River.

The Fraser River Estuary is known to support 78 different species of fish, including 7 salmon species and several Provincially Red- and Blue-listed species, and Federal Species at Risk, including white sturgeon (Lower Fraser River Population) (*Acipenser transmontanus*). Shoreline habitats near the proposed Project Site may provide important rearing habitats for a number of salmonid species and juvenile white sturgeon. Salmonids of conservation concern migrate past the proposed Project Site in the Fraser River, including spawning adults and out-migrating smolts. Important migratory habitats for eulachon are also expected to be present in the Fraser River adjacent to the proposed Project Site.

Potential interactions between the proposed Project and fish and fish habitat are primarily associated with the possible upgrades of the MOF for material offloading during construction. The possible additional upgrades are expected to focus on the topside of the jetty and upland areas, which may include improving grading and load bearing and dike upgrades. At the time of writing, design features and construction activities have not been specified for the MOF. If in-water works are necessary, activities with the potential to impact fish and fish habitat may include proposed Project Site preparation, removal of existing structures, fill placement, removal of instream riparian vegetation, construction of temporary pilings and MOF, and increased river traffic.

Potential proposed Project-related effects to fish and fish habitat include:

- Alteration or loss of fish habitat and benthic invertebrate habitats;
- Disruption of habitat use; and
- Fish mortality or injury.

No effects to fish and fish habitat are anticipated to result from increased marine traffic during proposed Project construction.

Marine mammals that may be present within the Fish and Fish Habitat LAA include Steller sea lion (*Eumetopias jubatus*) (listed as Special Concern on Schedule 1 of the *Species at Risk Act (SARA)*, B.C. Blue-listed), and harbour seals (*Phoca vitulina*) and California sea lion (*Zalophus californianus*) (both B.C. Yellow-listed species) (B.C. CDC 2021). The harbour seal is widely distributed and may occur within the Fish and Fish Habitat LAA, while the Stellar sea lion is unlikely to be present.

Sea lions congregate in the Fraser estuary during the eulachon run; rafts of greater than 100 California sea lions have been observed as far as 50 km upstream of the mouth (likely upstream of the Tilbury site) (Bigg 1985).

Potential proposed Project-related effects to marine mammals include:

- Temporary displacement of marine mammals from using nearby adjacent areas during construction, however alternative habitat is available in the surrounding area; and
- Potential for collision with marine mammals, however this is anticipated to be a very low risk.

The resulting potential effects are considered to be minimal.

10.5 Human and Community Well-being Conditions

The following subsections provide a brief outline of potential socio-economic effects of the proposed Project. These subsections have been informed by the outcomes of Early Engagement.

10.5.1 Social and Cultural Conditions

At the time of the 2016 Census, Metro Vancouver had a diverse population with 48.6 percent of the population being of European heritage, 2.5 percent of Indigenous heritage, and the remaining 48.9 percent were of visible minority origin (Statistics Canada 2017a).

Deltas population was 60 percent European origin, with 33.4 percent of Asian descent, including 17.3 percent East Indian, 8.1 percent Chinese, and 3 percent Filipino. Of the 2,710 Indigenous people in 2016, 52 percent were from Indigenous nations and 48 percent were Métis (Statistics Canada 2017b).

Table 10-2 provides an overview of the population statistics for Delta and Metro Vancouver at the time of the 2016 Census.

Table 10-2. 2016 Census Population Statistics for Metro Vancouver and Delta

	Total Population	Male	Female	Average Age
Delta	102,238	50,125	52,110	42 years
Metro Vancouver	2,463,431	1,202,175	1,261,255	41 years

Source: Statistics Canada 2017a

The Metro Vancouver population over 25 is highly educated. The majority of the population has a post-secondary education with females more likely to be better educated than males. More than 68 percent of the population has post-secondary education (Table 10-3).

Table 10-3. Education Levels in Metro Vancouver

	Total	M	F
Highest certificate, diploma or degree for the population aged 25 to 64 years in private households – 25% sample data Census data footnote 146	1,392,440	671,970	720,470
No certificate, diploma or degree	111,575	58,090	53,480
Secondary (high) school diploma or equivalency certificate Census data footnote 147	339,185	168,975	170,210
Post-secondary certificate, diploma or degree	941,685	444,905	496,780

Source: Statistics Canada 2017a

Preliminary data collected in the early stages of COVID-19 shows that Delta has the lowest population of individuals experiencing homelessness when compared to other local governments in the Region.

Delta has a complex transportation system that accommodates the needs of the differently abled, pedestrians, cyclists, local traffic, commuter traffic, and goods movement (Delta 2019). Traffic management plans and forecasts for Delta and Metro Vancouver will be reviewed in the proposed Project Application to understand the effects from proposed Project traffic on regional and local traffic. Other infrastructure that will be assessed in the Proposed Application includes storm water and sanitary sewer systems, flood protection, as well as other local and regional services.

10.5.1.1 Potential Project Effects to Social, Economic, and Cultural Conditions

Based on an initial understanding of the proposed Project, the following potential positive and adverse effects to social, economic, and cultural conditions are being considered for inclusion in the Application.

- Increased jobs, business contracts, and tax contributions as a result of the proposed Project
- Price increases to essential goods due to increased economic activity as a result of the proposed Project
- Changes to traditional, recreational, agricultural, or rural leisure activities, and other land and resource uses as a result of the proposed Project's real or perceived changes to noise, views, air emissions
- Changes to marine access and activities for fishing, tourism, and boating as a result of real or perceived changes to noise, views, air emissions, access, or shipping traffic
- Changes to traffic and vehicle access, including community emergency response infrastructure, during Construction Phase as a result of the proposed Project
- Location of construction-related laydown areas adjacent to the proposed Project, and the ownership status of these areas
- Effects from the proposed Project related to air quality, noise, and light
- Changes to Indigenous or other traditional practices as a result of changes to land and resource use
- Changes to intergenerational knowledge transfer as a result of changed experiences being in land or marine environments

FortisBC will continue its engagement to identify ways to benefit the local community and ways to mitigate potential negative effects with a particular focus on distinct subgroups of the population who may experience differential effects. It will also continue to engage to understand potential positive effects and possible barriers for vulnerable subgroups of the population to accessing those positive effects. Data collection related to the Application preparation process will also further identify potentially differentially affected groups.

10.5.2 Economic Conditions

The proposed Project Site is located within Delta in Metro Vancouver. The Municipality spans 180 square kilometres and is home to approximately 103,000 residents living across three residential communities: North Delta, Ladner, and Tsawwassen (Statistics Canada 2017c).

Delta has a diverse economy supported by a multitude of industries including aerospace, manufacturing, communications, and tourism. Employment in Delta totalled 51,820 jobs and an unemployment rate of 5.3 percent, compared to the provincial average of 6.7 (Statistics Canada 2017c). COVID-19 resulted in the dramatic losses of jobs and income in Delta, but data is still being assembled to fully understand the effects of the COVID-19 pandemic. Across B.C., it has been shown that the unemployment rate went from 4.4 percent in February 2020 to 13.3 percent in July.

Delta's average household income is approximately 30 percent higher than the national average (Statistics Canada 2017c). Delta's median total income of households in 2015 was \$92,200 while the average total income was \$111,900. There was also a relatively smaller number of families with income levels below the Low Income Measure (LIM), which is calculated at half the median income and is a proxy for a poverty line. Tables 10-4 and 10-5 show the unemployment rates and employment trends in B.C. from February to December of 2020.

Table 10-4. British Columbia Unemployment Rate, February to December 2020

	British Columbia										
	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020	Aug 2020	Sep 2020	Oct 2020	Nov 2020	Dec 2020
Unemployment rate, %	4.4	5.3	7.5	10.7	13.1	13.3	10.1	8.4	8.0	7.1	7.2

Source: WorkBC 2020

Table 10-5. British Columbia Employment Trends, February to December 2020

	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020	Aug 2020	Sep 2020	Oct 2020	Nov 2020	Dec 2020
Total employment, % change	-0.3	-5.2	-11.0	+2.0	+5.4	+3.0	+0.6	+2.3	+1.4	+1.0	+0.2
Construction, % change	+0.9	-2.6	-14.6	-0.7	+4.1	+2.4	+1.8	-6.8	-0.4	+2.9	+3.2

Source: WorkBC 2020

The proposed Project is expected to increase economic activity, business demand, employment, labour income, and government revenues through taxes and royalties, as well as the enhancement of workforce and business capacity.

The proposed Project is anticipated to add approximately \$1.7 billion to B.C.'s GDP. Construction is expected to create more than 6,000 direct, FTE jobs¹ in B.C. The Construction Phase will generate approximately \$300 million in tax revenues for local government in the Province.

Once fully operational, annual sales of LNG are expected to contribute approximately \$0.7 billion annually to B.C.'s GDP and create approximately 110 FTE jobs in B.C. Total annual tax revenues generated from proposed Project operations are anticipated to exceed \$87 million in B.C. and \$196 million in Canada.

10.5.3 Archaeological and Heritage Resources Conditions

An archaeological impact assessment (AIA) was conducted under a HIP to evaluate archaeological potential, record and assess archaeological sites, and provide management recommendations in the area southeast of the existing facility for the Tilbury Phase 1A expansion. Although there were no significant archaeological remains within the AIA, ground-altering activities associated with expansion construction have the potential to alter archaeological or historical sites, features, and objects located in areas where previous AIA work has not been conducted.

Given that areas with heritage resource potential have not all been subject to a desktop-based assessment or field inspection, there remains a data gap and detectable heritage resources may be present and potentially be affected by expansion activities. FortisBC has completed an archaeological overview assessment (AOA) to provide a desktop analysis of the archaeological potential for the whole proposed Project and will conduct an AIA for the expansion construction activities. If heritage resources are encountered during subsequent studies, avoidance (that is, re-design of expansion components) of heritage resources will be the primary mitigation when feasible.

¹ Jobs refers to full-time employees, expressed in person years.

10.5.4 Health Conditions

The construction of the proposed Project will result in short-term increases in noise levels, air emissions from construction equipment operation, increased marine traffic during construction, and dust from vehicle use of access roads. FortisBC will acquire air quality permits from Metro Vancouver, including those required for non-road diesel engines. The proposed Project will need to be aligned with Metro Vancouver's AAQOs, Canadian AAQOs, and B.C. Provincial AAQOs. FortisBC will consider potential health effects due to air quality changes in the proposed Project Application.

Health effects from contaminants is an anticipated community concern, particularly for Indigenous nations and those who harvest country foods. A study conducted by the Cohen Commission identified numerous chemicals in surface waters and in bottom sediments in the Fraser River that posed potential risks to sockeye salmon populations but needed further evaluation to determine potential effects on human health (Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River [Canada] 2012).

The Human Health Risk Assessment methodology, for the proposed Project, will be used to assess potential effects for all phases of the proposed Project on the Human Health VC. FortisBC will consider potential health effects due to air quality changes, noise and contaminants including changes in subsistence use and potential effects on agriculture in the proposed Project Application.

10.6 Anticipated Cumulative Effects

The Application will include a cumulative effects assessment (CEA) that will identify potential cumulative effects to each VC where residual adverse effects have been determined. The CEA will evaluate the residual environmental and socio-economic effects directly associated with the proposed Project, in combination with the likely residual effects arising from other projects and activities that have been or will be carried out in the proposed Project study areas.

The proposed Project Application and the CEA will be informed by:

- approved land use plans that designate the most appropriate activities on the land base
- baseline studies and historical data that factor in the effects of past development and set out the current conditions, including Indigenous Knowledge
- potential overlapping effects due to present developments
- reasonably foreseeable project

Potential trans-B.C.-boundary effects will be determined during the development of the proposed Project Application, but could include, for example, air quality, and GHG emissions.

10.7 Accidents and Malfunctions

FortisBC is committed to designing, constructing, and operating the proposed Project in a safe and environmentally responsible manner that respects the communities within which it operates.

The Tilbury facility has been operating safely in Delta since the early 1970s. The Tilbury facility has procedures and safety measures for preventing and managing spills, leaks, and vapour clouds. It also has the capability to shut down automatically during an emergency. The facility has complete on-site fire control and response systems independent of the fire department. The facility is also continuously monitored year-round by highly trained site personnel who have been producing LNG for decades. These safety systems will be evaluated and upgraded as part of the proposed Project to verify continued safe facility operations. The specific malfunctions or accidents to be considered in the proposed Project Application have been provided in Table 10-6.

Table 10-6. Preliminary List of Potential Accident and Malfunction Scenarios

Scenario	Preliminary Risk Rating*
Fire or explosion	Low
Events involving hazardous material spills (such as, HC fuels, lubricants, and concrete) in environmentally sensitive habitat	Low to Medium
Terrestrial vehicle collision	Medium
Loss of containment of LNG	Low
Flammable liquids, solvents, or pressurized gas from ruptured piping or equipment during commissioning or operation resulting in the risk of overpressure, fire, toxic gas release, and injury to personnel	Low
Unplanned facility shutdown including emergency flaring, process upset, or power outage	Low
Construction-related river/marine vessel collision with ground, other vessels, marine/river facilities, marine mammals, aquatic organisms, with potential loss of cargo	Low to Medium

* This is a preliminary identification using the risk rating formula (Likelihood X Consequence = Risk Rating). A full risk assessment will be conducted in accordance with Risk Management Guideline for the B.C. Public Sector (Province of B.C. 2019) for the proposed Project Application.

The design, construction, and ongoing operation/maintenance of LNG facilities shall meet stringent codes and standards requirements. Hazard identification, hazard and operability studies, and safety integrity level studies are conducted during phases of engineering and design. Permitting is done through B.C. OGC including reviews of design and risk assessments. B.C. OGC may require a quantitative risk assessment study report.

Mitigation developed for the proposed Project will follow the Mitigation Hierarchy. The first step of the Mitigation Hierarchy comprises of measures taken to avoid creating effects from the outset. Another key preventive measure communicated is to follow Local, Provincial, Federal, and International government standards and codes for the design, construction, and operations of the facility. Following these measures will help ensure the safety of the facility using tested and accepted practices. After all possible potential effects are avoided through siting and design considerations, additional mitigation will be applied to minimize the potential effects to acceptable levels.

Emergency management plans are also prepared to develop response plans according to industrial codes or standards and in partnership with local emergency responders. These plans are updated using appropriate modelling and mitigation measures. Training, drills, and practice emergency exercises are conducted with emergency responders to verify response plans are effective and ready throughout the life of the proposed Project.

