



Prince Rupert
Gas Transmission Project



Project Summary

PRGT4776-TC-EN-RP-0001

May 21, 2013

TABLE OF CONTENTS

| | | |
|------------|---|-----------|
| 1.0 | GENERAL INFORMATION..... | 1 |
| 2.0 | PROPONENT CONTACT INFORMATION..... | 3 |
| 3.0 | PROJECT OVERVIEW | 5 |
| 3.1 | Marine Alternatives to the Conceptual Corridor | 5 |
| 3.2 | Project Purpose and Rationale | 6 |
| 3.3 | Regulatory Framework | 6 |
| 3.3.1 | Expected Permits and Authorizations..... | 6 |
| 3.4 | Areas of Federal Interest..... | 9 |
| 3.4.1 | Federal Authorizations..... | 9 |
| 4.0 | PROJECT DESCRIPTION | 11 |
| 4.1 | Scope of the Project | 11 |
| 4.1.1 | Pipeline | 11 |
| 4.1.2 | Watercourse and Inlet Crossings | 11 |
| 4.1.3 | Marine Alternatives | 12 |
| 4.1.4 | Meter Stations | 12 |
| 4.1.5 | Compressor Stations | 12 |
| 4.1.6 | Mainline Valves | 12 |
| 4.1.7 | Supervisory Control and Data Acquisition (SCADA) System..... | 12 |
| 4.1.8 | Communication Links and Power Supply | 13 |
| 4.1.9 | In-Line Inspection Facilities | 13 |
| 4.1.10 | Cathodic Protection..... | 13 |
| 4.1.11 | Temporary Infrastructure | 13 |
| 4.2 | Project Schedule..... | 13 |
| 4.3 | Project Activities..... | 13 |
| 5.0 | NISGA’A NATION ENGAGEMENT | 17 |
| 6.0 | ABORIGINAL ENGAGEMENT | 19 |
| 7.0 | PUBLIC ENGAGEMENT | 21 |
| 8.0 | ENVIRONMENTAL SETTING AND POTENTIAL EFFECTS..... | 23 |
| 8.1 | Physical Environment | 23 |
| 8.2 | Atmospheric Environment | 24 |
| 8.3 | Acoustic Environment | 24 |
| 8.4 | Aquatic Species, Fish and Fish Habitat | 24 |
| 8.5 | Terrestrial Ecosystems, Vegetation and Wildlife | 27 |
| 8.5.1 | Soils..... | 27 |

| | | |
|-------------|---|-----------|
| 8.5.2 | Vegetation and Wetlands | 27 |
| 8.5.3 | Wildlife | 28 |
| 8.6 | Land and Land Use | 31 |
| 8.6.1 | Protected Areas and Recreation Areas..... | 31 |
| 8.6.2 | Reserves Defined Under the Indian Act | 32 |
| 8.7 | Archaeological and Heritage Resources | 32 |
| 8.8 | Traditional Ecological Knowledge and Traditional Land Use | 32 |
| 8.9 | Toxic and Hazardous Materials | 33 |
| 8.10 | Waste Disposal..... | 33 |
| 8.11 | Accidents and Malfunctions | 33 |
| 9.0 | POTENTIAL CUMULATIVE EFFECTS | 35 |
| 10.0 | CONCLUSION..... | 37 |

LIST OF FIGURES

Figure 3-1: Prince Rupert Gas Transmission Conceptual Corridor..... 5

LIST OF TABLES

Table 3-1: Potential Permit Requirements during Project Planning..... 7
Table 3-2: Potential Permit Requirements prior to Project Construction..... 7
Table 3-3: Potential Permit Requirements during and following Project Construction..... 9
Table 4-1: Approximate Project Location 11
Table 4-2: Project Schedule..... 14
Table 6-1: Aboriginal Groups..... 19
Table 8-1: Fish Species Occurrence in Major Basins..... 25
Table 8-2: Designated Species of Management Concern..... 28

1.0 GENERAL INFORMATION

Prince Rupert Gas Transmission Ltd. (PRGT) is proposing to construct and operate a sweet natural gas pipeline from a point near Hudson's Hope, BC, to Progress Energy Canada Ltd.'s (Progress) proposed Pacific Northwest LNG export facility near Prince Rupert, at Lelu Island, within the District of Port Edward, BC. PRGT is a wholly owned subsidiary of TransCanada PipeLines Limited (TransCanada). The Prince Rupert Gas Transmission Project (Project) involves the construction and operation of approximately 750 km of 48 inch (NPS 48) (1,219 mm) diameter pipeline, metering facilities near the receipt and delivery points, and two compressor stations with provisions for up to six additional compressor station sites to allow for future expansion. The Project would have an initial capacity of approximately 2.0 billion cubic feet per day (bcf/d) (56.6 million m³/d) with the potential for expansion up to approximately 3.6 bcf/d (101.9 million m³/d). The expansion scenarios do not require the construction of any additional pipeline but would involve a potential increase in compression capacity for the Project.

The Project would require the construction of temporary infrastructure, such as access roads, temporary bridges, stockpile sites, borrow sites, contractor yards and construction camps.

2.0 PROPONENT CONTACT INFORMATION

| | |
|---|--|
| Name of Designated Project | Prince Rupert Gas Transmission Project |
| Name of Proponent | Prince Rupert Gas Transmission Limited Partnership (PRGT) is a wholly owned subsidiary of TransCanada PipeLines Limited (TransCanada). PRGT is the general partner and acts on behalf of Prince Rupert Gas Transmission Limited Partnership. |
| Address | Prince Rupert Gas Transmission Project 450 – 1 st Street SW, Calgary, AB T2P 5H1 |
| Telephone | (403) 920-2000 |
| Fax | (403) 920-2200 |
| Primary Contact | Marilyn Carpenter Director, Environmental and Regulatory Permitting Email: marilyn_carpenter@transcanada.com |
| Secondary Contact | Joel Forrest Director, Regulatory Law & Services Email: joel_forrest@transcanada.com |
| Lead Executive of Prince Rupert Gas Transmission | Tony Palmer President, Prince Rupert Gas Transmission PipeLine Ltd. Email: tony_palmer@transcanada.com |

3.0 PROJECT OVERVIEW

At this stage, the conceptual corridor for the Project follows a path from northeastern BC to the District of Port Edward (see Figure 3-1). This 2-km-wide conceptual corridor may be adjusted as new information, gained through continued technical, environmental and constructability assessments, becomes available. PRGT is also seeking input from Aboriginal groups, landowners and stakeholders on their perspective as to the best path for the Project corridor.

