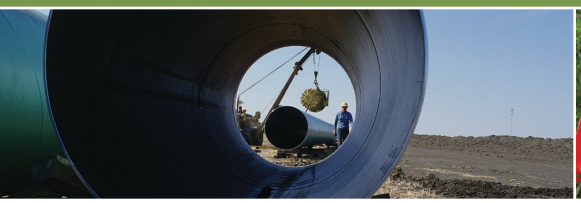
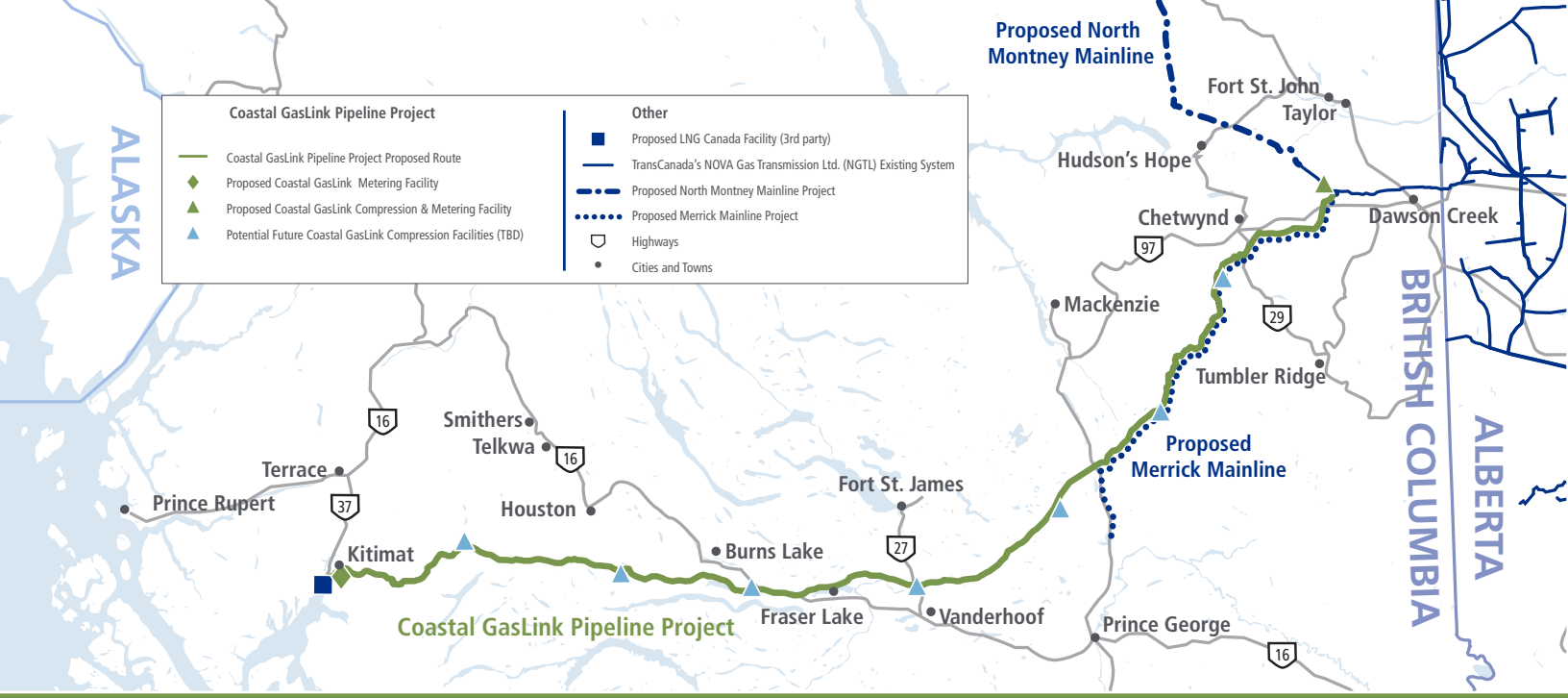
Coastal GasLink – Pipeline Project Overview



Coastal GasLink
Pipeline Project



Proposed Route Map

The Proposed Pipeline Route

Coastal GasLink Pipeline Ltd. is proposing to develop an approximately 670 kilometre provincially regulated pipeline to safely deliver natural gas from the Groundbirch area, near Dawson Creek, British Columbia to the LNG Canada gas liquefaction facility proposed to be developed by Shell Canada Ltd. and its partners near Kitimat, B.C.

Coastal GasLink Pipeline Ltd. is a wholly owned subsidiary of TransCanada PipeLines Limited. A Final Investment Decision by the joint venture partners of LNG Canada (our pipeline customers) is expected in late 2016. If the LNG Canada partners elect to proceed with their project at that time, pipeline construction would begin in 2017.