10.8 Effects of the Environment on the Project

FortisBC understands that potential effects of the environment on the proposed Project must be considered and appropriately mitigated to the extent possible. This subsection provides a preliminary list of environmental factors deemed to have possible consequences on the proposed Project. The proposed Project Application will include an assessment environmental factors deemed to have possible consequences on the proposed Project, including, but not necessarily limited to, consideration of natural hazards and influences of nature such as: flooding, earthquakes, tsunamis, windstorms, drought, wildfires, and pandemic. The proposed Project Application will include measures for prevention, mitigation, and response to potential effects of the environment, including climate change adaptation measures.

Development of the draft Application Information Requirements (AIRs), through Process Planning, will determine the full list of effects to be assessed in the proposed Project Application.

Table 10-7 provides a summary of potential effects of the environment on the proposed Project

Table 10-7. Potential Effects of the Environment on the Project

Component	Potential Environmental Impact
Seismicity	<p>Peak Ground Velocity (PGV) values were calculated for the proposed Project Site to provide an indication of seismic hazard. Values are for firm soil (Soil Type C) and reflect the new baseline return period.</p> <p>At the proposed Project Site, the PGV value is 0.564 metres per second, giving it a seismic hazard value of high. This is confirmed by seismic hazard mapping (NRCAN 2010), which categorizes the seismic hazard in the Lower Mainland as high.</p>
Seismic Design and Mitigation	<p>Two levels of earthquake motions need to be considered during facility design, Operating Basis Earthquake (OBE) and Safe Shutdown Earthquake (SSE). In the case of either an OBE or SSE, the structures and systems will be designed to remain operable during and after the event.</p>
Flooding	<p>The Lower Mainland Region, including at the proposed Project Site, is at risk from flooding due to the hazard from being at the Fraser River's lowest reaches.</p> <p>Delta administers an extensive system of dikes and drainage structures built to protect the delta from flooding. There is currently a dike in place between the existing Tilbury facility and the Fraser River. The dike was recently upgraded in 2019 to the latest earthquake and flood standard. The impact of a flooding event on the proposed Project will be assessed as part of the proposed Project Application.</p>
Changing Climate Trends	<p>Based on different future pathways and models used, Metro Vancouver presented a range of projections for climate in the Region.</p> <p>Engineering and design of the proposed Project has taken into consideration the following anticipated climate change trends:</p> <ul style="list-style-type: none"> ▪ Warmer temperatures ▪ Longer dry spells in summer months ▪ More precipitation in fall, winter, and spring ▪ More intense extreme events (such as, storm surge, sea level rise, and high tide)

10.9 Mitigation and Management Strategies

Preliminary mitigation measures have been identified to prevent or reduce potential proposed Project-related effects. These include, but are not limited to, the following:

- Proposed Project-specific design measures to optimize efficiency and mitigate GHG emissions such as using electric drives and air cooling for liquefaction and other process units
- Erosion and sediment control measures
- Isolation, damming, or pumping around work areas to control ground and surface water
- Pre-construction vegetation surveys for Provincially- and Federally-listed plant species. Species-specific mitigation may include measures to control Noxious weeds (as required by the *Weed Control Act*) and prevent the spread of invasive plant species
- Design specific considerations to reduce effects of construction and operation of the MOF on riparian habitat
- Instream works will occur during the Fisheries and Oceans Canada (DFO) Marine/Estuarine Timing Window for the Protection of Fish and Fish Habitat from June 16 to February 28, where feasible

Detailed Project Description Summary

- Conduct clearing outside of the breeding bird window, where feasible, or engage a Qualified Environmental Professional (QEP) to conduct a pre-construction bird nest search
- Conduct clearing outside of the migratory bird nesting period of March 26 to August 9, to the extent practical
- If construction activities cannot avoid this period, conduct a non-intrusive nest search to identify active bird nests a maximum of 7 days prior to commencement of clearing
- If an active nest is discovered, establish a no-clearing nest buffer
- Conduct an amphibian salvage program if removal of the ditch or associated vegetation is required

Monitoring programs will be implemented during the Construction and Operations phases of the proposed Project to ensure effectiveness of the applied mitigation. Atmospheric monitoring programs will include monitoring of dust and operational stack emissions, as part of permit Conditions. A comprehensive environmental noise monitoring program will be conducted using a series of sound level meters in order to define the existing noise environment. Other specific monitoring programs will be developed in collaboration with regulatory agencies. The monitoring programs will be developed in collaboration with Indigenous nations during the preparation of the proposed Project Application and will be refined throughout the EA process. An Environmental Management Program will also be completed following detailed design.

11. Engagement with Indigenous Nations

11.1 Identified Indigenous Nations

FortisBC's review of the Consultative Areas Database (CAD) identified 17 Indigenous nations whose established or asserted Traditional Territories overlap with the proposed Project Footprint. Additional Indigenous nations that were initially identified as having a potential interest in the proposed Project are:

- Squamish Nation - although not identified in the CAD report and have not submitted a notice to engage as a participating Indigenous nation under the B.C. *EAA*, Squamish Nation have been included in this list due to their interest in the Tilbury Marine Jetty project, which is located near the proposed Project.
- Métis Nation British Columbia - FortisBC included Métis Nation British Columbia in the IPD and have been providing Métis Nation British Columbia with Project updates and notifications.

In the Joint Summary of Issues and Engagement, the B.C. EAO and IAAC (as required by Section 14 (1) of the *IAA*) stated that it had notified and requested input from additional Indigenous nations and organizations whom they stated could reasonably be expected to be affected by the proposed Project (subsection 11.1.2 of this document).

Under the B.C. *EAA* Indigenous nations can notify the B.C. EAO of their interest in the proposed Project if they believe it may affect their interests and can also self-identify as a participating Indigenous nation for the assessment of a project. Identified participating Indigenous nations are afforded specific procedural rights under the B.C. *EAA*, including: capacity funding; participation in consensus seeking processes; a procedure to communicate consent or withhold consent at key decision points; and access to facilitated dispute resolution. Indigenous nations interested in participating in the application process as a participating Indigenous nation must notify the B.C. EAO of their interest.

As of October 6, 2020, 13 Indigenous nations or organizations have submitted notices to engage as a participating Indigenous nation under the B.C. *EAA*. Note that S'ólh Téméxw Stewardship Alliance represents 15 S'ólh Téméxw Nations, including two member Indigenous nations, Chawathil First Nation, and Cheam First Nation, who independently submitted notice to engage as a participating Indigenous nation:

- Chawathil First Nation
- Cheam First Nation
- Cowichan Tribes
- Halalt First Nation
- Kwantlen First Nation
- Lyackson First Nation
- Musqueam Indian Band
- Penelakut Tribe
- S'ólh Téméxw Stewardship Alliance representing:
 - Aitchelitz First Nation
 - Kwaw-kwaw-Apilt First Nation
 - Scowlitz First Nation
 - Shxwhá:y Village
 - Skawahlook First Nation
 - Skowkale First Nation
 - Skwah First Nation

- Soowahlie First Nation
- Squiala First Nation
- Sumas First Nation
- Tzeachten First Nation
- Yakweakwioose First Nation
- Yale First Nation
- Stz’uminus First Nation
- Tsawwassen First Nation
- Tseil-Waututh Nation
- Ts’uubaa-asatx Nation (Lake Cowichan First Nation)

See subsection 11.3 of the DPD for a summary of FortisBC’s engagement with these Indigenous nations. Refer to Appendix A for maps of the territories and/or consultation areas of these Indigenous nations.

11.1.1 Indigenous Nations not Formally Identified as Participating Indigenous Nations

It is FortisBC’s understanding that the following Indigenous nations, as identified through a review of CAD, may be affected by the proposed Project, however they have not self-identified as a participating Indigenous nation as of October 6, 2020.

See subsection 11.3 of this document for a summary of FortisBC’s engagement with these Indigenous nations. See Appendix A for maps of the territories and/or consultation areas of these Indigenous nations.

- Katzie First Nation
- Leq’ámél First Nation
- Métis Nation British Columbia
- Seabird Island Band
- Semiahmoo First Nations
- Shxw’ōwhámél First Nation
- Squamish Nation
- Stó:lō Nation

11.1.2 Indigenous Nations Identified in the Joint Summary of Issues and Engagement

Additional Indigenous nations and organizations that are identified in the Joint Summary of Issues and Engagement and have been notified of the proposed Project by IAAC, B.C. EAO, and FortisBC and asked for input are:

- Kwikwetlem First Nation
- Malahat First Nation
- Matsqui First Nation
- Pauquachin First Nation
- Popkum First Nation
- Tsartlip First Nation
- Tsawout First Nation
- Tseycum First Nation

FortisBC has been informed by the B.C. EAO and IAAC that Snuneymuxw First Nation have expressed an interest in the proposed Project and that B.C. EAO and IAAC will be following up with Snuneymuxw First Nation.

See subsection 11.3 of this document for a summary of FortisBC's engagement with these Indigenous nations. See Appendix A for maps of the territories and/or consultation areas of these Indigenous nations.

11.2 Summary of Information Regarding Indigenous Nations' Lands

In accordance with the requirements in Schedule 2, Section 13 (e) of the *Information and Management of Time Limits Regulations* under the IAA (IAAC 2019), information has been provided on the Traditional Territories and/or consultation areas, and reserve locations for each identified Indigenous nation in relation to the proposed Project. Each of the Indigenous nations identified has, or asserts claims of, Aboriginal Rights and Title to the lands, water, and resources within their Traditional Territories. This includes, but is not limited to, the use of terrestrial, freshwater, marine, and other resources within those territories for traditional purposes (WesPac 2015). Associated activities include, but are not limited to, fishing, hunting, trapping, and gathering activities for food, materials, trade, medicines, and traditional ceremonies (WesPac 2015).

Appendix A of this DPD Summary provides maps showing the Traditional Territories and/or consultation areas of these Indigenous nations.

11.2.1 Chawathil First Nation

Chawathil First Nation's Traditional Territory is located near Hope in the Fraser Valley within S'ólh Téméxw, the Traditional Territory of the Stó:lō people (Chawathil n.d.). Refer to Figure 1B in Appendix A for a map of Chawathil First Nation's Traditional Territory in relation to the proposed Project.

Chawathil First Nation has six reserves: Hope 1, Schkam 2, Greenwood Island 3, Chawathil 4, Peckw'xe:yles and Tunnel 6 (INAC 2019). The closest reserve to the proposed Project Site is Peckw'xe:yles, a reserve shared among 21 Stó:lō Nations, located 55 km away, on the north bank of the Fraser River within the District of Mission.

Chawathil First Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.2 Cheam First Nation

Cheam First Nation's Traditional Territory includes the northern half of Chilliwack to the mountains east of Wahleach lake, extending north through the south-eastern part of Harrison Lake (including Echo Island and Long Island) to the mountain's northwest of Spuzzum. The Traditional Territory extends southeast to Spuzzum, and back south until Choate. The Traditional Territory includes most of the Fraser River in the area, excluding the elbow by Hope (Cheam Enterprises Inc. 2019). Refer to Figure 1B in Appendix A for a map of the collective Traditional Territory of the Stó:lō Nation and of the Stó:lō Tribal Council.

Cheam First Nation has two reserves, Cheam 1 and Tseatah 2, both located east of the confluence of the Fraser and Harrison Rivers. The closest reserve is Cheam 1, located 90.6 km away.

Cheam First Nation has signed a Framework Agreement under the *First Nations Lands Management Act* (FNL MRC 2021).

11.2.3 Cowichan Tribes

Cowichan Tribes is a member of the Quw'utsun Nation (formerly known as the Cowichan Nation Alliance) (CNA 2019). The historic Quw'utsun Nation exclusive Aboriginal Title area includes the entirety of Tilbury Island (CNA 2019).

The Quw'utsun Nation is reclaiming the historic village site of Tl'uqtinus and other proximal lands in what is present day Richmond and Delta, by way of legal proceedings, including the right to fish in the South Arm of the Fraser River (CNA 2019; Ronson 2020). The historic village site of Tl'uqtinus is located approximately 515 m north of the proposed Project Site on the opposite side of the Fraser River. The members of the Quw'utsun Nation have signed a stewardship agreement with the Province for the South Arm of the Fraser River.

Cowichan Tribes is also a member of the Hul'qumi'num Treaty Group for the purpose of treaty negotiations (Cowichan Tribes 2020). The Hul'qumi'num Treaty Group Core Traditional Territory includes a portion of southern Vancouver Island from Duncan north of Ladysmith, west to Lake Cowichan, and east to the Gulf Islands. The marine Traditional Territory spans across the Strait of Georgia to include a narrow corridor up the Fraser River to Yale on the mainland, which includes the proposed Project Area (B.C. Treaty 2020a). Refer to Figure 1A in Appendix A for a map of the Hul'qumi'num Treaty Group collective Traditional Territory.

The Cowichan Tribes have nine reserves: Cowichan 1, Cowichan 9, Est Patrolas 4, Kakalatza 6, Kil-Pah-Las 3, Skutz 7, Skutz 8, Theik 2, and Tzart-Lam 5. The main community, Cowichan 1, is located in Duncan, B.C. and is the closest to the proposed Project Site, located 56.6 km away on Vancouver Island.

Cowichan Tribes has signed a Framework Agreement under the First Nations *Lands Management Act* (FNL MRC 2021).

11.2.4 Halalt First Nation

Halalt First Nation is part of the Hul'qumi'num Treaty Group. The Hul'qumi'num Treaty Group Core Traditional Territory includes a portion of southern Vancouver Island from Duncan north of Ladysmith, west to Lake Cowichan, and east to the Gulf Islands. The marine Traditional Territory spans across the Strait of Georgia to include a narrow corridor up the Fraser River to Yale on the mainland, which includes the proposed Project Area (B.C. Treaty 2020a). Refer to Figure 1A in Appendix A for a map of the Hul'qumi'num Treaty Group collective Traditional Territory.

Halalt First Nation is also a member of the Quw'utsun Nation. Halalt First Nation has stated that the historic Quw'utsun Nation exclusive Aboriginal Title area includes the entirety of Tilbury Island. The Quw'utsun Nation is reclaiming the historic village site of Tl'uqtinus and other proximal lands in what is present day Richmond and Delta, by way of legal proceedings, including the right to fish in the South Arm of the Fraser River (CNA 2019; Ronson 2020). The historic village site of Tl'uqtinus is located approximately 515 m north of the proposed Project Site on the opposite side of the Fraser River. The members of the Quw'utsun Nation have signed a stewardship agreement with the Province for the South Arm of the Fraser River.

Halalt First Nation has two reserves: Halalt Island 1 and Halalt 2 (INAC 2019). The main community, Halalt 2, is located on southeast Vancouver Island in Chemainus. Halalt Island 1 is the closest to the proposed Project Site on Willy Island, east of Vancouver Island at the mouth of the Chemainus River, at 52.9 km away.