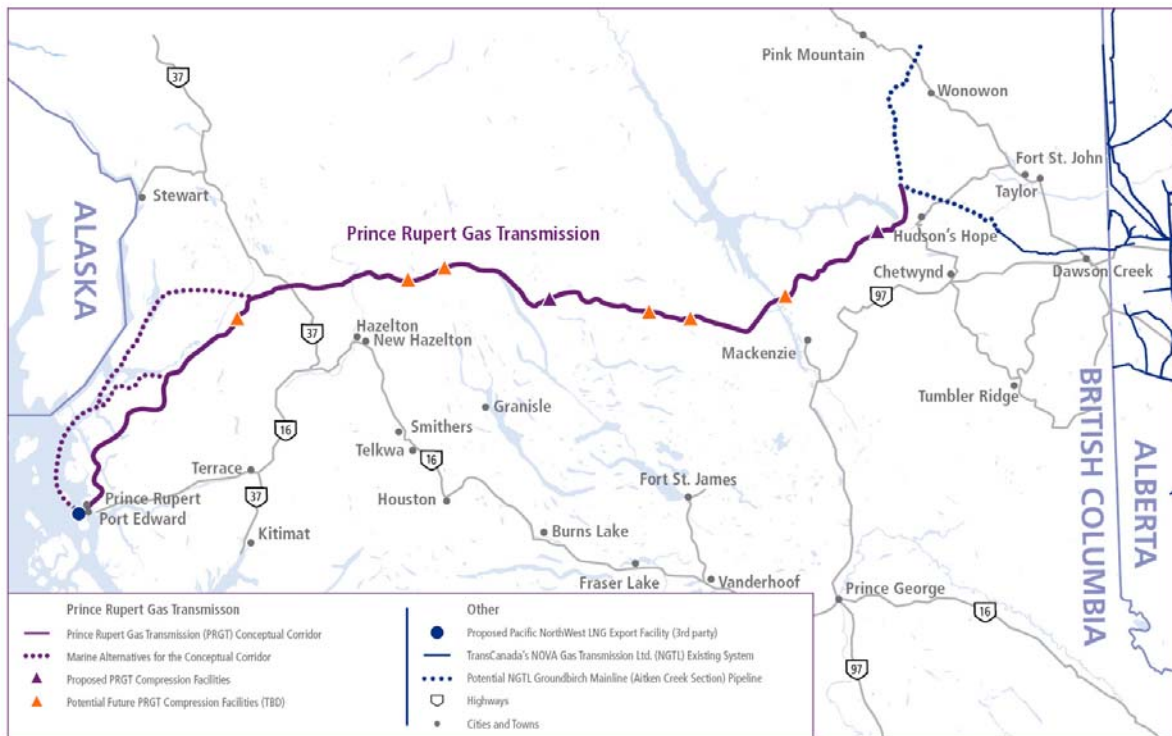


Figure 3-1: Prince Rupert Gas Transmission Conceptual Corridor

3.1 MARINE ALTERNATIVES TO THE CONCEPTUAL CORRIDOR

In addition to the conceptual corridor, PRGT is considering two marine routing alternatives (Marine Alternatives) for a portion of the route (see Section 4.1.3). One alternative would commence west of Cranberry Junction at the eastern end of Alice Arm (Alternative 1). The second alternative would run along the Nasoga Gulf and continue offshore to Lelu Island (Alternative 2). The Marine Alternatives may be required if ongoing technical assessment and Aboriginal and stakeholder engagement determine that a marine route option may be more appropriate for portions of the conceptual corridor.

3.2 PROJECT PURPOSE AND RATIONALE

TransCanada has entered into an agreement with Progress to design, build, own and operate the Project, which would provide natural gas transportation service to the proposed Pacific Northwest LNG export facility. Progress will enter into a transportation services agreement with PRGT for transportation service to this facility. Consequently, the Project will be required to construct and operate a buried pipeline to transport natural gas from gas producing areas in northeastern British Columbia to the proposed Pacific Northwest LNG export facility.

The Project would also provide western Canadian gas producers with access to new natural gas markets. The Project would interconnect with a proposed extension of the NOVA Gas Transmission Ltd. system (NGTL System) and would have a connection with Westcoast Energy Inc.'s Transportation North Pipeline System.

3.3 REGULATORY FRAMEWORK

The Project is wholly located within the province of BC and involves the construction of more than 40 km of pipeline that is greater than 323.9 mm in diameter. The Project may also involve the direct physical disturbance of greater than or equal to two hectares of foreshore or submerged land, or a combination of foreshore and submerged land, below the natural boundary of a stream, marine coastline or estuary. Consequently, pursuant to Table 8, section 4 of the *Reviewable Projects Regulation* under the BC *Environmental Assessment Act* (BCEAA), an Environmental Assessment Certificate will be required. A project description is needed to initiate the provincial environmental assessment process.

Pursuant to section 14 of the schedule to the federal *Regulations Designating Physical Activities*, a project involving the construction, operation, decommissioning and abandonment of a gas pipeline with more than 75 km in length of new right-of-way (ROW) is a designated project. As the Project meets this criterion, it is a designated project and is therefore subject to the provisions of the *Canadian Environmental Assessment Act, 2012* (CEAA). Under CEAA, a project description is required to initiate the screening process through which the Canadian Environmental Assessment Agency will determine whether a federal environmental assessment is required.

PRGT will also require a permit to construct and operate the Project pursuant to section 25 of the BC *Oil and Gas Activities Act* (OGAA).

3.3.1 Expected Permits and Authorizations

In addition to the environmental assessment decisions by federal and provincial ministers, the permits, licences, approvals and authorizations listed in Tables 3-1, 3-2

and 3-3 may be required. The federal and provincial permits and authorizations have been grouped according to the project phase during which they will be required.

Table 3-1: Potential Permit Requirements during Project Planning

| Permit / Consent | Legislation | Responsible Agency |
|--|---|-------------------------------|
| Provincial | | |
| Investigative use permits (e.g., drilling investigations, helipad construction): Temporary Occupation of Crown Land and Cutting Permits | <i>Land Act</i> , section 14 | BC OGC |
| | <i>Forest Act</i> | BC OGC |
| Approval for Short Term Use of Water | <i>Water Act</i> , section 8 | BC OGC |
| Heritage Investigation Permit | <i>Heritage Conservation Act</i> , section 14 | BC OGC; Archaeology Branch |
| Fish Collection Permit | <i>Wildlife Act</i> | MFLNRO |
| Forest Service Road Use | <i>Forest Act</i> | BC OGC |
| Ancillary Sites (e.g., camps): Temporary Occupation of Crown Land and Licence of Occupation and Cutting Permit | <i>Land Act</i> , section 14/39 | BC OGC |
| | <i>Forest Act</i> | BC OGC |
| Approval for Changes in and about a Stream | <i>Water Act</i> , section 9 | BC OGC |

Table 3-2: Potential Permit Requirements prior to Project Construction

| Permit / Consent | Legislation | Responsible Agency |
|--|---|-------------------------------|
| Provincial | | |
| Master Licence to Cut | <i>Forest Act</i> , section 47 | BC MFLNRO |
| Pipeline: Construction and Operation of a Pipeline, Temporary Occupation of Crown Land and Licence of Occupation, Cutting permit, <i>Heritage Conservation Act</i> Clearance, and Approval for Changes in and about a stream | <i>Oil & Gas Activities Act</i> , section 24/25 | BC OGC |
| | <i>Land Act</i> , section 14/39 | BC OGC |
| | <i>Forest Act</i> , sections 47 and 117 | BC OGC |
| | <i>Heritage Conservation Act</i> | BC OGC; Archaeology Branch |
| | <i>Water Act</i> , section 9 | BC OGC |