From the onset of the project, the project team held numerous meetings with First Nations, local governments, landowners, other land users and community residents. We made adjustments to the initial conceptual corridor for the pipeline based on their input.

Starting in 2013, we sent scientists, engineers and technicians into the field to test rocks and soils, study rivers and streams, and learn about regional plant and animal life. Aboriginal community members facilitated the collection of traditional ecological knowledge as part of the environmental field studies.

Using the information we gathered, we developed a proposed pipeline route. Coastal GasLink submitted an Environmental Assessment to the BC Environmental Assessment Office in January 2014, containing details on the proposed route. To reduce the potential for adverse social and environmental effects and provide maximum benefit to British Columbia, we proposed numerous measures. For example:

- Continued information sharing and discussion with local and Aboriginal communities, and timely response to public concerns
- Where feasible, planning a route across lands that have been logged, mined or otherwise disturbed to reduce the extent of new disturbance
- Construction timed to reduce potential seasonal effects on mammals, birds and fish
- Watercourse crossings carefully designed to minimize potential adverse effects on fish, water and adjacent areas
- Burial of the pipeline for its entire length, except at compressor stations and metering stations
- To the extent practical, the return of the pipeline right-of-way to pre-construction conditions
- Monitoring of the future pipeline 24 hours a day from TransCanada's state-of-the-art computerized control centre; regular maintenance including aerial patrols, on-the-ground inspection and in-line inspection using tools that travel inside the pipe

Coastal GasLink received an Environmental Assessment Certificate from the EAO in October 2014, with 32 conditions attached. The conditions reflect best practices for natural gas pipeline construction and operation, or address project-specific concerns raised by Aboriginal groups, local communities and resource management agencies.

The Benefits

The Coastal GasLink Pipeline Project will deliver well-designed and constructed infrastructure that provides long-term economic benefits for B.C. and Canada.

High-quality Jobs – An estimated 2,000 to 2,500 jobs during construction, and 16 to 35 permanent positions during operation

Business Opportunities – Use of local goods and services including food and accommodation, hardware, fuel, parts, equipment servicing

Project Cost – The project construction cost is estimated at over $4.8 billion, with at least 32 per cent of that spend taking place in B.C. Once the pipeline is in operation, an additional $42 million is forecast to be spent each year, mainly in B.C.

Local Spend – Coastal GasLink has spent almost $48 million in northern B.C., plus over $2 million in community and aboriginal investments along the route. During construction and operation, the benefits to B.C. will grow significantly

Property Taxes – An estimated $20.88 million in annual property tax benefits* will support community services such as fire protection, policing, schools, hospital districts, and waste management

Community Investments – Coastal GasLink supports education and training for local and Aboriginal communities and community initiatives focused on environment, safety and community. Since 2012, TransCanada has invested approximately $6.5 million in communities throughout Northern B.C., and has plans for more.

*Based on current assessment levels

Project Timeline

2012 Launched project and began engagement with Aboriginal communities, local governments, landowners and other stakeholders. Our engagement program will continue throughout the life cycle of the Project.

2013 – 14 Undertook environmental and engineering studies along the pipeline study corridor.

2014 Filed an Environmental Assessment Application with the BC Environmental Assessment Office (EAO). The application was subject to public comment and a detailed review by the EAO and a working group drawn from First Nations, local government, and provincial and federal government agencies. The EAO issued an Environmental Assessment Certificate for the project on October 24, 2014.

2014 Submitted a detailed project design application to the BC Oil and Gas Commission.

2015 Continued field work and development of plans and strategies to fulfill regulatory conditions.

2016 Received all of the major provincial regulatory approvals required from the BC Oil and Gas Commission for the construction and operation of the proposed pipeline and related facilities.

Field work continues so the Coastal GasLink team can gather further details about the approved route and the Sun House alternate route.

In July 2016, LNG Canada (our customer) announced that its joint venture participants – Shell, PetroChina, Mitsubishi Corporation and Kogas – have decided to delay a final investment decision on the LNG Canada project that was planned for the end of 2016. They have stated that the LNG Canada project remains a promising opportunity. It has strong stakeholder and First Nations' support, has achieved critical regulatory approvals, and has important commercial and engineering contracts in place to design and build the project. And, through its pipeline partner Coastal Gas Link, has received necessary environmental approvals and First Nations support along the pipeline right-of-way.

Engaging with Aboriginal groups

Our core values of integrity, collaboration, responsibility and innovation are at the heart of our commitment to engagement, and guide our interactions with Aboriginal and local communities.