Halalt First Nation has not signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.5 Katzie First Nation

Katzie First Nation asserts TLU rights within their Traditional Territory, which includes Pitt Meadows, Maple Ridge, Coquitlam, Surrey, Langley, New Westminster, and the proposed Project Area (B.C. Treaty 2020b). Refer to Figure 2B in Appendix A for a map of Katzie First Nation Traditional Territory.

Katzie First Nation has five reserves: Barnston Island 3, Graveyard 5, Katzie 1, Katzie 2, and Pitt Lake 4) (INAC 2019) Katzie First Nation's reserves are located on the Lower Mainland in Pitt Meadows, Langley, and Barnston Island. Katzie 1 is the main community and Barnston Island is the closest to the proposed Project Site, located 24.4 km away.

Katzie First Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.6 Kwantlen First Nation

Kwantlen First Nation Traditional Territory extends from Richmond and New Westminster in the west, to Surrey and Langley in the south, east to Mission, and to the northernmost reaches of Stave Lake (Kwantlen First Nation n.d.). Refer to Figure 1C in Appendix A for a map of Kwantlen First Nation Traditional Territory.

Kwantlen First Nation has seven reserves: Langley 2, Langley 3, Langley 4, Langley 5, McMillan Island 6, Peckw'xe:yles and Whonnock 1 (INAC 2019). Kwantlen First Nation's reserves are centered around the confluence of the Stave and Fraser Rivers. The main community, McMillan Island, is the closest to the proposed Project Site located in the Fraser River, north of Fort Langley, 33 km away.

Kwantlen First Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021). In 2016, Kwantlen First Nation signed a 3-year Kwantlen Forest Consultation and Revenue Sharing Agreement.

11.2.7 Kwikwetlem First Nation

Kwikwetlem First Nation has two reserves: Coquitlam 1 and Coquitlam 2, both in the District of New Westminster near the confluence of the Coquitlam and Fraser Rivers (INAC 2019). Kwikwetlem First Nation's administrative office is located on Coquitlam 1, which is Kwikwetlem First Nation's closest reserve to the proposed Project Site, located approximately 15 km away.

Kwikwetlem First Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021). Kwikwetlem First Nation signed a Forest & Range Consultation and Revenue Sharing Agreement in 2019 (Government of B.C. 2021a).

11.2.8 Leq'á:mel

Leq'á:mel First Nation is a member of the Stó:lō Nation umbrella organization and participates in the B.C. Treaty process as part of the Stó:lō Xwexwilmexw Treaty Association (B.C. Treaty 2020c). Refer to Figures 1B, 2B, and 3B in Appendix A for maps of the Sol'h Téméxw. Leq'á:mel Traditional Territory is approximately 70 km from the proposed Project Site.

Leq'á:mel has 11 reserves: Aylechootlook 5, Holachten 8, Lackaway 2, Lakahahmen 11, Lakway Cemetery 3, Papekwatchin 4, Peckw'xe:yles, Skweahm 10, Sumas Cemetery, Yaalstrick 1, and Zaitscullachan 9 (INAC 2019). The closest reserve to the proposed Project Site is Peckw'xe:yles, located 54.667 km away, on the north bank of the Fraser River within the District of Mission.

Leq'á:mel First Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021). Leq'á:mel First Nation signed a Forest and Range Consultation and Revenue Sharing Agreement in 2017 and signed a forest agreement in 2005.

11.2.9 Lyackson First Nation

Lyackson First Nation is part of the Hul'qumi'num Treaty Group. The Hul'qumi'num Treaty Group Core Traditional Territory includes a portion of southern Vancouver Island from Duncan north of Ladysmith, west to Lake Cowichan, and east to the Gulf Islands. The marine Traditional Territory spans across the Strait of Georgia to include a narrow corridor up the Fraser River to Yale on the mainland, which includes the proposed Project Area (B.C. Treaty 2020a). Refer to Figure 1A in Appendix A for a map of the Hul'qumi'num Treaty Group collective Traditional Territory.

Lyackson First Nation is also a member of the Quw'utsun Nation. The historic Quw'utsun Nation exclusive Aboriginal Title area includes the entirety of Tilbury Island. The Quw'utsun Nation is reclaiming the historic village site of Tl'uqtinus and other proximal lands in what is present day Richmond and Delta, by way of legal proceedings, including the right to fish in the South Arm of the Fraser River (CNA 2019; Ronson 2020). The historic village site of Tl'uqtinus is located approximately 515 m north of the proposed Project Site on the opposite side of the Fraser River. The members of the Quw'utsun Nation have signed a stewardship agreement with the Province for the South Arm of the Fraser River.

Lyackson First Nation has three reserves: Lyackson 3, Porlier Pass 5, and Shingle Point 4 (INAC 2019). All three reserves are located on Valdes Island, the Lyackson Homeland, between Gabriola Island to the north and Galiano Island to the south, directly opposite the mouth of the Fraser River in the Strait of Georgia. Lyackson 3 is the closest reserve to the proposed Project Site, located 44.8 km away.

Lyackson First Nation has not signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.10 Malahat Nation

Malahat Nation has two reserves: Goldstream 13 and Malahat 11 (INAC 2019). Malahat Nation's reserve lands are located on the south and western shores of Saanich Inlet. Malahat Nation shares Goldstream 13 with Pauquachin First Nation, Tsartlip First Nation, Tsawout First Nation and Tseycum First Nation. Malahat 11, approximately 76 km away, is Malahat Nation's closest reserve to the proposed Project Site. It is located at the mouth of the Saanich Inlet and is Malahat Nation's main community.

Malahat Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021). Malahat Nation has signed a Forest Consultation and Revenue Sharing Agreement in 2019 (Government of B.C. 2021b)

11.2.11 Matsqui First Nation

Matsqui First Nation is located in the Central Fraser Valley near the town of Abbotsford, B.C. within S'olh Téméxw, the Traditional Territory of the Stó:lō people. Matsqui First Nation has five reserves: Matsqui 4, Matsqui Main 2, Peckw'xe:yles (Peckquaylis), Sahnacum 1 and Three Islands 3 (INAC 2019). Peckw'xe:yles (Peckquaylis) is a shared reserve among 21 Stó:lō Nations. Matsqui 4, approximately 42 km away, is the closest reserve to the proposed Project Site, and is located at U.S./Canada border, near the Aldergrove Border Crossing. Matsqui First Nation's administrative office, located at Matsqui Main 2 adjacent to Matsqui Island on the Fraser River, is 49 km away from the proposed Project Site.

Matsqui First Nation has signed a Framework Agreement under the First Nations *Land Management Act* (FNL MRC 2021). Matsqui First Nation has signed a Forest & Range Consultation and Revenue Sharing Agreement in 2019 and 2020 (Government of B.C. 2021c)

11.2.12 Métis Nation British Columbia

Métis Nation British Columbia represents approximately 90,000 self-identified Métis people throughout B.C., of which 18,000 are Provincially registered (Métis Nation British Columbia 2020). Métis Nation British Columbia also represents 39 Métis Chartered Communities, of which 6 are located in the Lower Mainland and 3 are located in south Vancouver Island (Métis Nation British Columbia 2019). These include Chilliwack Métis Association, Fraser Valley Métis Association, Golden Ears Métis Society, North Fraser Métis Association, Nova Métis Heritage Association, Waceyá Métis Society, Cowichan Valley Métis Association, Mid-Island Métis Nation Association, and the Métis Nation of Greater Victoria Association (Métis Nation British Columbia 2020). Refer to Figure 2A in Appendix A for the locations of these associations.

11.2.13 Musqueam Indian Band

The Musqueam Consultative Area overlaps the proposed Project Area, and the Musqueam Declaration of 1976 asserts Aboriginal Rights to the lands from Howe Sound eastward to the height of land, including the watershed draining into English Bay, Burrard Inlet, and Indian Arm; south including the Coquitlam River to the Fraser River; across to the south bank of the Fraser River and proceeding downstream in the South Arm to the sea (Musqueam 1976). Refer to Figure 1C in Appendix A for a map of Musqueam Indian Band Traditional Territory.

Musqueam Indian Band has three reserves: Musqueam 2, Musqueam 4, and Sea Island 3 (INAC 2019), which are located along the west coast of the Lower Mainland in Vancouver, Richmond, and Delta. Musqueam 2 is the main community, located at the mouth of the North Arm of the Fraser River, within the City of Vancouver. Musqueam 4 is the closest to the proposed Project Site located 9.9 km away, near Canoe Pass on the South Arm of the Fraser River.

Musqueam Indian Band has signed a Framework Agreement under the *First Nation Land Management Act* (FNL MRC 2021).

Musqueam Indian Band has a proven right to fish in Canoe Passage as defined in the Supreme Court of Canada Sparrow case (Supreme Court of Canada 1990).

11.2.14 Pauquachin First Nation

Pauquachin First Nation has three reserves: Cole Bay 3, Goldstream 13, and Hatch Point 12 (INAC 2019). All on-reserve Pauquachin members reside in Cole Bay 3, which is located on the shores of Coles Bay in the Saanich Inlet. Goldstream 13, located at the end of the Saanich Inlet, is a shared reserve with Malahat First Nation, Tsartlip First Nation, Tsawout First Nation, and Tseycum First Nation. Hatch Point 12, located on the mouth of the Saanich Inlet, is Pauquachin First Nation's closest reserve to the proposed Project Site. It is approximately 63 km away. Pauquachin First Nation main community, Cole Bay 3, is 65.7 km away from the proposed Project Site (Pauquachin First Nation 2020).

Pauquachin First Nation has not signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.15 Penelakut Tribe

Penelakut Tribe is part of the Hul'qumi'num Treaty Group. The Hul'qumi'num Treaty Group Core Traditional Territory includes a portion of southern Vancouver Island from Duncan north of Ladysmith, west to Lake Cowichan, and east to the Gulf Islands. The marine Traditional Territory spans across the Strait of Georgia to include a narrow corridor up the Fraser River to Yale on the mainland, which includes the proposed Project Area (B.C. Treaty 2020a). Refer to Figure 1A in Appendix A for a map of the Hul'qumi'num Treaty Group collective Traditional Territory.

Penelakut Tribe is also a member of the Quw'utsun Nation. The historic Quw'utsun Nation exclusive Aboriginal Title area includes the entirety of Tilbury Island. The Quw'utsun Nation is reclaiming the historic village site of Tl'uqtinus and other proximal lands in what is present day Richmond and Delta, by way of legal proceedings, including the right to fish in the South Arm of the Fraser River (CNA 2019; Ronson 2020). The historic village site of Tl'uqtinus is located approximately 515 m north of the proposed Project Site on the opposite side of the Fraser River. The members of the Quw'utsun Nation have signed a stewardship agreement with the Province for the South Arm of the Fraser River.

Penelakut Tribe has four reserves: Galiano Island 9, Penelakut Island 7, Tent Island 8, and Tsussie 6 (INAC 2019). These are located directly opposite of the mouth of the Fraser River in the Strait of Georgia on Galiano Island, Penelakut Island, Tent Island, and in Chemainus on southeast Vancouver Island. Penelakut Island 7 is the main community and Galiano Island 9 is the closest to the proposed Project Site, located 42.3 km away.

Penelakut Tribe has signed a Framework Agreement under the First Nations *Lands Management Act* (FNL MRC 2021).

11.2.16 Popkum First Nation

Popkum First Nation is located in the Upper Fraser Valley near the village of Popkum, B.C. within S'ólh Téméxw, the Traditional Territory of the Stó:lō people. Popkum First Nation has three reserves: Popkum 1, Peckw'xe:yles (Peckquaylis), and Popkum 2 (INAC 2019). Peckw'xe:yles (Peckquaylis) is a shared reserve among 21 Stó:lō Nations and is Popkum First Nation's closest reserve to the proposed Project. It is located on the north bank of the Fraser River in Mission, B.C. and is approximately 54.5 km away from the proposed Project Site. Popkum First Nation's administrative office, located on Popkum 1 on the south bank of the Fraser River near Herring Island, is approximately 92 km away from the proposed Project Site.

Popkum First Nation has signed a Framework Agreement under the First Nations *Land Management Act* (FNL MRC 2021). Popkum First Nation signed a Forest Consultation and Revenue Sharing Agreement with the Province of British Columbia in 2016 (Government of B.C. 2021d).

11.2.17 Seabird Island Band

Seabird Island Band is located in the Upper Fraser Valley near the town of Agassiz, B.C. within S'ólh Téméxw, the Traditional Territory of the Stó:lō people. Seabird Island has two reserves: Peckw'xe:yles and Seabird Island (INAC 2019). The main community is Seabird Island, located in the District of Kent on the Fraser River 3 km east of Agassiz. The closest reserve to the proposed Project Site is Peckw'xe:yles, a shared reserve, located 55 km away, on the north bank of the Fraser River within the District of Mission. The Traditional Territory extends from Langley east to Yale (Stó:lō Service Agency n.d.). Refer to Figure 2B in Appendix A for a map of the collective Traditional Territory of the S'ólh Téméxw.

Seabird Island Band has signed a Framework Agreement under the First Nations *Lands Management Act* (FNL MRC 2021).

11.2.18 Semiahmoo First Nation

Semiahmoo First Nation is located near the United States border and Boundary Bay (INAC 2019). Semiahmoo First Nation Traditional Territory extends in a half moon shape around Boundary Bay including sections of Point Roberts, the Serpentine and Nicomekl Rivers, and Lake Terrell (Brown 2014). Refer to Figure 2A in Appendix A for a map of Semiahmoo First Nation Traditional Territory. Semiahmoo First Nation has one reserve, fronting Semiahmoo Bay at the Canada-United States border, approximately 1 km southeast of White Rock (INAC 2019), and 22 km away from the proposed Project Site.

Semiahmoo First Nation has not signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.19 Shxw'ōwhámél First Nation

Shxw'ōwhámél people are culturally Stó:lō and are of the Tiyt Tribe within S'olh Téméxw, the Traditional Territory of the Stó:lō people. The Traditional Territory extends from Langley east to Yale (Stó:lō Service Agency n.d.). Refer to Figure 2B in Appendix A for a map of the S'olh Téméxw.

Shxw'ōwhámél First Nation has four reserves: Kuthlath 3, Ohamil 1, Peckw'xe:yles, and Wahleach Island 2 (INAC 2019). Ohamil 1 is the main community located on the left bank of the Fraser River, 7 km north of Laidlaw. Peckw'xe:yles, a shared reserve, is the closest to the proposed Project Site located 55 km away, on the north bank of the Fraser River within the District of Mission.

Shxw'ōwhámél First Nation has signed a Framework Agreement under the *First Nations Lands Management Act* (FNL MRC 2021).