Table 3-2: Potential Permit Requirements prior to Project Construction (cont'd)

| Permit / Consent | Legislation | Responsible Agency |
|---|---|-------------------------------|
| Provincial (cont'd) | | |
| Facilities: Construction and Operation, Temporary Occupation of Crown Land and Licence of Occupation, Cutting permit, <i>Heritage Conservation Act</i> Clearance, and Approval for Changes in and about a stream (cont'd) | <i>Oil & Gas Activities Act</i> | BC OGC |
| | <i>Land Act</i> , section 14/39 | BC OGC |
| | <i>Forest Act</i> | BC OGC |
| | <i>Heritage Conservation Act</i> | BC OGC; Archaeology Branch |
| | <i>Water Act</i> , section 9 | BC OGC |
| Roads: Temporary Occupation of Crown Land and Licence of Occupation, Cutting permit, <i>Heritage Conservation Act</i> Clearance, and Approval for Changes in and about a stream | <i>Land Act</i> , section 14/39 | BC OGC |
| | <i>Forest Act</i> | BC OGC |
| | <i>Heritage Conservation Act</i> | BC OGC; Archaeology Branch |
| | <i>Water Act</i> , section 9 | BC OGC |
| Prescribed Roads (private land) | <i>Oil and Gas Activities Act</i> | BC OGC |
| Site Alteration Permit | <i>Heritage Conservation Act</i> , section 12 | BC OGC |
| Forest Service Road Use | <i>Forest Act</i> | BC OGC |
| Approval for Short Term Use of Water | <i>Water Act</i> , section 8 | BC OGC |
| Non-farm use on ALR lands (for facilities) | <i>Agricultural Land Commission Act</i> | ALC/BC OGC |
| Federal | | |
| Authorization to cause a harmful alteration or disruption, or the destruction, of fish habitat | <i>Fisheries Act</i> (section 35(2)) | DFO |
| Approval to Interfere with Navigation | <i>Navigable Waters Protection Act</i> | Transport Canada |
| Explosives User Magazine License | <i>Explosives Act</i> | Natural Resources Canada |
| Disposal of Material at Sea | <i>Canadian Environmental Protection Act</i> , section 127(1) | Environment Canada |

Table 3-3: Potential Permit Requirements during and following Project Construction

| Permit / Consent | Legislation | Responsible Agency |
|--|-------------------------------------|------------------------|
| Provincial | | |
| Fish Collection Permit | <i>Wildlife Act</i> | BC MFLNRO |
| Wildlife Sundry Permits (Beaver dam removal, wildlife salvage, amphibian relocation) | <i>Wildlife Act</i> | BC MFLNRO |
| Burning Permits | <i>Forest Act</i> | BC MFLNRO |
| Water Discharge Permit (Hydrotesting) | <i>Environmental Management Act</i> | BC OGC |
| Waste Discharge Permit (Air Emissions at Facilities) | <i>Environmental Management Act</i> | BC OGC |
| Regional | | |
| Food, Water, Accommodations and Sewerage for Industrial Camps | <i>Health Act</i> | Local Health Authority |
| Various Zoning Permits | Municipal Bylaws | Regional Districts |

3.4 AREAS OF FEDERAL INTEREST

The Project does not require federal financial support. The Project, as currently planned, does not require an interest in any federal land. However, PRGT is currently in the process of evaluating whether an interest in federal lands within the boundaries of the Prince Rupert Port Authority (PRPA) may be required for a portion of the Project. PRGT will obtain all necessary legal permission from the responsible federal authorities should an interest in PRPA lands be required. It is not anticipated that the Project will cross any Indian Reserve lands. The Project is also not expected to have any transboundary effects and will not result in any changes to federal lands.

3.4.1 Federal Authorizations

Federal authorizations are included in Table 3-2, and may be required pursuant to the following federal legislation.

Fisheries Act

The Project may require authorization(s) pursuant to the *Fisheries Act* if Fisheries and Oceans Canada determines that the project may bring about a harmful alteration, disruption or destruction of fish or fish habitat. The Project activities associated with the construction and operation may interact with fish and fish habitat.

Species at Risk Act

The Project may require authorization(s) pursuant to the *Species at Risk Act* (SARA) if it is determined that the Project will affect a species listed on Schedule 1 of the Act, any part of its critical habitat or the residences of its individuals.

Migratory Birds Convention Act

The Project will comply with the requirements of the *Migratory Birds Convention Act*.

Navigable Waters Protection Act

The Project may require authorization(s) pursuant to the *Navigable Waters Protection Act*, if it is determined that the Project activities include works built in, on, over, under, through or across any navigable water that may interfere with navigation.

Canadian Environmental Protection Act

The project may require authorization(s) pursuant to the *Canadian Environmental Protection Act* (CEPA) if it is determined that materials will be required to be disposed of at sea.

Explosives Act

The Project may require the use of explosives and PRGT will obtain any licences or permits required under the *Explosives Act*.

4.0 PROJECT DESCRIPTION

This section provides a description of the Project components, the schedule and activities in the various phases of the Project.

4.1 SCOPE OF THE PROJECT

The Project scope includes the facilities and activities associated with the construction, operation and maintenance of the Project, as well as foreseeable changes to the Project. Where relevant, the Project scope also includes the consideration of the decommissioning, abandonment and reclamation of the pipeline and its associated facilities. The Project components are described in the sections that follow.

4.1.1 Pipeline

The approximately 750 km of NPS 48 (1,219 mm) diameter natural gas transmission pipeline would extend from a point near Hudson's Hope, BC, to the proposed Pacific Northwest LNG export facility at Lelu Island. The Project commencement point and end point are in the general vicinity of the coordinates provided in Table 4-1. Maps showing the conceptual corridor are provided in Appendix B.

Table 4-1: Approximate Project Location

| Project Commencement Point | |
|-------------------------------|----------------------------------|
| Latitude/Longitude | 56.206222 / -122.085948 |
| Universal Transverse Mercator | 556702.58 East, 6229407.84 North |
| BC Oil and Gas Grid | 094B-01-I-097 |
| Project End Point | |
| Latitude/Longitude | 54.201798 / -130.285133 |
| Universal Transverse Mercator | 416170.27 East, 6006736.80 North |
| BC Oil and Gas Grid | 103J-01-K-043 |

4.1.2 Watercourse and Inlet Crossings

The Project would involve the crossing of watercourses including streams, rivers, lakes and fjords. Environmental and engineering studies for the Project watercourse crossings have not yet been undertaken, and techniques for each watercourse crossing have not yet been finalized. A variety of crossing techniques may be used during the construction of the pipeline.

The conceptual corridor would cross two fjords, the Khutzeymateen Inlet and the Work Channel. These are deepwater fjords that require pipeline installation on the seabed. Twin concrete-covered steel pipes would be used through the marine section.

4.1.3 Marine Alternatives

As PRGT indicated in Section 3.0, two marine alternatives are being considered in the event that ongoing technical assessment and Aboriginal and stakeholder engagement determine that marine route options may be more appropriate for western portions of the conceptual corridor. Further study, surveys and engineering work are required to determine route details and the preferred pipe installation methods.

4.1.4 Meter Stations

The meter stations involve the installation of metering runs, yard piping, isolation and control valves, separators, and electrical, control and telecommunication systems. Currently, the Project includes the installation of metering facilities at the receipt and delivery points.

4.1.5 Compressor Stations

The Project currently includes the installation of two compressor stations, one approximately 10 km west of the W.A.C. Bennett Dam and the second approximately 100 km west of Williston Lake. Construction of the compressor stations would require all-season access from the nearest existing all-season road.

The compressor station design involves the installation of two approximately 30 MW International Organization for Standardization (ISO) rated natural gas-fired turbo-compressor packages, complete with discharge gas coolers for each unit and other auxiliary equipment, including high-pressure yard piping, isolation valves, electrical, control and gas systems, storage facilities, offices and if necessary, temporary living quarters. Potential for emissions is discussed in Section 8.2.

Additional compressor units at the initial compressor stations and/or additional compressor stations may be required for incremental design volumes.

4.1.6 Mainline Valves

Mainline valves would be installed at meter stations, compressor stations and at other locations along the conceptual corridor, as necessary, to comply with Canadian Standards Association (CSA) Z662-11, to enable isolation of pipeline sections, and to facilitate system operations.

