

# Enbridge Regional Update

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**City of Prince George**

December 16, 2019

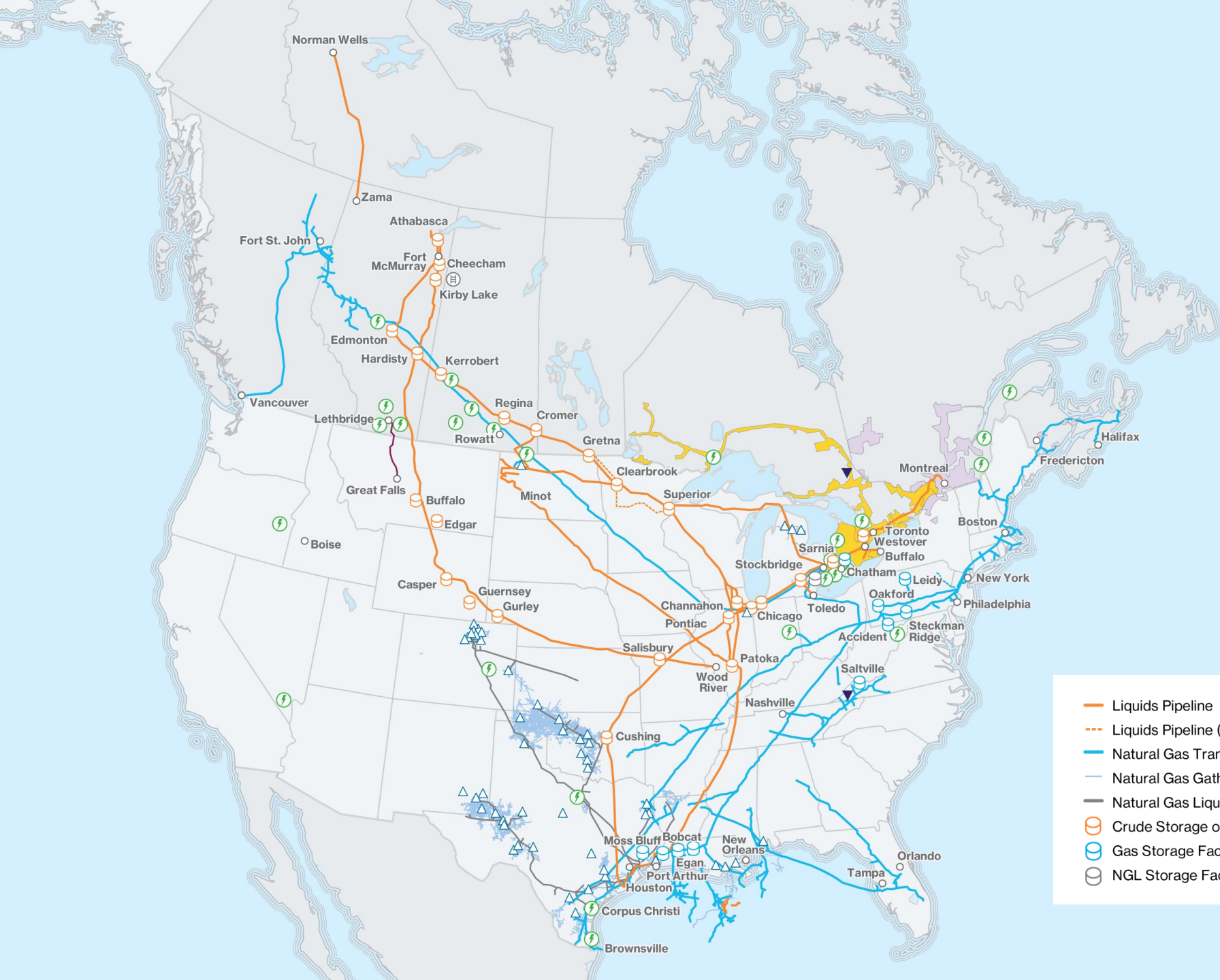

















Rikki Beaudet and Catherine Pennington  
Community and Indigenous Engagement

# Agenda

- Introductions
- Operations in B.C.
- Safety and Operations
- Comprehensive Integrity Program
- T-South Reliability and Expansion Program
- B.C. Growth Opportunities
- Q & A