11.2.20 Skawahlook (Sq'ewá:lxw) First Nation

Skawahlook (Sq'ewá:lxw) First Nation is a member of the Stó:lō Nation within S'olh Téméxw, the Traditional Territory of the Stó:lō people. The Traditional Territory extends from Langley east to Yale (Stó:lō Service Agency n.d.). Refer to Figure 1B in Appendix A for a map of the S'olh Téméxw.

Skawahlook First Nation has three reserves: Peckw'xe:yles, Ruby Creek 2, and Skawahlook 1 (INAC 2019). Ruby Creek 2 is the main community located on the right bank of the Fraser River, adjacent to the District of Kent. The closest reserve to the proposed Project Site is Peckw'xe:yles, a shared reserve, located 55 km away, on the north bank of the Fraser River within the District of Mission.

Skawahlook (Sq'ewá:lxw) First Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.21 Skowkale (Sq'ewqéyl-l) First Nation

Skowkale (Sq'ewqéyl-l) First Nation is located in the Upper Fraser Valley near the towns of Sardis and Chilliwack, B.C. within S'olh Téméxw, the Traditional Territory of the Stó:lō people. Skowkale (Sq'ewqéyl-l) First Nation has four reserves: Grass 15 and Skowkale 10, Skowkale 11 and Peckw'xe:yles (Peckquaylis), (INAC 2019). Peckw'xe:yles (Peckquaylis) is a shared reserve among 21 Stó:lō Nations and is Skowkale (Sq'ewqéyl-l) First Nation's closest reserve to the proposed Project. It is located on the north bank of the Fraser River in Mission, B.C. and is approximately 54.5 km away from the proposed Project Site. Skowkale (Sq'ewqéyl-l) First Nation also shares the Grass Reserve lands, Peckw'xe:yles reserve lands in Mission, and the Coqualeetza lands. Skowkale 11 and Skowkale 10 are located approximately 92 km away from the proposed Project Site.

Skowkale (Sq'ewqéyl-l) First Nation Traditional Territory centres around Chilliwack, B.C. (Skowkale First Nation n.d.). Skowkale (Sq'ewqéyl-l) First Nation is a member of the Stó:lō Nation within S'ólh Téméxw, the Traditional Territory of the Stó:lō people. The Traditional Territory extends from Langley east to Yale (Stó:lō Service Agency n.d.). Refer to Figure 1B in Appendix A for a map of the S'ólh Téméxw.

Skowkale (Sq'ewqéyl-l) First Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.22 Snuneymuxw First Nation

At the request of Snuneymuxw First Nation, the BC EAO has provided FortisBC with a summary for inclusion in this subsection.

On December 23, 1854, the Snuneymuxw People entered the Treaty of 1854 with the Crown, which is a treaty within the meaning of Section 35 of the Constitution Act, 1982.

The Treaty specifically confirmed protection for Snuneymuxw fisheries and hunting. Snuneymuxw has established rights to hunt over unoccupied lands and fish as formerly within their Traditional Territory pursuant to this Treaty. Snuneymuxw also asserts constitutional collective Aboriginal Rights and Title to Snuneymuxw Territory.

Snuneymuxw identifies their Traditional Territory to include areas of the land and coastal waters on the east coast of Vancouver Island from the vicinity of Courtenay in the north to Sidney and the Gulf Islands in the south and other adjacent islands and surrounding waters across the Strait of Georgia, and inland to Port Alberni and Lake Cowichan on Vancouver Island. The territory extends to the Lower Mainland up the Fraser River to Chilliwack. As the Snuneymuxw followed seasonal rounds, typically in August they travelled to the Fraser River for the salmon runs, returning in the fall to the Nanaimo River for the chum salmon. Snuneymuxw had a fishing village site located on the south bank of the Fraser River upriver from the east end of Barnston Island.

11.2.23 Sol'h Téméxw Stewardship Alliance

The Sol'h Téméxw Stewardship Alliance is an umbrella organization representing 15 of the 30 Stó:lō Nation bands including: Aitchelitz First Nation, Chawathil First Nation, Cheam First Nation, Kwaw-kwaw-Apilt First Nation, Scowlitz First Nation, Shxwhá:y Village, Skawahlook First Nation, Skowkale First Nation, Skwah First Nation, Soowahlie First Nation, Squiala First Nation, Sumas First Nation, Tzeachten First Nation, Yakweakwioose First Nation, and Yale First Nation (STSA 2020). These communities have many reserves located throughout the Fraser Valley. Refer to Figures 1B, 2B, and 3B in Appendix A for maps of the Sol'h Téméxw.

The Traditional Territory of S'ólh Téméxw stretches from the Strait of Georgia in the west, across the Lower Mainland of southwestern B.C., up to Harrison Lake in the north, out to the Coquihalla River in the east, and past the U.S./Canada in the south. The S'ólh Téméxw is centralized around the upper Fraser and Chilliwack River Valleys (STSA 2020; B.C. Treaty 2020d). The proposed Project is found within the S'ólh Téméxw.

Aitchelitz First Nation, Chawathil First Nation, Cheam First Nation, Kwaw-kwaw-Apilt First Nation, Shxwhá:y Village, Skawahlook First Nation, Skowkale First Nation, Skwah First Nation, Soowahlie First Nation, Squiala First Nation, Sumas First Nation, Tzeachten First Nation, and Yakweakwioose First Nation have signed individual Framework Agreements under the *First Nations Land Management Act* (FNL MRC 2021). Scowlitz First Nation and Yale First Nation have not signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.24 Soowahlie First Nation

Soowahlie First Nation Traditional Territory centres around the Upper Fraser Valley Region at Cultus Lake, B.C., within S'ólh Téméxw, the Traditional Territory of the Stó:lō people. Refer to Figure 1B in Appendix A for a map of the S'ólh Téméxw.

Soowahlie First Nation has three reserves: Grass 15, Peckw'xe:yles, and Soowahlie 14 (INAC 2019). Soowahlie 14 is the main community located on the left bank of the Chilliwack River, 13 km south of Chilliwack. The closest reserve to the proposed Project Site is Peckw'xe:yles, a shared reserve, located 55 km away, on the north bank of the Fraser River within the District of Mission.

Soowahlie First Nation has signed a Framework Agreement under the *First Nation Land Management Act* (FNL MRC 2021).

11.2.25 Squamish Nation

Squamish Nation Traditional Territory encompasses the area from Point Grey in the south, to Roberts Creek in the west, north to the height of land to the Elaho River headwaters, including the islands of Howe Sound and the Squamish Valley; then southeast to the confluence of the Soo and Green Rivers, south along the height of land to Port Moody, including the Mamquam River and Indian Arm drainages, then west along the height of land to Point Grey (Squamish Nation 2020). This Traditional Territory includes the cities of Vancouver, West Vancouver, North Vancouver, Burnaby, Port Moody, the District of Squamish, and the Resort Municipality of Whistler, but does not include the proposed Project Area (Squamish Nation 2020; B.C. Treaty 2020e). Refer to Figure 2B in Appendix A for a map of Squamish Nation Traditional Territory.

Squamish Nation has 24 reserves distributed between the Squamish-Lillooet Regional District and Metro Vancouver Regional District, from southwest of Whistler to Vancouver, including Gibson's Landing and the area north of Howe Sound (INAC 2019). The largest proportion of Squamish Nation members reside on several urban reserves in the City of Vancouver, North and West Vancouver, and the District of Squamish (Squamish Nation 2020). The closest reserve to the proposed Project Site is Kitsilano 6, located 16 km away.

Squamish Nation does not currently have an active Framework Agreement under the First Nations *Land Management Act* (FNL MRC 2021).

11.2.26 Stó:lō Nation

The Stó:lō Nation, or the Stó:lō Nation Chiefs Council, is the political partnership of 11 Stó:lō Nations. Members of the Stó:lō Nation Chiefs Council include Aitchelitz First Nation, Leq'á:mel First Nation, Matsqui First Nation, Popkum First Nation, Shxwhá:y Village, Skawahlook First Nation, Skowkale First Nation, Squiala First Nation, Sumas First Nation, Tzeachten First Nation, and Yakwekwioose First Nation (Stó:lō Nation 2018). The Traditional Territory of the Stó:lō People, known as S'ólh Téméxw, extends from Yale to Langley, B.C. (Stó:lō Nation 2018). The proposed Project is located within the S'ólh Téméxw. Please refer to Figures 1B, 2B, and 3B in Appendix A for maps of the S'ólh Téméxw.

Aitchelitz First Nation, Leq'á:mel First Nation, Matsqui First Nation, Popkum First Nation, Shxwhá:y Village, Skawahlook First Nation, Skowkale First Nation, Squiala First Nation, Sumas First Nation, Tzeachten First Nation, and Yakwekwioose First Nation have signed individual Framework Agreements under the First Nations *Land Management Act* (FNL MRC 2021).

11.2.27 Stz'uminus First Nation

Stz'uminus First Nation Traditional Territory encompasses the waters of the Salish Sea into Puget Sound, the Strait of Georgia including the lower portion of Quadra Island, and the Fraser River up to Yale, and includes a portion of south-eastern Vancouver Island inland to Cowichan Lake, as well as the area that is now Richmond, Burnaby, and Delta (Stz'uminus First Nation 2020). Refer to Figure 1A in Appendix A for a map of Stz'uminus First Nation's Traditional Territory in relation to the proposed Project.

Stz'uminus First Nation is a member of the Quw'utsun Nation. The historic Quw'utsun Nation exclusive Aboriginal Title area includes the entirety of Tilbury Island. The Quw'utsun Nation is reclaiming the historic village site of Tl'uqtinus and other proximal lands in what is present day Richmond and Delta, by way of legal proceedings, including the right to fish in the South Arm of the Fraser River (CNA 2019; Ronson 2020). The historic village site of Tl'uqtinus is located approximately 515 m north of the proposed Project Site on the opposite side of the Fraser River. The members of the Quw'utsun Nation have signed a stewardship agreement with the Province for the South Arm of the Fraser River.

Stz'uminus First Nation has four reserves: Chemainus 13, Oyster Bay 12, Say-la-quas 10, and Squaw-hay-one 11 (INAC 2019). Chemainus 13 is the main community and is the closest to the proposed Project Site located 54 km away, on southeast Vancouver Island directly opposite of the mouth of the Fraser River in the Stuart Channel.

Stz'uminus First Nation has signed a Framework Agreement under the First Nations *Land Management Act* (FNL MRC 2021).

11.2.28 Tsartlip First Nation

Tsartlip First Nation has four reserves: Goldstream 13, Mayne Island 6, Senanus Island 10, and South Saanich 1 (INAC 2019). Tsartlip First Nation's main community is South Saanich 1, located near the town of Brentwood Bay, on Vancouver Island. Mayne Island 6 and Senanus Island 10 are found on the Gulf Islands, between Vancouver Island and the Lower Mainland. Goldstream 13 is a shared reserve with Malahat First Nation, Pauquachin First Nation, Tsawout First Nation and Tseycum First Nation. Mayne Island 6, approximately 40 km away, is Tsartlip First Nation's closest reserve to the proposed Project Site. Tsartlip First Nation's administrative office, located at South Saanich 1, is 70.5 km away from the proposed Project Site.

Tsartlip First Nation is an original signatory of the Douglas Treaties in 1852 (B.C. AFN 2021a).

Tsartlip First Nation does not currently have an active Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.29 Tsawout First Nation

Tsawout First Nation has six reserves: Bare Island 9, East Saanich 2, Fulford Harbour 5, Goldstream 13, Pender Island 8, and Saturna Island 7 (INAC 2019). Tsawout First Nation's main community is East Saanich 2, located on the east side of the Saanich Peninsula, is approximately 67 km away from the proposed Project Site. Bare Island 9, Pender Island 8, and Saturna Island 7 are reserves Tsawout First Nation shares with Tseycum First Nation and are found on the Gulf Islands, between Vancouver Island and the Lower Mainland. Goldstream 13 is a shared reserve with Malahat First Nation, Pauquachin First Nation, Tsartlip First Nation, and Tseycum First Nation. Tsawout First Nation's closest reserve to the proposed Project Site is Saturna Island 7, located 40.5 km away.

Tsawout First Nation is an original signatory of the Douglas Treaties in 1852 (B.C. AFN 2021b).

Tsawout First Nation has signed a Framework Agreement under the *First Nations Land Management Act* (FNL MRC 2021).

11.2.30 Tsawwassen First Nation

Tsawwassen First Nation is one of few modern Treaty Nations in B.C. The Tsawwassen First Nation Final Agreement, which became effective on April 3, 2009, is a tri-partite agreement between Canada, B.C., and Tsawwassen First Nation (Tsawwassen First Nation n.d.; B.C. Treaty 2020f).

Under the final agreement, Tsawwassen First Nation has direct control and ownership of 724 ha of land and exercises TLU rights on 10,000 km² of Traditional Territory (shown in Appendix A of the final agreement) (MPWGSC 2010). The proposed Project Area is overlapped by Tsawwassen TLU areas but not Tsawwassen lands. The closest point of the boundary of the Tsawwassen lands is 10 km from the proposed Project Site. The proposed Project is found within Tsawwassen First Nation's Treaty-protected wildlife harvesting area, migratory bird harvesting area, and fishing and bivalve harvesting area (Government of B.C. 2007).

Tsawwassen First Nation Traditional Territory is in the Lower Mainland and extends from the watersheds that feed into Pitt Lake and Burns Bog to the Strait of Georgia, including Salt Spring, Pender, and Saturna Islands and includes the proposed Project Area (B.C. Treaty 2020f). Refer to Figure 1A in Appendix A for a map of the Tsawwassen First Nation treaty area and lands.

11.2.31 Tseycum First Nation

Tseycum First Nation has five reserves: Bare Island 9, Goldstream 13, Pender Island 8, Saturna Island 8, and Union Bay 4 (INAC 2019). Tseycum First Nation's main community is Union Bay, located at on Patricia Bay in the Saanich Peninsula, is approximately 62 km away from the proposed Project Site (B.C. AFN 2021c). Bare Island 9, Pender Island 8, and Saturna Island 7 are reserves Tsawout First Nation shares with Tsawout First Nation and are found on the Gulf Islands, between Vancouver Island and the Lower Mainland. Tseycum First Nation shares Goldstream 13 with Malahat Nation, Pauquachin, Tsartlip First Nation and Tsawout First Nation.

Tseycum First Nation is an original signatory of the historical Douglas Treaties in 1852 (B.C. AFN 2021c).

Tseycum First Nation has signed a Framework Agreement under the First Nations *Land Management Act* (FNLARC 2021).