4.1.7 Supervisory Control and Data Acquisition (SCADA) System

The Project would include the installation and operation of a SCADA system, linking pipeline and compressor facilities to the existing TransCanada Operations Control Centre (OCC) in Calgary, Alberta, which would allow for the remote monitoring of operational and measurement data.

4.1.8 Communication Links and Power Supply

The Project would include necessary communication links to service compressor stations, meter stations and other pipeline facilities. Electrical power would be supplied by third-party power providers. Where commercial power is not available, required electrical power sufficient to meet the station loads for pumps, fans, instrumentation and lights would be generated at the facilities.

4.1.9 In-Line Inspection Facilities

The Project would have facilities for launching and receiving in-line inspection tools. These tools allow for internal examination of the pipeline to monitor pipe integrity. The in-line inspection facilities are typically installed at compressor stations and at mainline valve sites. The facilities generally consist of valves, piping and launchers or receivers, depending on the location. The precise location of these facilities will be determined during detailed design.

4.1.10 Cathodic Protection

Cathodic protection is a common method used to protect the pipeline from electrochemical corrosion. A cathodic protection system, including anode beds, rectifiers and associated facilities, would be designed and installed for the pipeline and metering facilities.

4.1.11 Temporary Infrastructure

It is anticipated that construction of ancillary infrastructure, including new access roads, bridges, stockpile sites, borrow sites, contractor yards and construction camps, will be required.

4.2 PROJECT SCHEDULE

The proposed Project schedule, which is subject to receiving required approvals, is outlined in Table 4-2.

4.3 PROJECT ACTIVITIES

Subject to receipt of regulatory and Project approvals, construction is scheduled to commence in 2015, with completion of construction and an in-service date in 2018.

PRGT proposes to commence pre-construction activities, including ROW clearing and preparation, in 2015.

Pipeline construction involves several activities that occur sequentially at any one location. These include development of new access where necessary, surveying,

clearing, soil conservation and grading, drainage and sediment control, pipe stringing, bending and welding, trenching, lowering-in, backfilling, hydrostatic testing, cleanup and post-construction reclamation. The pipeline ROW would be divided into several construction spreads, meaning that there would be multiple construction crews carrying out construction activities in parallel at multiple locations along the construction ROW.

Table 4-2: Project Schedule

| Schedule Task | Timing |
|---|---|
| TransCanada announced the Project | January 9, 2013 |
| Project Description filing to initiate federal and provincial environmental assessment processes | May 2013 |
| Submission of Application for Environmental Assessment Certificate to BC Environmental Assessment Office | Early 2014 |
| Submission of Environmental Impact Statement to Canadian Environmental Assessment Agency | Early 2014 |
| BC OGC application | Initiate early 2014 |
| Receipt of key regulatory approvals | Late 2014 |
| Construction and Commissioning: <ul style="list-style-type: none"> • Commence Construction • Pre-Construction (including camps, storage yards, clearing, access and ROW preparation) • Mainline Construction (including pipeline, compressor stations and meter stations) • Commissioning | <p>Early 2015</p> <p>Early 2015 to mid-2017</p> <p>Late 2015 to 2018</p> <p>Late 2018</p> |
| In-Service | Late 2018 |
| Decommissioning and Abandonment | End of pipeline activities |

Construction of compressor and meter stations is expected to commence concurrent with pipeline construction. Site construction and equipment installation at the compressor and meter stations is expected to take several months.

In addition to the pipeline ROW and associated temporary workspace, lands would be required for staging and stockpile sites, equipment storage and possibly borrow pits (to supply fill material). Existing disturbed areas or areas already designated for such activities would be utilized wherever feasible.

Reclamation of disturbed areas would commence following construction and be completed after the Project is placed into service.

Currently, it is anticipated that the operations and maintenance phase of the Project would commence in late 2018 when the Project is placed in service.

During the operations and maintenance phase, primary activities will include:

- continuously monitoring pipeline operations through TransCanada's Operations Control Centre (OCC)
- ensuring emergency response plans are developed and appropriately linked into plans maintained by affected agencies
- informing the public of facility locations and operational activities through the Public Awareness program
- carrying out regular preventative maintenance programs

PRGT would apply TransCanada's policies and practices for the future decommissioning or abandonment of all, or portions of, the Project. TransCanada has extensive experience in pipeline abandonment and decommissioning. Additionally, TransCanada is currently participating with other pipeline companies in an initiative to advance research on pipeline abandonment. Pipeline activities are generally anticipated to continue for at least 40 years before decommissioning or abandonment may be considered. PRGT would comply with all applicable laws when abandoning or decommissioning its pipeline or related facilities.

5.0 NISGA'A NATION ENGAGEMENT

The conceptual corridor and marine alternatives traverse Nisga'a Lands within the Nass Area as defined in the Nisga'a Final Agreement. The Nisga'a Nation owns and has control over development on Nisga'a Lands and has rights within the broader Nass Area. The Nisga'a Lisims Government is the regulatory authority on Nisga'a Lands, which include the following four individual villages:

- Village of Gitlaxt'aamiks
- Village of Laxgalts'ap
- Village of Gitwinkshihikw
- Village of Gingoix

Since the Project was announced in January 2013, the Nisga'a Lisims Government has been provided with initial Project information materials, including a letter introducing the Project and a Project map. PRGT expects that as dialogue progresses with the Nisga'a, further information would be available to contribute to identifying potential environmental and socio-economic effects, as well as to support a dialogue about effective avoidance, mitigation and management measures. In addition, PRGT expects to carry out Archaeological and Heritage studies as described in Section 8.7.

PRGT seeks meaningful and respectful engagement with the Nisga'a Lisims Government. The approach to engagement will depend on the wishes and needs of Nisga'a. The goals of the Project engagement program are to:

- build and maintain a positive long-term relationship with the Nisga'a Nation
- comply with all applicable Nisga'a laws in respect of Nisga'a Lands
- ensure that input and concerns from the Nisga'a Nation are gathered, understood and integrated into Project design and execution as appropriate
- ensure that concerns and issues with respect to environmental or socio-economic effects related to the Nisga'a Nation are addressed, as appropriate
- ensure that the Nisga'a Nation are aware of how their input has shaped or affected the design process

To help achieve these goals, an assessment as per 8(e) and 8(f) of Chapter 10 the Nisga'a Final Agreement will be undertaken as part of the environmental assessment.

6.0 ABORIGINAL ENGAGEMENT

The conceptual corridor and marine alternatives cross the treaty area, claimed territories or areas of potential interest of more than 20 Aboriginal groups (see Table 6-1). As discussions with Aboriginal groups continue, there may be some that will determine that they do not have an interest in the Project. Conversely, there may be others that have not yet been identified that may assert an interest in the Project. In both cases, the Project will work with the Aboriginal groups and adjust engagement accordingly.