TransCanada and Coastal GasLink are committed to building and maintaining positive relationships with Aboriginal communities. We believe by developing positive relationships with the Aboriginal communities whose lives and traditional activities may be affected by our projects, we can achieve our respective and shared business and community interests.

Coastal GasLink respects the legal and constitutional rights of Aboriginal people and recognizes that its relationship with Aboriginal people is separate and different from that between Aboriginal peoples and the Crown. We respect the diversity of Aboriginal cultures, recognize the importance of the land, and cultivate relationships based on mutual trust and respect.

Throughout the life of the project, we will continue to engage with local governments, landowners, interested stakeholders and the general public through information sessions, personal visits, community forums, our project website and more.

Engagement is a two-way process. Where possible, we have incorporated community feedback into our plans. We invite Northern B.C. residents to continue the conversation with us.

Local and Aboriginal Contracting

Most business opportunities on Coastal GasLink will be provided through prime contractors or their sub-contractors. Prime contractors will be large, highly-qualified firms with international experience in large diameter pipeline construction.

Coastal GasLink will work with our primes to develop local and aboriginal participation plans and identify how each contractor will make use of qualified local businesses and workers. After the prime contractors have officially joined the project, the project team will travel with the primes to introduce them to northern communities.

Through construction, Coastal GasLink will monitor implementation of the participation plans, and stay in touch with communities to discuss the success of our local and Aboriginal participation program.

"TransCanada and Coastal GasLink have been exceptional in the way they deal with First Nations people. They really listen and I think they care, and they're willing to incorporate the needs and concerns of local Aboriginal people into their project planning and strategy."

Layne Boucher, local Aboriginal contractor

Training and Education

Through discussions with communities in northern B.C., TransCanada is aware that investment in skills training and education will be critical to ensuring that local residents can participate in pipeline projects and the wider job market. TransCanada also knows how important education is in building stronger, sustainable communities. Our Coastal GasLink team is working with northern educational institutions and training organizations to offer essential skills training and trades training to northern B.C. communities. TransCanada is committed to leaving a legacy with our proposed projects, long after our pipelines are in the ground and natural gas begins to flow. Investing in education is part of that legacy.

Coastal GasLink has two programs in Northern B.C. to invest in Aboriginal and local trainees and students:

- The Pathway to Pipeline Readiness Program is focused on local workforce readiness directly related to the project.
- The Education Legacy Program looks for opportunities to build long-term community capacity through educational initiatives.

Coastal GasLink has finalized training agreements with three regional training organizations, and continues in discussions with other northern B.C. training providers. And during the Coastal GasLink construction phase there will be ongoing labour force development as local employees pick up basic job skills – including safety awareness and apprenticeships – over a three and a half year period.

"This partnership with TransCanada will help to make education and skills training more available to remote and low income learners. It's through strategic partnerships like this one that we are able to offer relevant and valuable programming to our students and our communities."

Henry Reiser, President, College of New Caledonia

The Environmental Approval Process

To prepare for construction, Coastal GasLink identified important natural and cultural features along the proposed pipeline route and developed effective protection measures. Our environmental studies gathered information about aquatics, wildlife, soil, vegetation, wetlands, archaeology, hydrology and terrain. Coastal GasLink engaged Aboriginal communities in field studies as part of our traditional ecological knowledge gathering and traditional land use studies.

Engineering studies provided data on subsurface soil conditions, slope stability and watercourse characteristics to inform routing, engineering design and construction planning.

In January 2014, Coastal GasLink submitted an Environmental Assessment Application to the BC Environmental Assessment Office (EAO). This 7,200-page document provides a detailed description of the natural environment along the proposed pipeline corridor. It also explains how we plan to avoid or mitigate potential adverse environmental effects. While a review of our Application was underway, we undertook additional environmental and engineering field studies to further refine the proposed construction footprint and construction methods.

In October 2014, the EAO provided Coastal GasLink with an Environmental Assessment Certificate. There are 32 conditions attached. These reflect best practices in pipeline construction and operation, and many respond to issues raised by Aboriginal and local communities. Here are some key examples of the detailed plans and reports that Coastal GasLink will be required to complete before construction can begin:

- Environmental Management Plan (for submission to the EAO)
- Grizzly Bear Mitigation and Monitoring Plan (for submission to the EAO)
- Timber Salvage Strategy (in consultation with the BC Ministry of Forests, Lands and Natural Resource Operations and the BC Oil and Gas Commission)
- Social and Economic Effects Management Plan (in consultation with the BC Ministry of Community, Sport and Cultural Development).