11.2.32 Tsleil-Waututh Nation

The Tsleil-Waututh Nation Traditional Territory reaches from the Fraser River in the south to Mamquam Lake in the north (Tsleil-Waututh Nation n.d.). This Traditional Territory includes watersheds and wilderness areas in the north and the now urban areas of North Vancouver, Vancouver, Burnaby, Richmond, and Delta to the south (CH2M 2015). Refer to Figure 1C in Appendix A for a map of Tsleil-Waututh Nation Traditional Territory. Tsleil-Waututh Nation has a consultation area that encompasses much of the Lower Mainland (including the proposed Project Area), extending from Mount Garibaldi and the Squamish Valley in the north, to Gibsons in the west, the 49th parallel in the south, and the Lower Fraser River to about the Alouette River in the east.

Tsleil-Waututh Nation has three reserves (Burrard Inlet 3, Inlailawatash 4, and Inlailawatash 4A) (INAC 2019). Inlailawatash 4 and 4A are located at the mouth of the Indian River and head of the Indian Arm of the Burrard Inlet. Burrard Inlet 3, Tsleil-Waututh Nation's main community and is closest to the proposed Project Site, located 18.4 km away, in North Vancouver on the shore of the Burrard Inlet, approximately 2 km east of the north end of the Second Narrows Bridge (INAC 2019).

Tsleil-Waututh Nation has signed a Framework Agreement under the First Nations *Lands Management Act* (FNLARC 2021).

11.2.33 Ts'uubaa-asatx Nation (Lake Cowichan First Nation)

Ts'uubaa-asatx Nation (Lake Cowichan First Nation) is part of the Hul'qumi'num Treaty Group. The Hul'qumi'num Treaty Group Core Traditional Territory includes a portion of southern Vancouver Island from Duncan north of Ladysmith, west to Lake Cowichan, and east to the Gulf Islands. The marine Traditional Territory spans across the Strait of Georgia to include a narrow corridor up the Fraser River to Yale on the mainland, which includes the proposed Project Area (B.C. Treaty 2020a). Refer to Figure 1A in Appendix A for a map of the Hul'qumi'num Treaty Group collective Traditional Territory.

Ts'uubaa-asatx Nation (Lake Cowichan First Nation) has one reserve, Cowichan Lake (or Ts'uubaa-asatx), which is located on Vancouver Island, approximately 30 km west of Duncan, on the east end of the Town of Lake Cowichan (INAC 2019), approximately 82.9 km away from the proposed Project Site.

Ts'uubaa-asatx Nation (Lake Cowichan First Nation) has signed a Framework Agreement under the First Nations *Lands Management Act* (FNL MRC 2021).

11.3 Summary of Early Engagement

FortisBC values feedback from Indigenous nations and recognizes that information shared contributes to a more successful project. FortisBC's engagement with Indigenous nations across B.C. varies based on the individual Indigenous nation's interests and the types of activities that FortisBC is pursuing in their territories.

FortisBC initiated Early Engagement on the proposed Project of the proposed Project in July 2019. Early Engagement has focused on establishing communication with Indigenous nations, information-sharing, the regulatory review process, comments on the draft IPD, and capacity funding discussions.

Since filing the IPD, FortisBC has engaged Indigenous nations on the draft DPD, draft VC Selection document, and draft AIRs. Early drafts of the DPD were provided to Indigenous nations in October 2020 and May 2021. The draft VC Selection document and draft AIR were provided for comment in August 2020 and August 2021.

Refer to Appendix I of the DPD for a summary of engagement with each Indigenous nation.

FortisBC will continue to follow the preferred methods of engagement communicated by Indigenous nations throughout ongoing engagement on the proposed Project.

11.3.1 Key Issues Raised

This section provides a Summary of Issues raised by Indigenous nations during the Early Engagement Phase of the proposed Project.

Key issues raised by Indigenous nations between July 2019 to July 19, 2021 that are relevant to the application decision and will require resolution and potential mitigation are presented in Table 11-1. FortisBC's responses to the key issues raised in Table 11-1 are subject to ongoing discussions with the Indigenous nations.

It is recognized that the information in Table 11-1 is a summary and is not intended to be an exhaustive or comprehensive representation of all the issues raised by Indigenous nations. Refer to Appendix D of the DPD for a list of issues and responses from the Joint Summary of Issues and Engagement.

Refer to Appendix H of the DPD for a list of issues and responses, by Indigenous nation, raised through Early Engagement. FortisBC will continue to engage with Indigenous nations to understand their issues and concerns with the proposed Project and will respond to all issues raised throughout the engagement process.

Table 11-1. Summary of Key Issues Raised by Indigenous Nations

Issues Raised	FortisBC Response
Potential effects of the proposed Project on fish and fish habitat, including migratory habitats and shoreline habitats near the proposed Project Site.	Potential effects to fish and fish habitat for all proposed Project phases will be assessed in the Application under the Fish and Fish Habitat VC. Details of the effects assessment requirements are provided in the draft AIR that is appended to the DPD.
Potential effects on cultural continuation and identity related to Project effects on fish and fish habitat, especially salmon. Salmon and salmon harvesting are closely linked to the cultural identity of Indigenous nations in the proposed Project Area.	FortisBC acknowledges the cultural importance of salmon to Indigenous nations in the proposed Project Area. Potential effects to cultural continuation, and cultural relationships with salmon, will be assessed in the Indigenous nation-specific assessment chapters of the Application and the following Indigenous interests: Harvesting and Subsistence Activities, Cultural Use Sites and Areas, Indigenous Health and Well-being, and Economic Activities.
Use of present-day conditions, rather than historical or pre-contact conditions, to characterize baseline conditions.	The draft AIR has been updated to include a description for each VC of past and present projects and activities (existing and historical context) in the study area and their effect on linked VCs, the Indigenous effects assessments, and Section 25 requirements of the 2018 B.C. <i>Environmental Assessment Act</i> (or Section 22 requirements of the 2019 <i>Impact Assessment Act</i>), to support the consideration of potential Project effects and cumulative effects. FortisBC will engage with the B.C. EAO, IAAC, and Indigenous nations when developing a methodology for assessing pre-baseline historical conditions in the assessment of cumulative effects on Indigenous interests.
Changes in air quality and the potential effects to human health, wildlife, cultural continuation, and subsistence and cultural use of the proposed Project Area.	FortisBC acknowledges the importance of air quality. The Application will consider a project case and cumulative case for air quality emissions. These assessments will use the latest available air quality monitoring data from the vicinity of the proposed Project for the background and existing conditions. The methodology used in the Air Quality assessment of the Assessment will satisfy the requirements of Metro Vancouver, B.C. EAO, IAAC, and the Strategic Assessment of Climate Change.
Potential effects to the accessibility and availability of Traditional Lands and resources during the construction and operations phases.	FortisBC acknowledges Indigenous nations' concerns regarding Project-related activities that could affect rights to access Traditional Lands and resources. Effects to local vegetation and harvesting sites will be assessed in the Vegetation section of the proposed Project Application. Effects on wildlife habitat will be included in the Wildlife and Wildlife Habitat section.
Concerns with increases in noise and the potential effects to human health, wildlife, including marine mammals, cultural continuation, and subsistence and cultural use of the proposed Project Area.	<p>Environmental noise is included in the draft AIR. Human health effects from environmental noise will be assessed using Health Canada's 2017 'Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise'. FortisBC will determine location of the sound level meters in consultation with Indigenous nations and the Technical Advisory Committees (TACs) as part of the EA process.</p> <p>Potential noise effects will be assessed in the proposed Project Application under the Acoustic VC. Potential effects to marine mammals will be evaluated in detail in the Project Application under the Wildlife and Wildlife Habitat VC, including potential effects as a result of noise.</p> <p>Each Indigenous nation will also have a subsection within Section 11, Indigenous Interests that will speak to that Indigenous nation's specific issues including cultural continuation, and subsistence and cultural use. The assessment of effects on Indigenous interests will be informed by the Human Health VC.</p>
Sufficient capacity funding to enable meaningful participation within the EA process.	FortisBC has been engaging with Indigenous nations regarding capacity funding.

Table 11-1. Summary of Key Issues Raised by Indigenous Nations

Issues Raised	FortisBC Response
Human Health VC should consider Indigenous health determinants and VCs linked to human health should include indicators of risks to Indigenous health that can be used to assess effects to cultural use and cultural continuation.	Indigenous health will be considered separately in the proposed Project Application under the Human Health VC. The information is aggregated in the VC assessment and is applicable to all Indigenous nations that are potentially affected by the proposed Project. Each Indigenous nation will also have a subsection within Section 11, Indigenous interests that will speak to that Indigenous nation’s specific issues and unique information.
Disturbance of or damage to archaeological or historical sites, features, and objects as a result of proposed Project activities.	FortisBC acknowledges that a new archaeological assessment is required for the locations that will be disturbed during construction and operations of the proposed Project. FortisBC has completed an AOA for the whole Tilbury site and will conduct an AIA for the Phase 2 Expansion project activities.
Project’s GHG emissions, including cumulative contributions to Provincial, National, and sector GHG emissions.	The DPD includes a preliminary GHG estimate for the proposed Project and a discussion and comparison against Provincial and Federal targets. FortisBC will address GHG emissions and cumulative effects in the proposed Project Application and will include a detailed GHG analysis with an updated comparison to Provincial and Federal targets.

11.4 Summary of Planned Engagement Activities with Indigenous Nations

FortisBC has a long-standing relationship with several Indigenous nations near the Tilbury LNG facility. Continued engagement activities will draw on these existing relationships to ensure that Indigenous nations are informed of the proposed Project and aware of the upcoming EA process. FortisBC will conduct the following engagement activities:

- Meetings to identify or confirm Indigenous nation-specific engagement policies, protocols, or preferences.
- Meetings to discuss the proposed Project, provide Project updates, and discuss topics of interest.
- Project Site visits. FortisBC understands there is a seasonality element to scheduling to be accommodated where possible. FortisBC will facilitate site visits subject to facility safety requirements.
- Seek input from Indigenous nations on selecting VCs, methodology for assessment, and a framework for how to incorporate Indigenous views and Indigenous Knowledge.
- Seek input from Indigenous nations on proposed Project design, EA process and study requirements. This includes sharing drafts of the IPD, Engagement Plan, DPD, draft VC Selection, draft AIR, and proposed Project Application.
- Invite participation in and provide feedback on archaeology and other studies.
- Provide capacity funding for participation in engagement activities.
- Provide capacity funding to support community-specific assessments or studies.
- Work with Indigenous nations on terms of reference for Indigenous Knowledge/Traditional Land Use studies and how Indigenous Knowledge is used to inform the proposed Project Application.
- Offer to facilitate community-specific meetings for identified Indigenous nations.

- Correspond throughout the pre-application and application phases via proposed Project updates, written correspondence (emails, letters), and phone conversations. As identified in subsection 11.3.2 of the DPD, engagement has and will be guided by Indigenous nations preference where they have been identified to FortisBC.
- Work with Indigenous nations to identify training, economic, and employment opportunities.
- Seek input from Indigenous nations on facilitating access to opportunities for bidding and employment.
- In addition to the engagement activities and tools FortisBC will use to engage with Indigenous nations, FortisBC will conduct a Public Consultation Program. Indigenous nations are welcome to attend all such public events.

The Indigenous nations FortisBC has engaged with to-date have expressed varied interest in their level of involvement in engagement with FortisBC about the proposed Project. Indigenous nations have indicated that they plan to work with FortisBC in the following ways moving forward:

- 1) Meet with FortisBC to discuss the proposed Project.
 - Provide feedback on the proposed Project Application documents and methodology.
 - Collaborate with FortisBC on developing and executing monitoring programs.
 - Collaborate with FortisBC on the use and integration of Indigenous Knowledge in the proposed Project Application.
 - Engage with FortisBC on the VC assessment methods.
 - Engage with FortisBC throughout the life cycle of the proposed Project from construction to decommissioning.
- 2) Collaborate with FortisBC to determine the approach for Indigenous led assessments.
 - Collaborate with FortisBC on methodology for CEA and in developing a framework for the assessment of effects on Indigenous interests.
 - Engage with FortisBC to explore potential economic opportunities for Indigenous businesses.

11.5 Preliminary Assessment of Potential Effects to Indigenous Nations Resulting from Project Activities

This section identifies FortisBC's preliminary understanding of the potential effects to Indigenous interests resulting from the proposed Project and is based on regulatory guidelines and engagement with Indigenous nations. Indigenous interests include but are not limited to the current use of land and resources for traditional purposes, physical and cultural heritage, and environmental, health, social, and economic conditions of Indigenous nations. Further understanding of these Indigenous interests and potential Project effects is expected to result from engagement with Indigenous nations throughout the assessment process.

Table 11-2 provides a summary of Potential Effects to Indigenous Interests Resulting from Project Activities.

Table 11-2. Preliminary Identification of Potential Effects to Indigenous Interests Resulting from Project Activities

Project Activities	Indigenous Interest	Potential Effect
Site Preparation and Construction		
<ul style="list-style-type: none"> ▪ Mobilization of construction equipment, temporary offices, and materials to the site by truck ▪ Clearing, filling, and grading of mostly paved/disturbed site ▪ Relocation/ improvements to storm water and erosion and sediment control measures ▪ Ground preparation ▪ Construction Project infrastructure as identified in Table 7-1 ▪ Site clean-up, installation of security ▪ Emissions, discharges, and waste 	<p>Harvesting and Subsistence Activities Cultural Use Sites and Areas Economic Conditions Indigenous Health and Well-being Cultural Continuation Indigenous Governance Systems</p>	<p>Effects on harvesting and subsistence activities</p> <ul style="list-style-type: none"> ▪ Effects on Aboriginal Rights to fish, harvest and hunt for food, ceremonial, and social purposes: <ul style="list-style-type: none"> – Changes to harvesting methods and practices (such as, timing, seasonality) – Changes to the use of lands and resources for traditional purposes – Alteration of harvesting-based livelihoods ▪ Changes to the experience of practicing harvesting rights and effects on the quality, quantity, and availability of resources <ul style="list-style-type: none"> – Loss or alteration of habitat supporting harvested wildlife, fish, bird, or plant species including species of cultural and medicinal importance – Change in surface water quality or quantity (turbidity, hydraulic changes) – Sensory disturbances (such as, noise, odour, dust, visual landscape) ▪ Effects to the accessibility and availability of Traditional Lands and resources: <ul style="list-style-type: none"> – Changes in the ability to travel to or through current use areas <p>Cultural Use Sites and Areas</p> <ul style="list-style-type: none"> ▪ Effects on cultural heritage, and structures, sites or things of historical, archaeological, paleontological or architectural significance: <ul style="list-style-type: none"> – Effects to cultural sites including storied places, habitation sites, place names, and archaeological sites along the South Arm of the Fraser River, Tilbury Island, Lulu Island, and Tl'uqtinus Village site – Effects of proposed Project activities on cultural/ archaeological resources – Changes to the experience using cultural sites and areas ▪ Loss of access to and disenfranchisement from cultural sites including: <ul style="list-style-type: none"> – Changes to physical and cultural or spiritual sites or areas – Disruption or alteration of trails, travelways, navigable waterways and waterbodies – Sensory disturbance (such as, noise, odour, dust, visual landscape) ▪ Effects to cultural and spiritual practices caused by damage or loss of access to cultural sites and areas <p>Social and Economic Conditions</p> <ul style="list-style-type: none"> ▪ Effects on Indigenous nations' ability to improve economic conditions ▪ Effects on Indigenous nations' future aspirations for sites or area surrounding the proposed Project ▪ Changes to employment opportunities, Indigenous businesses, Indigenous Governments revenue ▪ Effects on intercommunity relations and trade ▪ Effects on commercial and non-commercial fishing, hunting, trapping and gathering and cultural or ceremonial activities and practices ▪ Effects on infrastructure and services