Table 6-1: Aboriginal Groups

| First Nations | |
|---|---|
| Gitanyow (includes Hereditary Chiefs and Band Councils) | Gitksan Nation (includes Hereditary Chiefs and Band Councils) |
| Blueberry River First Nations | Saulteau First Nations |
| Gitxaala Nation | Doig River First Nation |
| Fort Nelson First Nation | Kwadacha First Nation |
| Kitselas Nation | Kitsumkalum First Nation |
| Lake Babine Nation | Lax Kw'alaams First Nation |
| Metlakatla Indian Band | McLeod Lake Indian Band |
| Takla Lake First Nation | West Moberly First Nations |
| Halfway River First Nation | Prophet River First Nation |
| Nak'azdli First Nation | Tsay Keh Dene First Nation |
| Tribal Councils and Associations | |
| Carrier Sekani Tribal Council | Treaty 8 Tribal Association |
| Métis Organizations | |
| Métis Nation British Columbia | Kelly Lake Métis Settlement Society |

Since the Project was announced in January 2013, all potentially affected Aboriginal groups have been provided with initial Project information materials, including a letter introducing the Project and a Project map. PRGT is engaging with potentially affected Aboriginal groups along the conceptual corridor and marine alternatives. The potential effects of the Project may include various aspects of the livelihood and use of traditional resources of Aboriginal people in the region, such as fishing, hunting, trapping and plant harvesting. Although engagement with Aboriginal communities is in its early stages, some communities have expressed concerns or interests relating to the cumulative effects from proposed projects as well as the potential effects on watercourses, wildlife, wildlife habitat and the marine environment. Other issues identified include employment and economic opportunities as well as concerns relating to routing. PRGT expects that as dialogue progresses, further information would be available to contribute to identifying potential environmental and socio-economic effects, as well as to support a dialogue about effective avoidance, mitigation and management measures. In addition, PRGT expects to carry out

archaeological and heritage studies, as well as Traditional Land Use studies as described in Sections 8.7 and 8.8.

Engagement with Aboriginal groups is continuing with the following objectives:

- continue to build understanding and awareness of the Project
- understand how individual Aboriginal groups wish to be consulted
- gather preliminary information on Aboriginal interests and concerns

The Project Description will be shared with Aboriginal groups. The draft Application Information Requirements (AIR) and eventually, aspects of the draft Environmental Assessment Certificate (EAC) Application will also be shared with Aboriginal groups and their feedback sought and considered. Input from Aboriginal groups will inform PRGT's approach to its regulatory applications.

7.0 PUBLIC ENGAGEMENT

PRGT strives to engage stakeholders early and often. This means listening, providing accurate information and responding to stakeholder interests in a prompt and consistent manner. The engagement objectives are to:

- identify potentially interested stakeholders and the nature of their interests
- provide timely, honest, accurate information to allow for informed, effective and meaningful engagement with the public
- provide information about the need for the Project, process of approvals, construction practices and potential effects
- ensure that stakeholders have information on how to be involved in the regulatory process (e.g., BC EAO, CEAA and BC OGC approval processes)
- ensure that all communications materials are consistent, straightforward and easy to understand
- ensure there are a variety of means for stakeholders to get involved in the process
- ensure that stakeholder issues and concerns are gathered, understood and integrated into project design and execution, as appropriate
- ensure that stakeholders' issues are reported to regulators on a regular basis
- ensure that stakeholders are aware of how their input has shaped or affected the design of the process

The following stakeholder groups have been identified for engagement during the course of the Project:

- federal and provincial government authorities
- local authorities (e.g., elected officials and staff of regional districts and municipalities)
- federal and provincial regulatory agencies
- service providers (e.g., medical responders, protective services, educational institutes, health services, employment and training organizations, etc.)
- community residents (e.g., landowners, tenants and occupants within the conceptual corridor, area residents, landowner associations, etc.)
- land users (e.g., hunters, trappers, recreational users, etc.)
- local industry with operations in the Project area (e.g., oil and gas)
- civic organizations (e.g., business, economic development, employment, training, etc.)

- Environmental Non-Governmental Organizations (ENGOs) and Non-Governmental Organizations (NGOs)

From January to April 2013 initial meetings were undertaken with representatives from all of the municipal and regional governments, including:

- City of Fort St. John
- City of Prince Rupert
- District of Chetwynd
- District of Hudson's Hope
- District of Mackenzie
- District of New Hazelton
- District of Port Edward
- District of Taylor
- Peace River Regional District
- Regional District of Bulkley-Nechako
- Regional District of Kitimat-Stikine
- Skeena-Queen Charlotte Regional District
- Village of Hazelton

8.0 ENVIRONMENTAL SETTING AND POTENTIAL EFFECTS

8.1 PHYSICAL ENVIRONMENT

The conceptual corridor crosses six physiographic regions in BC:

- The Alberta Plateau subdivision of the Interior Plains (Fort Nelson Lowlands sub region) is characterized by flat and gently flowing uplands that are drained and incised by the Peace River. The region is primarily underlain by folded sedimentary rock comprised of a thick layer of shales from the Fort Saint John Group.
- The Rocky Mountains and Rocky Mountain Foothills are characterized by rugged terrain reaching elevations up to 2,150 m. The region is primarily underlain by Paleozoic folded sedimentary rock.
- The Rocky Mountain Trench separates the Rocky Mountains on its east from the Columbia and Cassiar Mountains on its west. Williston Lake fills the basin of the upper Peace River backing into the Rocky Mountain Trench.
- The Cassiar-Columbia Mountains (Omineca Mountains sub region) are a broad band of rugged mountains consisting predominantly of granite. Glaciation has produced an intersecting pattern of east-west and north-south ridges and valleys.
- The Central Plateau and Mountains comprise the Interior Plateau, Skeena Mountains, and Nass Basin sub regions. The Skeena Mountains are a distinctive feature largely made up of complex folded sedimentary rock with peaks between 1,800 m and 2,300 m. They are drained by the Stikine, Nass and Skeena river systems.
- The Coast Mountains extend as an unbroken mountain chain from the Fraser River northward for approximately 1,600 km into the Yukon Territory. Their width ranges from a minimum 55 km to a maximum of 160 km. The mountains are comprised of sedimentary and volcanic rock of middle Jurassic and older age. Peaks in the Kitimat Range reach 2,750 m but most summits are below 2,400 m. Alpine areas are typically glaciated.

Mapping available from Natural Resources Canada (NRCan) was used to identify that the conceptual corridor crosses regions with isolated patches of permafrost (0-10%) (NRCan 1995). The mapping also indicates that the conceptual corridor crosses an area within the vicinity of historical major flooding (NRCan 2007a) and areas of low to moderate seismic hazard (NRCan 2010). The corridor also affects several areas within the vicinity of historical forest fire hotspots before 2009 and areas that have historically experienced low to high fire severity level ratings (NRCan 2009a, 2009b).

There are no historical indications of major landslides causing mortality, major tornadoes, major hailstorms or major avalanches in the vicinity of the conceptual corridor (NRCan 2009c, 2007).

Studies to be carried out during the Project design phase will collect information about potential geohazards and other unique terrain features that require specific consideration in the design of the pipeline and the development of construction and reclamation techniques.

8.2 ATMOSPHERIC ENVIRONMENT

The Project has the potential to interact with the atmospheric environment. Specifically, the construction and operation of the pipeline and compressor stations would result in emissions to the atmosphere. Construction of the pipeline and associated facilities will require the use of a variety of equipment that burns relatively small amounts of hydrocarbon fuels (e.g., gasoline, diesel and natural gas), resulting in emissions of combustion by-products, including criteria air contaminants (CACs), such as nitrogen oxides (NO_x), carbon monoxide (CO) and greenhouse gases (GHGs). Construction activities are expected to be short-term and transient in nature.

Air emissions from the compressor stations during the operations phase of the Project are associated with combustion of natural gas in the turbines and may also include combustion by-products for other intermittent sources, such as generators. It is expected that the primary substances of concern for the Operations Phase of the Project will be NO_x, particulate matter (PM_{2.5}) and CO. Emissions of these substances will be estimated and dispersion modelling will be conducted for each compressor station in accordance with regulatory guidance. Dispersion modelling results will be compared to relevant Ambient Air Quality Objectives. Greenhouse gas emissions for each compressor station will also be estimated and compared to relevant provincial and national totals.