Coastal GasLink is committed to meeting or exceeding regulatory requirements, and to working with regulators through the construction period to achieve the highest standards of environmental protection. Once in operation, the pipeline will be subject to ongoing regulatory monitoring by the BC Oil and Gas Commission.

Finding new global markets for B.C. natural gas will ensure continued economic opportunity for the province and its northern communities.

The LNG Value Chain

Natural gas is expected to be the world's fastest-growing major energy source through to 2040.

Global demand is projected to rise by close to 65 percent during this period. Half that growth is expected to come from Asia. Natural gas use in Asia will replace higher carbon emitting fuels, helping to reduce global GHG emissions.

B.C. is strategically located close to Asian markets, and represents a stable source of natural gas. B.C.'s gas fields have enough natural gas to meet the needs of both local and international markets for many decades to come.

Coastal GasLink is part of a value chain that extends from northeastern B.C. to Asia. Here are the steps in the chain:

- The LNG Canada partners – Shell, Mitsubishi, Kogas and PetroChina – own or have access to extensive natural gas resources in B.C. They have the capacity to explore for new resources, develop wells, and prepare natural gas for transportation.
- TransCanada is North America's leading pipeline builder and operator. Coastal GasLink has proposed to construct a pipeline to safely transport natural gas to LNG Canada's proposed terminal in Kitimat.
- To export natural gas, LNG Canada must convert the gas to a liquefied state, cooling it and maintaining it at a temperature of about -160 degrees Celsius. LNG Canada's proposal to build a liquefaction and export facility in Kitimat received its environmental approval and is in the construction permit phase, and preparing for a final investment decision.
- The LNG Canada partners will own or lease ocean-going LNG carriers and they have longstanding customers for natural gas in Asia. They have the means to regasify the LNG in Asia and feed it into the pipelines that will distribute natural gas to Asian customers.

LNG Canada and its partners, with Coastal GasLink, have accounted for every step in the value chain, with natural gas supply in Canada, transportation, liquefaction and customers in Asia. It is the sum total of all these elements which makes this a highly viable project for B.C.

TransCanada – A leading North American energy infrastructure company

We are a Canadian company; with over 65 years' experience building and operating pipelines throughout North America. TransCanada has been operating in B.C. for more than 50 years, and currently has offices in Vancouver, Prince George, Smithers, Fort St. John and Cranbrook.

We operate one of North America's largest natural gas pipeline networks – more than 67,000 kilometres – tapping into virtually every major gas supply basin on the continent. We deliver 20 per cent of the natural gas consumed in North America each and every day.

You can find out more about TransCanada by visiting: www.transcanada.com

We believe in making a positive difference through investing in our communities. It's part of our commitment to being a good neighbour. In 2014, TransCanada directed more than $14.6 million to nearly 1,500 non-profit organizations across North America.

- Official Sponsor of the Canada Winter Games in Prince George, and the Presenting Sponsor of the Closing Ceremonies
- Supporting a demonstration project in green energy at the University of Northern British Columbia, extending a pipeline to carry heat from renewable sources to campus buildings
- Helping to fund a new medical clinic and wellness centre in Chetwynd
- Partnering with the Breakfast Club of Canada to serve up nutritious breakfasts for school kids in Prince George, Vanderhoof and Thornhill
- Investing across northern B.C. in volunteer search and rescue societies, municipal fire rescue services, fish habitat and wetland restoration, and environmental education

Safety of Our Pipelines

- TransCanada is committed to building and operating our natural gas pipelines safely – from design and construction, to operations and maintenance.
- TransCanada uses top quality steel and welding techniques in all of its projects. We use highly skilled workers with the latest training and expertise.
- We take additional safety precautions where pipelines cross roads and waterways. During construction, all welds are checked by an x-ray or ultrasound process. To protect against corrosion, the external surface of the pipeline is coated and cathodic protection measures are utilized to maintain the integrity of the pipe and coating.
- Before the pipeline is put into service, the integrity of the pipeline is pressure tested beyond the pipeline's maximum operating pressure.
- TransCanada monitors its pipelines 24 hours a day from a state-of-the-art Gas Control Centre. Highly trained personnel are able to detect changes in pressure along our pipelines and ensure all facilities are operating properly. Our maintenance program includes aerial patrols, on-the-ground inspection and in-line inspection. In the unlikely event of an emergency, our comprehensive Emergency Response Program will be activated.
- We train our staff and contractors to know exactly what to do in the event of an emergency, both during construction and ongoing operations. We collaborate with area emergency responders to ensure a coordinated response in the event of an incident.

Contact Us

We invite you to contact us with any questions regarding the proposed project:

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August 2016