Table 11-2. Preliminary Identification of Potential Effects to Indigenous Interests Resulting from Project Activities

Project Activities	Indigenous Interest	Potential Effect
		<p>Indigenous Health and Well-being</p> <ul style="list-style-type: none"> ▪ Effects on the quality, quantity, and availability of harvested country foods ▪ Effects on the value and perceived quality of country foods ▪ Effects on air quality, noise, water quality ▪ Effects on health and well-being from the impacts to traditional ways of life and to cultural sites <p>Cultural Continuation</p> <ul style="list-style-type: none"> ▪ Effects on ability to revitalize, develop and participate in intergenerational cultural transmission ▪ Experiences of being on the land (such as, changes in air quality, noise exposure, effects of vibrations from blasting or other activities) ▪ Current and future availability and quality of country foods (traditional foods) ▪ Disconnection from cultural heritage due to: <ul style="list-style-type: none"> – Changes to sense of place and identity due to changes in accessibility and real and perceived disturbance of the environment – Interruption of the use of travel ways, navigable waterways and waterbodies <p>Indigenous Governance Systems</p> <ul style="list-style-type: none"> ▪ Change to an Indigenous nation's cultural traditions, laws and governance systems that inform how they exercise their Aboriginal Rights. <ul style="list-style-type: none"> – Effects on the ability to use, develop and control Traditional Land, territories and resources – Effects on the ability to implement Indigenous laws, customs and protocols – Participation in decision-making in matters which affect Indigenous Rights in the proposed Project Area – Changes to ongoing conservation efforts to restore important fish species and habitat – Ability to engage in stewardship of lands and resources
Operations		
<ul style="list-style-type: none"> ▪ Natural gas receiving ▪ Natural gas processing and liquefaction ▪ LNG Storage ▪ Control, inspection, and maintenance of Project components 	<ul style="list-style-type: none"> ▪ Indigenous interests are anticipated to be similar to the Site Preparation and Construction Phase (above) 	<ul style="list-style-type: none"> ▪ Potential effects on Indigenous interests are anticipated to be similar to the Site Preparation and Construction Phase (above)

Detailed Project Description Summary

Table 11-2. Preliminary Identification of Potential Effects to Indigenous Interests Resulting from Project Activities

Project Activities	Indigenous Interest	Potential Effect
Decommissioning		
<ul style="list-style-type: none"> ▪ De-energizing, decommissioning purging and dismantling of LNG facilities ▪ Repurposing, recycling and disposal of materials and equipment ▪ Reclamation of the proposed Project Site for alternate use 	<ul style="list-style-type: none"> ▪ Indigenous interests are anticipated to be similar to the Site Preparation and Construction Phase (above) 	<ul style="list-style-type: none"> ▪ Potential effects on Indigenous interests are anticipated to be similar to the Site Preparation and Construction Phase (above)

* Identified interests determined from engagement with Indigenous nations (see subsection 11.3), Table 1 of the Joint Summary of Issues and Engagement, and review of the B.C. EAO's EPIC website ([B.C. EAO 2020](#))

12. Engagement with Governments, the Public, and Other Parties

12.1 Summary of Preliminary Engagement Activities

As identified in the Early Engagement Plan, FortisBC began engagement with stakeholders on the proposed Project in the fall of 2019 (FortisBC 2020). To support this engagement, FortisBC sent notification letters to businesses and residents in the area surrounding the Tilbury LNG facility and sent email notifications to Provincial and local government officials and industry stakeholders.

FortisBC has also participated in meetings with local government and other groups, as requested. FortisBC customers and the public were notified of the proposed Project through several channels, including digital media and customer communication channels, as well as public open houses, where FortisBC presented information and encouraged community feedback.

Due to the extraordinary circumstances of the COVID-19 pandemic, FortisBC has adapted its engagement processes for Early Engagement on the proposed Project. Many community events that FortisBC would normally participate in were cancelled; however, FortisBC is continuing to engage on projects that are considered vital to FortisBC's energy infrastructure, including the proposed Project. FortisBC is also taking steps to keep FortisBC customers, FortisBC employees, and the public safe:

- FortisBC temporarily cancelled in-person meetings and engagement activities to support physical distancing and is using digital alternatives such as teleconferences, virtual open houses, and other digital tools to engage with governments, the public, and other parties.
- FortisBC is working with regulatory agencies to ensure any engagement is safe and effective in facilitating meaningful dialogue.
- FortisBC requested the B.C. EAO extend Early Engagement from 90 days to 150 days and asked IAAC to pause the Planning Process to allow additional time to ensure meaningful engagement.

The company's primary engagement objectives are to raise awareness of the proposed Project in neighbouring communities, receive feedback, and respond to any proposed Project-related inquiries. The following sections outline engagement that has already taken place during the Early Engagement Phase. Ongoing engagement will build on these existing relationships and engagement activities.

12.2 Government

Table 12-1 provides a list of local government, Provincial and Federal governments, and regulatory agencies that FortisBC regularly communicates with to provide updates and respond to questions about the Tilbury LNG facility and the proposed Project.

Table 12-1. Government Agencies FortisBC Engages

Local Government	Provincial	Federal
<ul style="list-style-type: none"> ▪ Delta ▪ Richmond ▪ Metro Vancouver ▪ Fraser Health Authority 	<ul style="list-style-type: none"> ▪ MLA Delta South ▪ MLA Delta North ▪ MLA Richmond North Centre ▪ MLA Richmond-Queensborough ▪ MLA Richmond South Centre ▪ MLA Richmond-Steveston ▪ B.C. EAO ▪ B.C. OGC ▪ BCUC ▪ B.C. MFLNRORD ▪ B.C. MEMLCI ▪ B.C. Ministry of Agriculture, Food and Fisheries ▪ B.C. Ministry of Health ▪ B.C. MoTI ▪ B.C. ENV ▪ Washington State Department of Ecology, Spill Prevention, Preparedness, and Response Program 	<ul style="list-style-type: none"> ▪ Crown Indigenous Relations and Northern Affairs Canada ▪ Delta MP ▪ Richmond MP ▪ IAAC ▪ DFO ▪ Transport Canada ▪ Vancouver Fraser Port Authority ▪ ECCC ▪ WAGE ▪ Indigenous Services Canada ▪ NRCan

Notes:

- B.C. ENV = British Columbia Ministry of Environment and Climate Change Strategy
- B.C. MEMLCI = British Columbia Ministry of Energy, Mines, and Low Carbon Innovation
- B.C. MoTI = British Columbia Ministry of Transportation and Infrastructure
- MLA = Member of Legislative Assembly
- MP = Member of Parliament
- NRCan = Natural Resources Canada
- WAGE = Department of Women and Gender Equality

Through its engagement with these representatives, FortisBC has gained an understanding of community values, and sought recommendations on preferred engagement methods and other matters relating to engagement.

Since filing the IPD, FortisBC has engaged with local government, Provincial, and Federal representatives. Engagement activities included email notifications regarding the regulatory process, meetings, issue-specific workshops and technical presentations, virtual open houses, and the public comment period.

During the period of April 4, 2020 to June 15, 2020, the following Technical Advisors from regulatory agencies provided comments on the IPD:

- B.C. OGC
- Richmond
- ECCC, Climate Action Secretariat
- Fraser Health Authority
- Metro Vancouver
- B.C. MFLNRORD, South Coast Regional Initiatives
- B.C. MFLNRORD, Archaeology Branch
- B.C. Ministry of Agriculture, Food and Fisheries
- B.C. MEMLCI
- B.C. Ministry of Health
- Washington State Department of Ecology, Spill Prevention, Preparedness, and Response Program

During the period of September 30, 2020 to July 19, 2021, the following Technical Advisors from regulatory agencies provided comments on the draft DPD, draft VC Selection document and draft AIR:

- B.C. EAO
- Delta
- DFO
- WAGE
- Richmond
- Fraser Health Authority
- Health Canada
- IAAC
- Metro Vancouver
- B.C. Ministry of Agriculture, Food and Fisheries
- ECCC, Climate Action Secretariat
- B.C. Ministry of Health
- NRCan
- B.C. OGC
- B.C. MFLNRORD, Archaeology Branch
- B.C. MFLNRORD, South Coast Regional Initiatives
- Vancouver Fraser Port Authority
- Washington State Department of Ecology, Spill Prevention, Preparedness, and Response Program

These comments have been incorporated into the draft DPD, draft VC Selection document, and draft AIR, as appropriate, or tracked in responses to key issues raised. Refer to Appendix G of the DPD for a list of key issues raised by reviewers of the draft DPD, draft VC Selection document, and draft AIR and FortisBC's responses.

12.3 Public and Other Interested Parties

The proposed Project was announced to the broader public on February 27, 2020. FortisBC mailed notification letters to businesses and residents within a 2 km radius of the Tilbury LNG facility on May 29, 2020, and again in January 2021 to inform them of the filing of the CPCN to the BCUC. During the June 2020 billing cycle, FortisBC informed residential and commercial customers about the proposed Project via bill inserts, email, and a tile advertisement in the online account portal, which is viewed by up to 20,000 customers per month.

A 45-day public comment period was held from June 1, 2020 to July 16, 2020. Due to the COVID-19 pandemic and the associated physical distancing requirements, two open houses hosted by IAAC and the B.C. EAO were held virtually via webcast and teleconference on June 18 and 23, 2020. The open houses included presentations from IAAC, B.C. EAO, and the FortisBC Project team, followed by a question-and-answer period. Approximately 150 and 100 participants joined the virtual open houses respectively and about 80 comments and questions were received in total. The topics raised during the virtual open houses reflect similar issues submitted in writing to the B.C. EAO during the public comment period including:

- Project details
- Purpose and need for the proposed Project
- Accidents, malfunctions, and public safety
- Noise and lighting
- Climate change and GHG emissions
- Cumulative effects
- Economic information about the proposed Project
- Potential effects to environment including marine mammals, fish, and fish habitat

Overall, more than 2,500 public comments were received during the public comment period. These were categorized into key themes by IAAC and the B.C. EAO in the Joint Summary of Issues and Engagement for the Tilbury Phase 2 LNG Expansion project (Joint Summary of Issues and Engagement). FortisBC's responses to the key issues raised are provided in Table 2 of Appendix D of the DPD.

12.4 Summary of Planned Engagement Activities with Governments, the Public and Other Interested Parties

The focus of FortisBC's engagement with government, the public, and other interested parties is to ensure that they are informed, have access to information, and are provided with multiple opportunities to provide feedback throughout all phases of the proposed Project.

The following is a summary of planned engagement activities with governments:

- Provide regular updates to local governments and elected officials to keep them informed of the proposed Project and seek input
- When feasible, offer site visits to government representatives to provide on-site information and opportunities for questions and feedback
- Seek participation from local government staff and local first responders in future emergency preparedness exercises
- Participate in any B.C. EAO-led engagement activities with local government, Provincial and Federal government representatives, and agencies as appropriate
- Work with Technical Advisors throughout the proposed Project Application process
- Work with local government, the B.C. OGC, and other agencies regarding permitting requirements to maintain transparency, ensure compliance, and seek and address feedback

The following is a summary of planned engagement activities with the public and other interested parties:

- Provide regular updates to [TalkingEnergy.ca](https://www.talkingenergy.ca) and monitor the dedicated Project-specific email and phone line to respond to questions and requests for information
- Continue to participate in online events with the B.C., Richmond, and Delta chambers of commerce and support local community events virtually
- Explore opportunities to host virtual or, when feasible, in-person activities to educate interested parties and help the public learn about the properties of LNG
- Promote educational materials such as videos and articles through social media channels

Once the B.C. EAO process is confirmed, FortisBC will share its next steps for engagement with the public and other interested parties. Methods for notification may include letters, emails, phone calls, updates to [TalkingEnergy.ca](https://www.talkingenergy.ca), and meeting requests. FortisBC's commitment to engagement extends beyond the proposed Project and will continue for as long as FortisBC operates in, and continues to deliver essential services to, the communities of B.C.