8.3 ACOUSTIC ENVIRONMENT

Background sound levels along the Project conceptual corridor primarily result from the presence of major highways and active Forest Service roads, as well as industrial activities, including mining and forestry. Much of the proposed pipeline conceptual corridor crosses rural settings with few receptors.

The construction of the Project will result in short-term increases in noise levels from construction equipment operation. Noise levels resulting from the operation of the compressor stations will be within applicable regulatory requirements.

8.4 AQUATIC SPECIES, FISH AND FISH HABITAT

The conceptual corridor crosses approximately 1,340 watercourses through five major drainage basins, including the Peace River (upper and lower), Fraser River, Skeena River, Nass River, and North Coast fjords and watershed drainage basins. Many

crossings also include unnamed, minor or ephemeral drainages. These basins all support many species of anadromous and freshwater fish, including those listed in Table 8-1.

Green sturgeon is a provincially red-listed species and designated as a species of special concern under SARA. Cutthroat trout is also listed as a species of special concern under SARA. Bull trout, cutthroat trout, eulachon, and northern redbelly dace are all provincially blue-listed species. White sturgeon are provincially red-listed and also listed as endangered under Schedule 1 of SARA, and while they do not occur in any of the watercourses crossed by the conceptual corridor, they have been observed in watercourses downstream in the Fraser Basin. As a result, there is the potential for construction activities to adversely affect this species and its habitat.

Table 8-1: Fish Species Occurrence in Major Basins

| Peace River Basin | Fraser River Basin | Skeena River Basin | Nass River Basin | North Coast Fjords and Rivers |
|--|---|---|--|--|
| Arctic grayling, brook stickleback, bull trout, burbot, Dolly Varden, finescale dace, flathead chub, goldeye, kokanee, lake chub, lake trout, lake whitefish, largescale sucker, longnose dace, longnose sucker, mottled sculpin, mountain whitefish, northern pearl dace, northern redbelly dace, northern pike, northern pikeminnow, peamouth chub, prickly sculpin, pygmy whitefish, rainbow trout, redbelly shiner, slimy sculpin, spoonhead sculpin, spottail shiner, sucker, troutperch, walleye, white sucker, yellow perch | Bull trout, chinook salmon, coho salmon, cutthroat trout, Dolly Varden, kokanee, mountain whitefish, prickly sculpin, rainbow trout, sockeye salmon, steelhead, sucker, whitefish | American shad, bull trout, burbot, chinook salmon, coho salmon, chum salmon, coast range sculpin, cutthroat trout, Dolly Varden, eulachon, green sturgeon, lake chub, largescale sucker, longfin smelt, longnose dace, longnose sucker, mountain whitefish, northern pike minnow, northern redbelly dace, pacific lamprey, peamouth chub, pink salmon, prickly sculpin, pygmy whitefish, rainbow trout, redbelly shiner, river lamprey, sculpin, sockeye salmon, steelhead, threespine stickleback, sucker western brook lamprey, white sturgeon, whitefish, white sucker | Chinook salmon, chum salmon, coast range sculpin, coho salmon, cutthroat trout, Dolly Varden, eulachon, green sturgeon, lamprey, mountain whitefish, pink salmon, rainbow trout, sculpin, sockeye salmon, steelhead, three spine stickleback | Chinook salmon, chum salmon, coho salmon, cutthroat trout, Dolly Varden, pink salmon, rainbow trout, sculpin, sockeye salmon, steelhead, stickleback |

Given the large number and diversity of species that may be encountered as a result of construction and operation of the Project, there is the potential for project-related activities to affect fish and fish habitat.

The potential effects of the pipeline construction on aquatic species and habitat are well known and understood. These potential effects may arise through construction of watercourse crossings or through erosion, and include the deposition of sediment into watercourses, temporary disturbance of species present at crossings and potential disturbance to fish habitat.

Marine Environment

The waters of Chatham Sound and Hecate Strait are part of the Pacific North Coast Integrated Management Area (PNCIMA) and a recognized transition zone between coastal tidal mixing and nutrient upwelling. This results in a seasonal increase in fish community structure and a broad distribution of marine life within the region. A number of marine mammal species, including baleen whales, toothed whales, pinnipeds, and mustelids, use this marine region as an important area for migration, breeding, and foraging throughout much of the year. The pelagic waters and adjacent shorelines and bays are used seasonally by both resident and migrating marine bird species. These include a diversity of pelagic seabirds, waterfowl, shorebirds, waders, raptors, and scavenger birds such as gulls and petrels. A number of these marine mammal and bird species are listed under the SARA. In addition, habitat-providing species, such as corals, eelgrass, kelps, rockweed and other algae, are found within the marine environment.

For marine segments of the route, there are potential effects on marine ecosystems during both construction and operation. During pipe laying, seabed sediments will likely be disturbed, and any directional drilling that might be required may introduce suspended sediments into the water column, potentially affecting marine plants and invertebrates as it resettles to the seabed. With the exception of the landing areas, the pipeline will sit on the seabed and will physically cover marine fish habitat, which may include sessile marine invertebrates, algae and eelgrass; however, it will also provide hard substrates to which marine organisms can attach. The pipeline may potentially pose a barrier to motile benthic species. Site-specific marine surveys will be conducted as part of the baseline environmental surveys to provide a basis from which to determine specific Project-related impacts. The information collected will assist in the development of management strategies and monitoring programs to mitigate potential impacts on marine ecosystems.

8.5 TERRESTRIAL ECOSYSTEMS, VEGETATION AND WILDLIFE

The Project has the potential to affect terrestrial ecosystems as defined through soils, vegetation and wildlife along the route.

8.5.1 Soils

The surface disturbance caused by pipeline construction has the potential to result in soil erosion. The conceptual corridor crosses agricultural lands, including several areas that are designated as Agricultural Land Reserves (ALRs). A preliminary site review indicates that some compressor stations and metering facilities may be located on ALR lands. Further site reviews and data collection will confirm the proposed locations to be included in the environmental assessment. Detailed soils investigations will be completed on agricultural lands. The information collected will assist in the selection of soil handling measures to avoid soil loss or transport and maintain soil capability.

The conceptual corridor crosses previously developed lands, some of which may have been used for industrial purposes. During the continued development of the Project, detailed information will be collected to identify the existence of contaminated soils in areas to be disturbed for construction, and to the extent that contaminated soil is encountered, appropriate management measures will be implemented, as required.

8.5.2 Vegetation and Wetlands

The conceptual corridor traverses nine Biogeoclimatic (BGC) Zones, including the Boreal White and Black Spruce (BWBS), Sub-Boreal Spruce (SBS), Engelmann Spruce-Subalpine Fir (ESSF), Boreal Altai Fescue Alpine (BAFA), Interior Cedar-Hemlock (ICH), Interior Mountain-heather Alpine (IMA), Mountain Hemlock (MH), Coastal Mountain-heather Alpine (CMA), and Coastal Western Hemlock (CWH). Vegetation within these BGC zones varies considerably. Approximately 50% of the conceptual corridor runs through the Sub-Boreal Spruce (SBS) zone. The SBS occurs within the central interior of BC and is dominated by hybrid white spruce and sub alpine fir with minor amounts of Douglas fir in the drier subzones.

Two hundred and eighty six provincially listed plant species are listed as occurring within the BC Ministry of Environment regions and biogeoclimatic zones intersected by the conceptual corridor. Two hundred and two of these are blue-listed (of special concern) and eighty-four are red-listed (endangered or threatened). Four of these species are listed on Schedule 1 of the federal SARA.

One hundred and thirty-two provincially listed ecological communities are associated with the BC Ministry of Environment regions and BGC zones intersected by the conceptual corridor. Ninety-eight of these communities are blue-listed and 34 are red-listed. The SARA does not track, rank, or regulate ecological communities.

Wetlands of various classes and forms occur throughout all the BGC zones along the conceptual corridor, as described in the vegetation overview above. Thirty-six blue-listed and 12 red-listed ecologically sensitive plant communities associated with the BC Ministry of Environment regions and BGC zones intersected by the conceptual corridor occur within estuarine or freshwater wetlands communities.

Forest harvesting has resulted in variously aged stands along the conceptual corridor, including some old growth stands.

Issues include limited loss of forest cover and the potential to create conditions favourable for invasive species. Vegetation species and community distribution along the route will be described in terms of diversity, relative abundance, the presence of species at risk or of special concern and the presence of merchantable timber. Mitigation measures and plans will be formulated to minimize disturbance to vegetation species and communities and merchantable timber resources. A site-specific reclamation plan will be developed to revegetate the right-of-way and will include seed mixes and weed control measures. The goal of the mitigation measures is to avoid or minimize the residual effects of the Project on vegetation along the route.

8.5.3 Wildlife

The conceptual corridor traverses three BC Ministry of Environment regions: Peace, Omineca, and Skeena. Across these regions, more than 250 species of amphibians, reptiles, birds and mammals are likely to occur within all or a portion of the conceptual corridor. Of the species known or likely to occur, 76 are recognized as species of management concern. These include 34 species federally designated on Schedule 1 or 3 of the SARA, 40 species listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and 72 species listed as Red (endangered or threatened) or Blue (special concern) by the province of British Columbia. Some species are represented by more than one category. Table 8-2 summarizes designated species of management concern.

Table 8-2: Designated Species of Management Concern

| Common Name | Scientific Name | SARA Status |
|------------------|-------------------------------|------------------------------|
| Blue Whale | <i>Balaenoptera musculus</i> | Endangered – Schedule 1 |
| Fin Whale | <i>Balaenoptera physalus</i> | Threatened – Schedule 1 |
| Grey Whale | <i>Eschrichtius robustus</i> | Special Concern – Schedule 1 |
| Grizzly Bear | <i>Ursus arctos</i> | Special Concern – Schedule 3 |
| Harbour Porpoise | <i>Phocoena phocoena</i> | Special Concern – Schedule 1 |
| Humpback Whale | <i>Megaptera novaeangliae</i> | Threatened – Schedule 1 |
| Keen's Myotis | <i>Myotis Keenii</i> | Special Concern – Schedule 3 |

Table 8-2: Designated Species of Management Concern (cont'd)

| Common Name | Scientific Name | SARA Status |
|---|--|--------------------------------------|
| Killer Whale (Northeast Pacific northern resident population) | <i>Orcinus orca</i> | Threatened – Schedule 1 |
| North Pacific Right Whale | <i>Eubalaena japonica</i> | Endangered – Schedule 1 |
| Sea Otter | <i>Enhydra lutris</i> | Special Concern – Schedule 1 |
| Sei Whale | <i>Balaenoptera borealis</i> | Endangered – Schedule 1 |
| Steller Sea Lion | <i>Eumetopias jubatus</i> | Special Concern – Schedule 1 |
| Woodland Caribou (Northern Mountain Population) | <i>Rangifer tarandus</i> | Special Concern – Schedule 1 |
| Ancient Murrelet | <i>Synthliboramphus antiquus</i> | Special Concern – Schedule 1 |
| Band-tailed Pigeon | <i>Patagioenas fasciata</i> | Special Concern – Schedule 1 |
| Black-footed Albatross | <i>Phoebastria nigripes</i> | Special Concern – Schedule 1 |
| Canada Warbler | <i>Cardellina Canadensis</i> | Threatened – Schedule 1 |
| Common Nighthawk | <i>Chordeiles minor</i> | Threatened – Schedule 1 |
| Great Blue Heron | <i>Ardea herodias fannini</i> | Special Concern – Schedule 1 |
| Long-billed Curlew | <i>Numenius americanus</i> | Special Concern – Schedule 1 |
| Marbled Murrelet | <i>Brachyramphus marmoratus</i> | Threatened – Schedule 1 |
| Northern Goshawk | <i>Accipiter gentilis laingi</i> | Threatened – Schedule 1 |
| Olive-sided Flycatcher | <i>Contopus cooperi</i> | Threatened – Schedule 1 |
| Peregrine Falcon | <i>Falco peregrinus anatum</i> | Threatened – Schedule 1 |
| Peregrine Falcon | <i>Falco peregrinus pealei</i> | Special Concern – Schedule 1 |
| Pink-footed Shearwater | <i>Puffinus creatopus</i> | Threatened – Schedule 1 |
| Red Knot | <i>Calidris canutus</i> | Endangered / Threatened – Schedule 1 |
| Rusty Blackbird | <i>Euphagus carolinus</i> | Special Concern – Schedule 1 |
| Short-eared Owl | <i>Asio flammeus</i> | Special Concern – Schedule 1 |
| Short-tailed Albatross | <i>Phoebastria albatrus</i> | Threatened – Schedule 1 |
| Western Screech-owl | <i>Megascops kennicottii kennicottii</i> | Special Concern – Schedule 1 |
| Yellow Rail | <i>Coturnicops noveboracensis</i> | Special Concern – Schedule 1 |
| Coastal Tailed Frog | <i>Ascaphus truei</i> | Special Concern – Schedule 1 |
| Western Toad | <i>Anaxyrus boreas</i> | Special Concern – Schedule 1 |

In addition to species designated provincially and federally, several species are recognized as being important to First Nations, Aboriginal groups, and hunters and trappers. Examples of some of these species include:

- American beaver (*Castor canadensis*)
- American mink (*Neovison vison*)
- Marten (*Martes Americana*)
- Canada lynx (*Lynx canadensis*)
- Moose (*Alces alces*)
- Elk (*Cervus canadensis*)
- Mule deer (*Odocoileus hemionus*)
- White-tailed deer (*Odocoileus virginianus*)
- Wolverine (*Gulo gulo*)

The conceptual corridor overlaps four woodland caribou (northern ecotype) herd ranges: Graham, Moberly, Scott and Wolverine. Each of these herds is designated as threatened on Schedule 1 of SARA and Blue-listed in British Columbia. Within the Moberly herd range, the corridor overlaps one Ungulate Winter Range (UWR) designated for caribou; no other UWR for caribou overlaps the corridor. The latest population estimates for these herds are: Graham (208 in 2009), Moberly (25 in 2012), Scott (less than 35 in 2006), and Wolverine (378 in 2008).

Seven areas designated as UWR for mountain goat (*Oreamnos americanus*) overlap the conceptual corridor, primarily in the Coast Range. There are seven grizzly bear population units intersected by the conceptual corridor, which include the Rocky, Moberly, Omineca, Babine, Cranberry, Stewart and Khutzeymateen units. The conceptual corridor is also proximate to one Important Bird Area (IBA BC124) located off the coast of Lelu Island, which ranges from Big Bay to Delusion Bay in Hecate Strait. The IBA is recognized globally and nationally for its tidal rivers and estuaries, saline mud and sand flats, and inlets, coastal cliffs and rocky shores that support concentrations of waterbirds, waterfowl and seabirds.