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Detailed Project Description Summary

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Appendix A
**Indigenous Traditional Territories,
Treaty Lands, and Reserve Locations**

**FIGURE 1A
PARTICIPATING
INDIGENOUS NATIONS
IN RELATION TO
TILBURY PHASE 2 LNG
EXPANSION PROJECT**

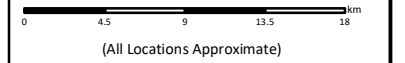
- █ Hul'qumi'num Treaty Group
 - Cowichan Tribes (Hul'qumi'num Treaty Group; Quw'utsun Nation)
 - Halalt First Nation (Hul'qumi'num Treaty Group; Quw'utsun Nation)
 - Ts'uubaa-asatx [Lake Cowichan First Nation] (Hul'qumi'num Treaty Group)
 - Lyackson First Nation (Hul'qumi'num Treaty Group; Quw'utsun Nation)
 - Penelakut Tribe (Hul'qumi'num Treaty Group; Quw'utsun Nation)
- █ Stz'uminus First Nation (Quw'utsun Nation)
- █ Tsawwassen First Nation
- █ Tsawwassen Treaty Lands

- Base Map**
- Project Area
 - First Nations Reserve
 - International Border

Project Site at NTS Grid: 092G03

49° 8' 27.4" N 123° 2' 4.8" W

Scale: 1:425,000



(All Locations Approximate)

Jacobs

Project Number CE778100

BC Albers Projection, NAD83. Graticule: UTM Zone 10 North.
 Traditional Territory/Statement of Intent: BC MFLNRO 2013, TERA Environmental Consultants 2009; First Nation Reserves: Government of Canada 2018; International Boundary: ESRI 2005; Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Mapped By: SL

Checked By: DN

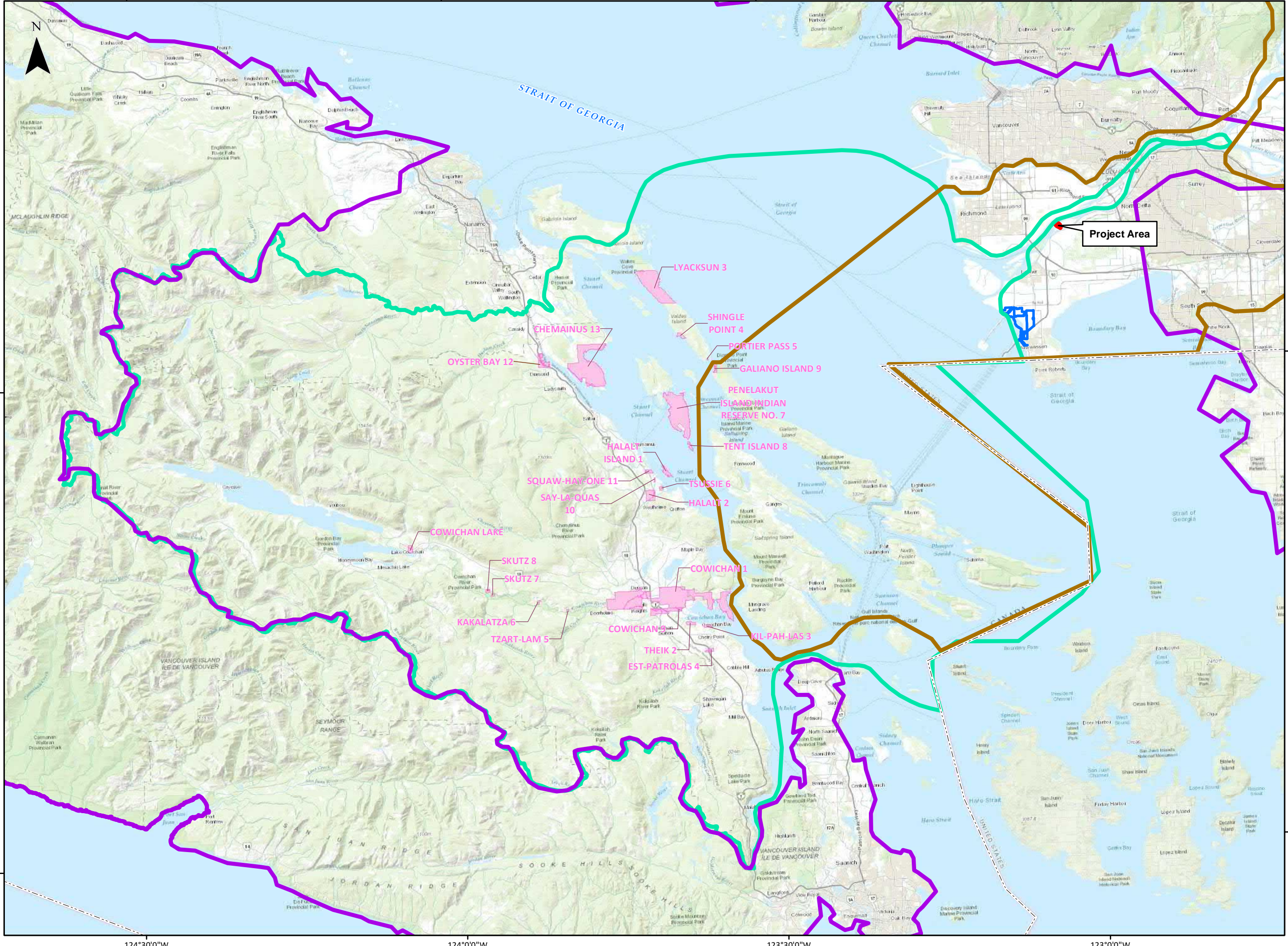


FIGURE 1B

**PARTICIPATING
INDIGENOUS NATIONS
IN RELATION TO
TILBURY PHASE 2 LNG
EXPANSION PROJECT**

- Chawathil First Nation
- S'olh Téméxw Territory
- Cheam First Nation
- S'olh Téméxw Stewardship Alliance

Base Map

- Project Area
- First Nations Reserve
- International Border

Project Site at NTS Grid: 092G03
49° 8' 27.4" N 123° 2' 4.8" W

Scale: 1:570,000
0 6 12 18 24 km
(All Locations Approximate)



Project Number CE778100

BC Albers Projection, NAD83. Graticule: UTM Zone 10 North.
Traditional Territory/Statement of Intent: BC MFLNRO 2013, TERA Environmental Consultants 2009; First Nation Reserves: Government of Canada 2018; International Boundary: ESRI 2005; Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Mapped By: SL Checked By: DN

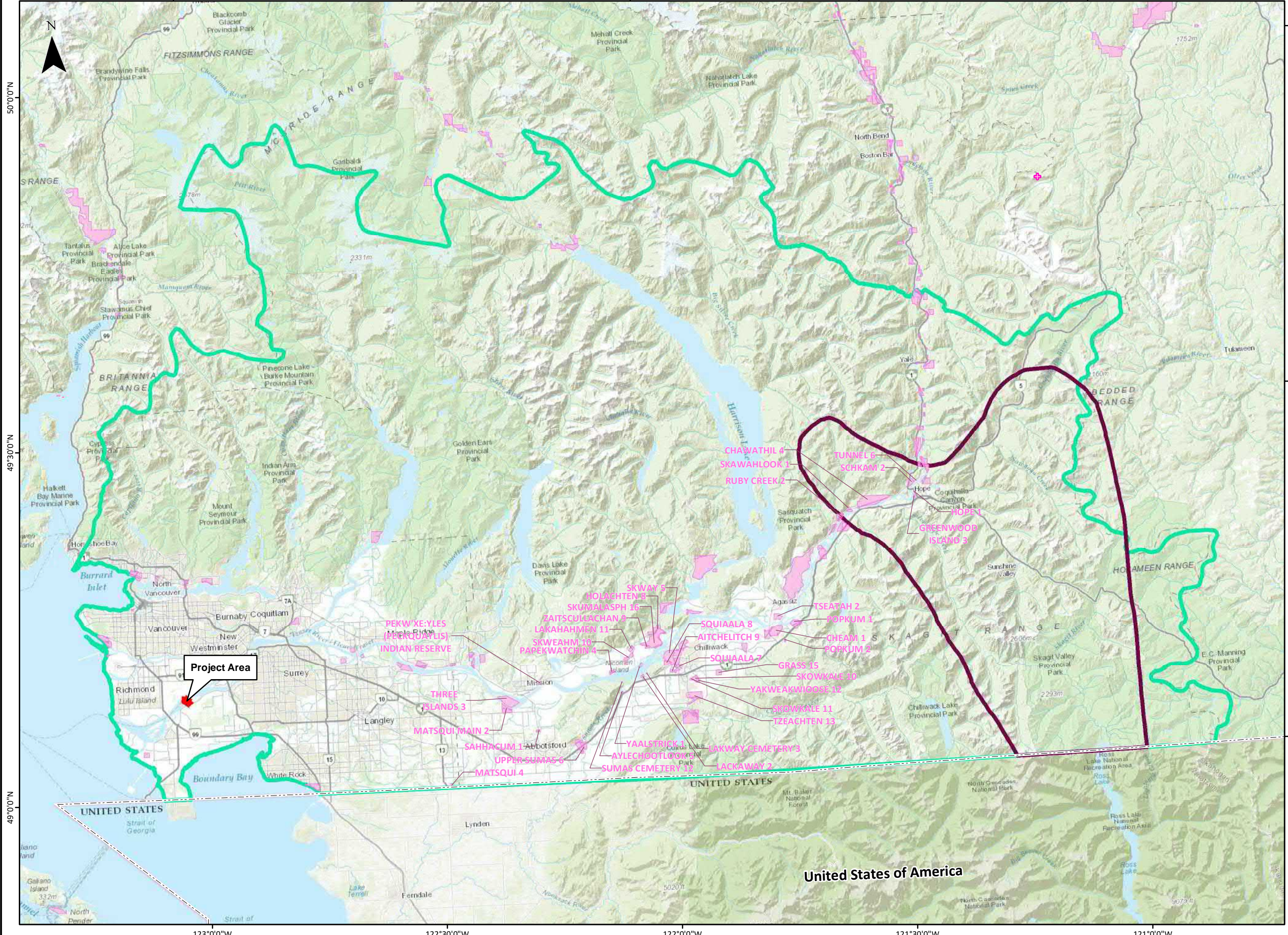
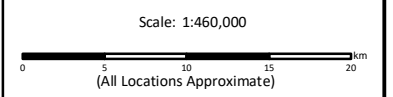


FIGURE 1C PARTICIPATING INDIGENOUS NATIONS IN RELATION TO TILBURY PHASE 2 LNG EXPANSION PROJECT

- Kwantlen First Nation
 - Musqueam Indian Band
 - Tsleil-Waututh Nation
- Base Map**
- Project Area
 - First Nations Reserve
 - International Border

Project Site at NTS Grid: 092G03
49° 8' 27.4" N 123° 2' 4.8" W

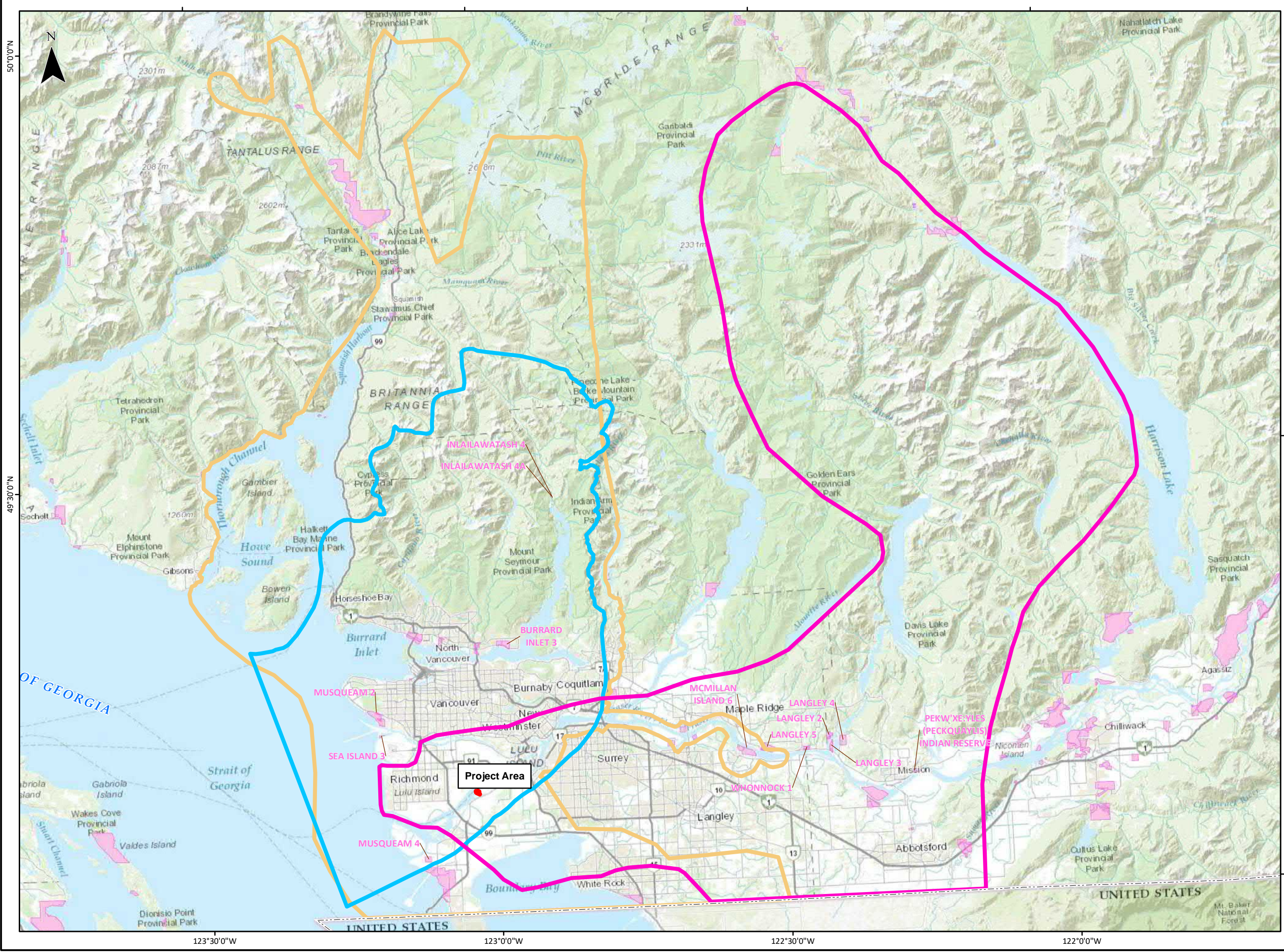
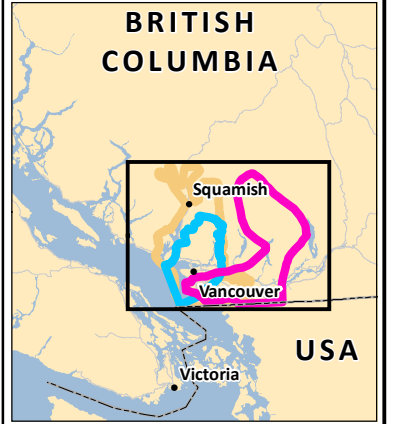


Project Number CE778100

BC Albers Projection, NAD83. Graticule: UTM Zone 10 North.
Traditional Territory/Statement of Intent: BC MFLNRO 2013, TERA Environmental Consultants 2009; First Nation Reserves: Government of Canada 2018; International Boundary: ESRI 2005; Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Mapped By: SL Checked By: DN



INDIGENOUS NATIONS NOT FORMALLY IDENTIFIED AS A PARTICIPATING INDIGENOUS NATION IN RELATION TO TILBURY PHASE 2 LNG EXPANSION PROJECT

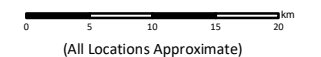
- █ Semiahmoo First Nation
- ◆ Métis Nation B.C. Chartered Communities
 - Chilliwak Métis Association
 - Cowichan Valley Métis Association
 - Fraser Valley Métis Association
 - Golden Ears Métis Association
 - North Fraser Métis Association
 - Nova Métis Heritage Association
 - Waceyá Métis Society

- Base Map**
- Project Area
 - First Nations Reserve
 - International Border

Project Site at NTS Grid: 092G03

49° 8' 27.4" N 123° 2' 4.8" W

Scale: 1:700,000



(All Locations Approximate)

Jacobs

Project Number CE778100

BC Albers Projection, NAD83. Graticule: UTM Zone 10 North.
 Traditional Territory/Statement of Intent: BC MFLNRO 2013, TERA Environmental Consultants 2009; First Nation Reserves: Government of Canada 2018; Métis Nation BC Chartered Communities: Métis Nation 2021; International Boundary: ESRI 2005; Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, Geobase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Mapped By: SL