The Project has the potential to affect wildlife that is protected or designated under the *Migratory Birds Convention Act* (MBCA), the SARA, and the *BC Wildlife Act*. There are also provisions in the *BC Wildlife Act* and the *Oil and Gas Practices Act* for the protection of wildlife habitat and wildlife habitat features. The project has the potential to adversely affect wildlife and wildlife habitat through change in habitat, change in movement, and change in mortality risk.

These potential effects arise as a result of construction (e.g., clearing of vegetation, creation of access roads) and operation (e.g., increase in linear density, maintenance activities) of the project. Information on wildlife and wildlife habitat along the conceptual corridor will be collected to identify and assess the effects of the Project on wildlife. Field programs and data collection will focus on wildlife and wildlife habitat features of management concern. To eliminate or reduce potential adverse effects on wildlife and wildlife habitat, mitigation measures will be proposed in consideration of best management practices, management guidelines, and regulatory, community and Aboriginal consultation.

8.6 LAND AND LAND USE

The conceptual corridor primarily traverses provincial Crown Lands but also crosses private (freehold) lands, including Nisga'a Nation's Treaty Lands, several mineral tenures, infrastructure ROWs, and Timber Sales Business Areas.

The conceptual corridor does not cross any lands previously subject to environmental studies carried out under the *Canadian Environmental Assessment Act*; however, the conceptual corridor crosses areas subject to Land and Resource Management Plans (LRMPs), including Dawson Creek, Mackenzie, Fort St. James, Bulkley, Kispiox, Kalum and North Coast. The conceptual corridor also crosses Sustainable Resource Management Plans (SRMPs), including the Mugaha Marsh, Xsu gwin lik'l'inswx, West Babine, Nass South, Kalum South, and the Khutzeymateen Protected Areas Management Plan. The conceptual corridor would also cross lands administered by the Prince Rupert Port Authority.

It is anticipated that the conceptual corridor may be proximate to primary or seasonal residences. Studies will be undertaken to identify these residences.

At present, the conceptual corridor supports a variety of activities on private and Crown land. These include:

- traditional uses by Aboriginal peoples
- forestry
- agriculture and grazing
- mining and mineral exploration and development
- oil and gas
- public recreation and tourism (i.e., fishing, hunting and guide outfitting, and trapping)
- protected and recreational areas

8.6.1 Protected Areas and Recreation Areas

Parks and protected areas and recreation values add to the tourism industry in northern BC. The conceptual corridor crosses through three conservancies, including the Ksi X'Anmass Conservancy, the Khutzeymateen Inlet Conservancy and the Woodworth Lake Conservancy.

Known recreation areas are located in the general vicinity of the conceptual corridor. Outdoor recreational activities, such as hunting, hiking and snowmobiling, are expected to occur throughout the area. Recreational fishing occurs on many watercourses and lakes.

8.6.2 Reserves Defined Under the *Indian Act*

The conceptual corridor does not cross any Indian Reserves (IRs), as defined under the *Indian Act*. However, the conceptual corridor does pass close to the boundary of the Kisgegas IR, a Gitksan reserve associated with the Gitanmaax Band. It is not anticipated that the pipeline right-of-way will cross IR lands. The corridor is also in the vicinity of an additional 28 IRs and a number of First Nations' traditional territories. Section 6 includes a preliminary list of First Nations who have been identified as having potential interest in the Project. This list may change as consultation with the communities and EAO progresses.

8.7 ARCHAEOLOGICAL AND HERITAGE RESOURCES

Heritage Resources are non-renewable resources managed under the BC *Heritage Conservation Act*, and the BC Archaeological Impact Assessment Guidelines. Heritage sites are locations that have significance and cultural value for BC.

Aboriginal interests are also taken into consideration in the management of heritage resources. These resources are important and of value to the scientific, cultural and public communities. The conceptual corridor crosses several archaeological and cultural areas. Although many portions along the conceptual corridor have not been investigated for cultural remains, regional information is available for estimating the nature and time of past land occupation. The anticipated key issues associated with the Project regarding heritage resources include direct and indirect impacts on archaeological sites, paleontological sites and historical sites. An Archaeological Impact Assessment (AIA) will be conducted for all areas that might be disturbed during construction of the Project. Areas of moderate and high archaeological potential will be identified, surveyed and assessed.

8.8 TRADITIONAL ECOLOGICAL KNOWLEDGE AND TRADITIONAL LAND USE

Prince Rupert Gas Transmission has initiated an engagement process with potentially affected Aboriginal groups in BC (see Section 6.0). PRGT will provide opportunities to participate in Traditional Knowledge (TK) and Traditional Land Use (TLU) studies to First Nations whose territories are impacted by the Project.

Such studies will focus on the current use of land and marine resources for traditional purposes in the study areas identified by the Aboriginal community, and will be used to collect knowledge regarding the significance of the sites identified during fieldwork. These studies will be used to identify the potential for:

- effects on traditional activities that could be caused by pipeline construction and operations
- effects on heritage and culturally important sites

- effects on species (e.g., caribou) important to traditional hunting, trapping, fishing and plant harvesting activities
- increased access to land

8.9 TOXIC AND HAZARDOUS MATERIALS

Hydrocarbons and hydraulic fluids are the primary toxic materials to be used during construction and operation of the Project. TransCanada has several systems in place (including its pipeline integrity management program, SCADA, aerial and ground patrol, and emergency response systems) to both prevent incidents and ensure rapid and effective response to spills of hazardous materials.

8.10 WASTE DISPOSAL

During the construction phase of the Project, typical waste includes construction materials (wood lathe, flagging tape, hydraulic fluids from equipment maintenance, and domestic products from camp operation). During the operation phase, the facilities are expected to produce waste typical to these facilities, including used compressor and generator oil and filters, air filters and domestic wastewater.

To control Project waste, PRGT would apply TransCanada's waste management plan, which meets or exceeds requirements under the *BC Environmental Management Act*. Storage and transportation of waste material would be conducted in accordance with the *Transportation of Dangerous Goods Act*, Workplace Hazardous Materials Information System (WHMIS) and any other provincial regulations.

8.11 ACCIDENTS AND MALFUNCTIONS

The potential effects of accidents and malfunctions that may occur during the construction and operation of the Project will be considered in the environmental assessment. This assessment will include the potential effects on the biophysical and the human environment, leading to the development of effective management and mitigation measures and programs. These measures and programs will be appropriately linked into plans maintained by other affected local agencies (e.g., emergency response plans).

9.0 POTENTIAL CUMULATIVE EFFECTS

A Cumulative Effects Assessment (CEA) will be undertaken for the Project. The CEA will evaluate the residual environmental and socio-economic effects directly associated with the Project, in combination with the likely residual effects arising from other projects and activities that have been or will be carried out in the Project study areas. The other projects and activities to be included in the CEA will be identified as the environmental assessment progresses.

The project-specific environmental effects assessment and the cumulative effects assessment 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
- potential overlapping effects due to present developments
- predicted effects from future developments that have been publicly announced or are in a regulatory approval process

10.0 CONCLUSION

Prince Rupert Gas Transmission is pleased to submit this Project Description to initiate the approval process for this project, which is significant for both British Columbia and Canada. This Project would provide economic benefits to British Columbia and Canada, and in particular to the communities near which it will be located. Prince Rupert Gas Transmission is committed to meaningful relationships with the Aboriginal communities, landowners, municipalities and stakeholders along the conceptual corridor to ensure that their interests are taken into account in Project planning. Throughout the Project lifecycle, PRGT will carry out its activities in a manner that is respectful of the environment.