Checked By: JS

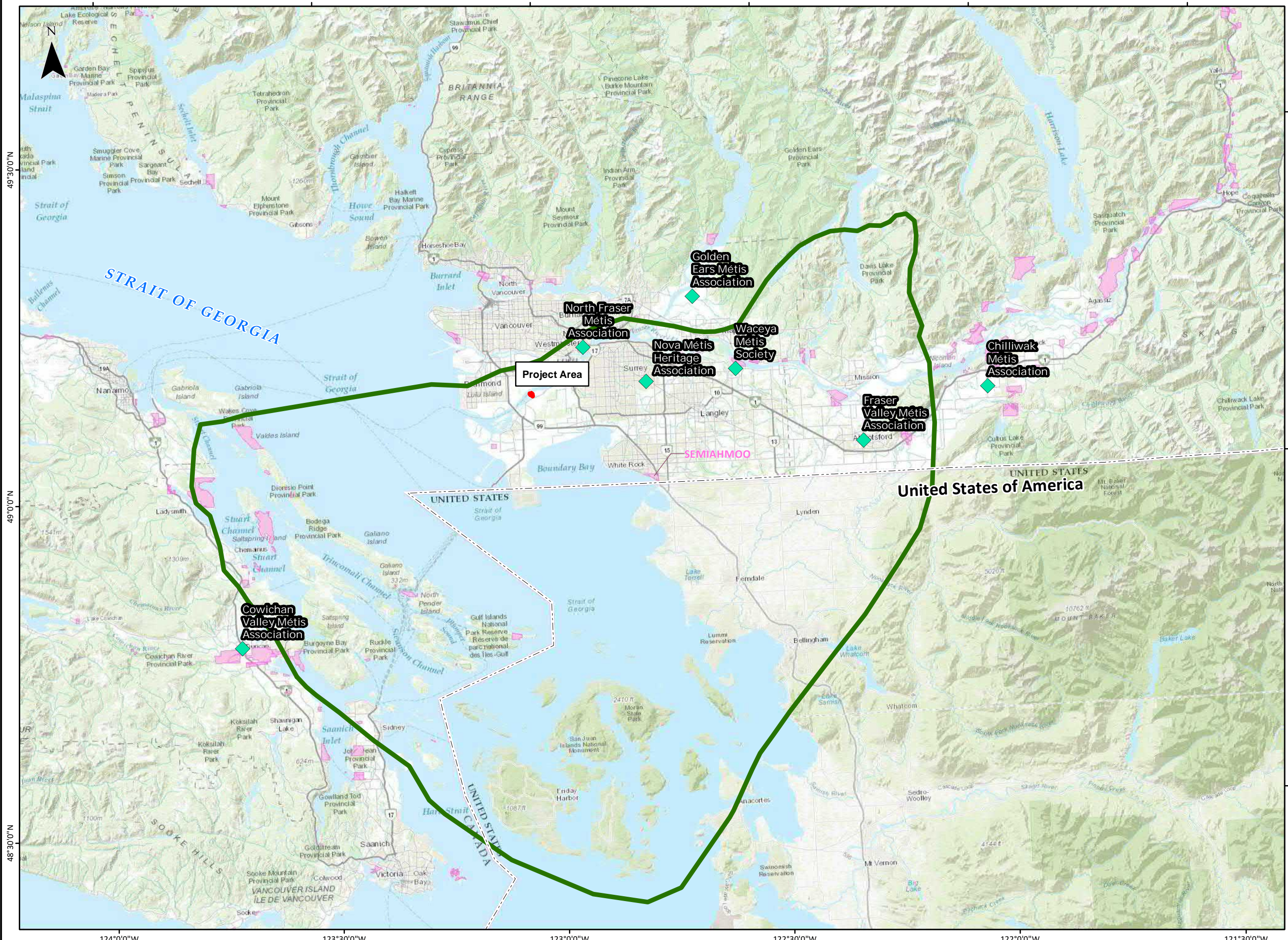


FIGURE 2B
INDIGENOUS NATIONS NOT FORMALLY IDENTIFIED AS A PARTICIPATING INDIGENOUS NATION IN RELATION TO TILBURY PHASE 2 LNG EXPANSION PROJECT

- █ Katzie First Nation
 - █ Solh Témewx Territory
 - █ Squamish Nation
- Base Map**
- Project Area
 - First Nations Reserve
 - International Border

Project Site at NTS Grid: 092G03
 49° 8' 27.4" N 123° 2' 4.8" W

Scale: 1:750,000

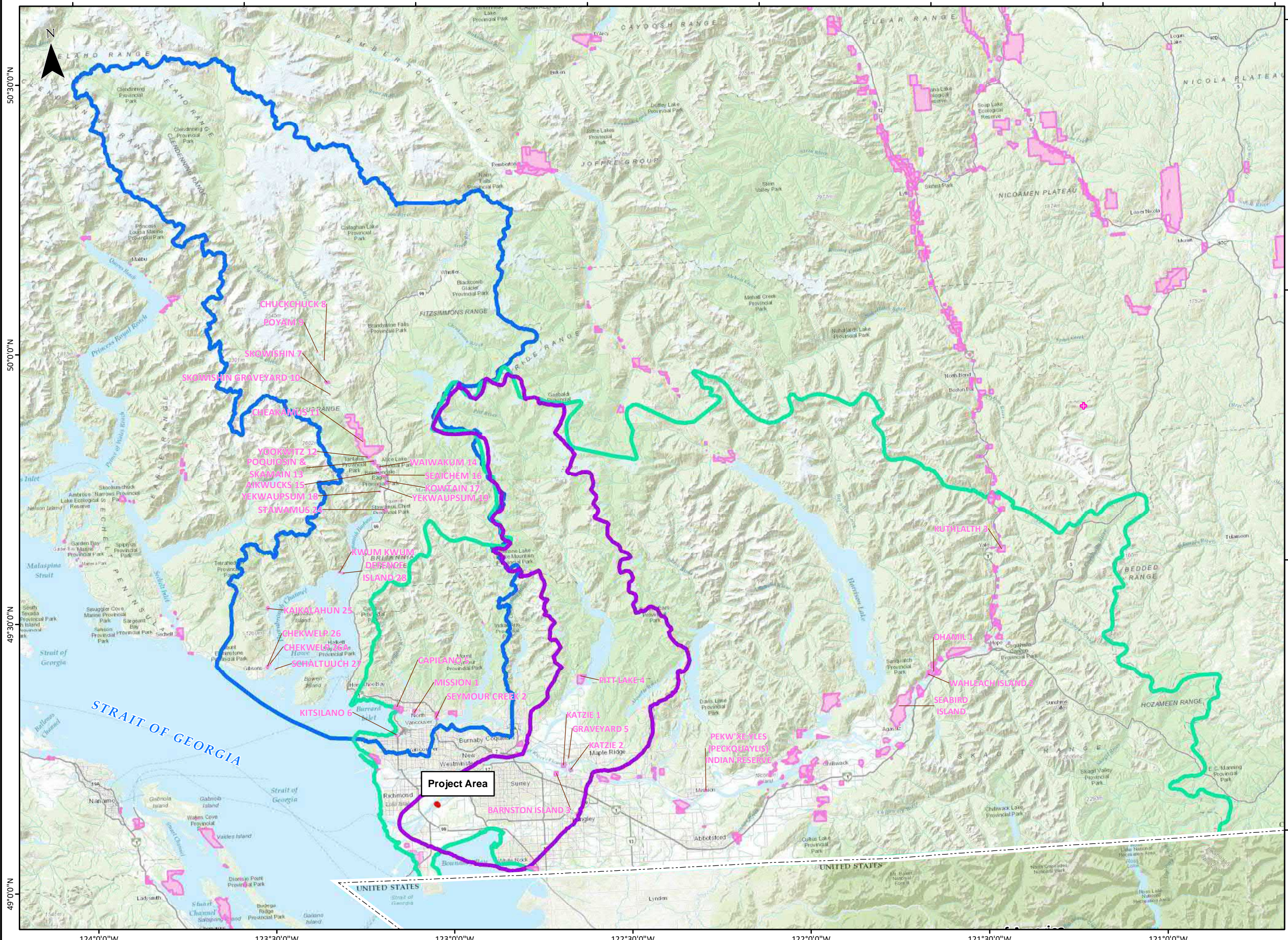


Project Number CE778100

BC Albers Projection, NAD83. Graticule: UTM Zone 10 North.
 Traditional Territory/Statement of Intent: BC MFLNRO 2013, TERA Environmental Consultants 2009; First Nation Reserves: Government of Canada 2018; International Boundary: ESRI 2005; Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community


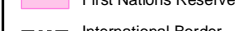

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Mapped By: SL Checked By: DN



ADDITIONAL INDIGENOUS NATIONS IDENTIFIED IN THE JOINT SUMMARY OF ISSUES AND ENGAGEMENT IN RELATION TO TILBURY PHASE 2 LNG EXPANSION PROJECT

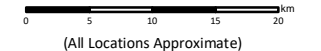
-  Malahat Nation
-  Pauquachin First Nation
-  Tsartlip First Nation
-  Tswout First Nation
-  Tseycum First Nation

- Base Map**
-  Project Area
 -  First Nations Reserve
 -  International Border

Project Site at NTS Grid: 092G03

49° 8' 27.4" N 123° 2' 4.8" W

Scale: 1:600,000



(All Locations Approximate)

Jacobs

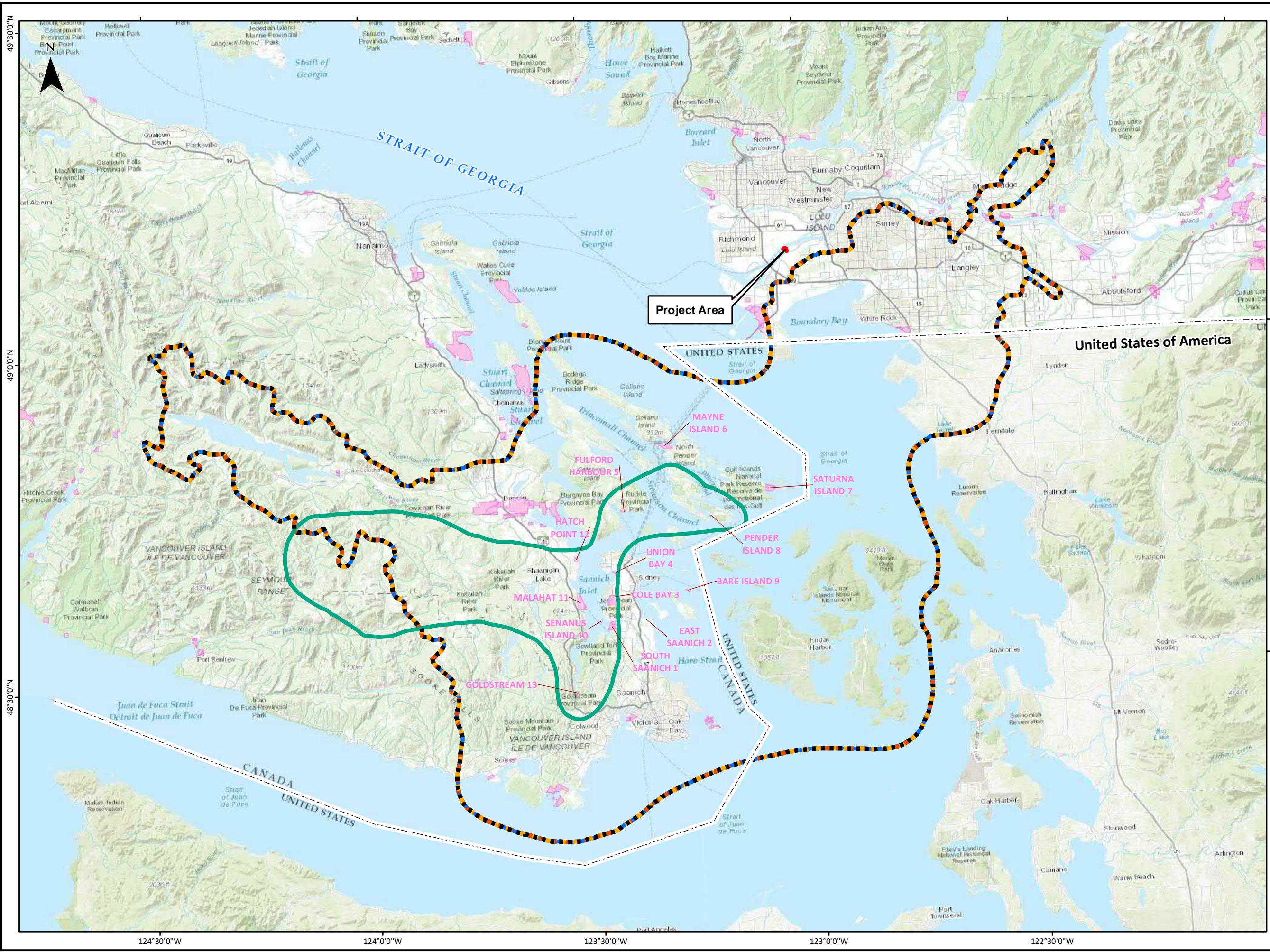
Project Number CE778100

BC Albers Projection, NAD83. Graticule: UTM Zone 10 North.
 Traditional Territory/Statement of Intent: BC MFLNRO 2013, TERA Environmental Consultants 2009; First Nations Reserves: Government of Canada 2018; International Boundary: ESRI 2005; Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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Mapped By: SL

Checked By: JS



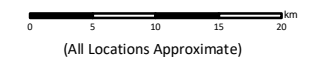
ADDITIONAL INDIGENOUS NATIONS IDENTIFIED IN THE JOINT SUMMARY OF ISSUES AND ENGAGEMENT IN RELATION TO TILBURY PHASE 2 LNG EXPANSION PROJECT

- Kwikwetlem First Nation
 - Sq'ewlets First Nation (Scowlitz)
 - Solh Téméxw Territory
 - Popkum First Nation
- Base Map**
- Project Area
 - First Nations Reserve
 - International Boundary

Project Site at NTS Grid: 092G03

49° 8' 27.4" N 123° 2' 4.8" W

Scale: 1:600,000



(All Locations Approximate)

Jacobs

Project Number CE778100

BC Albers Projection, NAD83. Graticule: UTM Zone 10 North.
 Traditional Territory/Statement of Intent: BC MFLNRO 2013, TERA Environmental Consultants 2009, First Nations Reserves: Government of Canada 2018, International Boundary: ESRI 2005, Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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