- |   |   |
|---|---|
|  Liquids Pipeline                  |  LNG Facility                          |
|  Liquids Pipeline (proposed)       |  Rail                                  |
|  Natural Gas Transmission Pipeline |  Power Transmission                    |
|  Natural Gas Gathering Pipeline    |  Renewable Energy                      |
|  Natural Gas Liquids Pipeline      |  Gas Processing Plant                  |
|  Crude Storage or Terminal         |  Gas Distribution Service Territory    |
|  Gas Storage Facility              |  Affiliated Gas Distribution Territory |
|  NGL Storage Facility              |   |



# What we do



We fuel quality of life for millions of people everyday



Liquids Pipelines

- 17,000 miles of pipe
- 2.9 million barrels/day

25%

of NA's crude oil  
transported



Natural Gas Pipelines

- 26,600 miles of pipe
- 305 Bcf of gas storage

22%

of NA's natural gas  
transported



Natural Gas Utilities

- 3.7 million retail customers
- Serving 500+ communities

40%

of Ontario's energy  
needs delivered



Renewable Power

- 23 renewable power facilities
- 2,050MW generating capacity

700,000

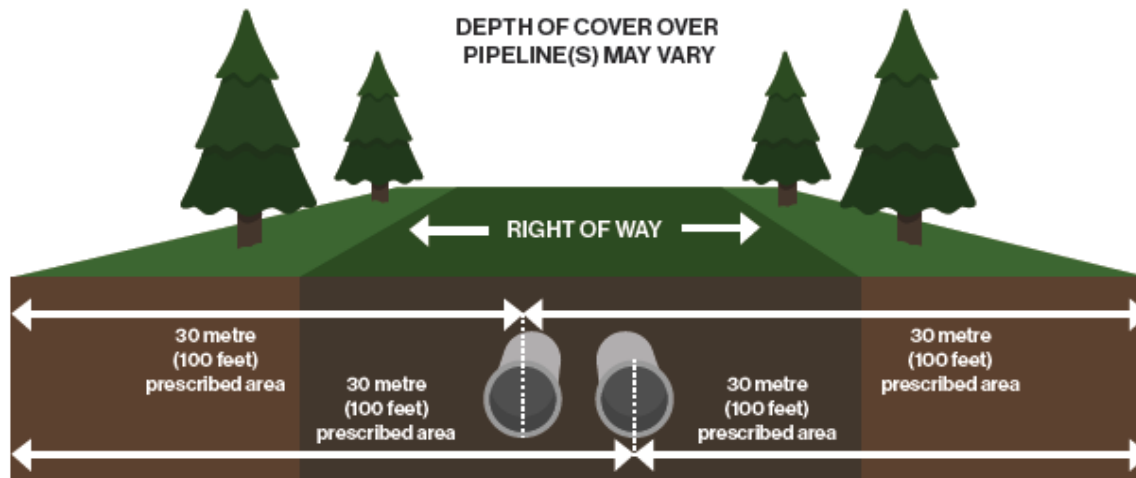
homes powered  
by our assets

# Operations in British Columbia

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# About Natural Gas & Transmission Pipelines

- Enbridge's natural gas transmission system only transports sweet gas
  - Lighter than air
  - Colourless and non-toxic
  - Has a slight petroleum or hydrocarbon smell
- The tract of land above a pipeline is known as a right-of-way
  - Typically cleared of trees, most vegetation, buildings, and other structures
  - Can be identified by the above-ground pipeline markers



# Operations in British Columbia

- Our facilities have been the backbone of the natural gas sector in B.C. for more than 60 years
- Nearly 60 per cent of the natural gas produced in B.C. touches our natural gas transmission system
- The gas is used to:
  - Heat homes, hospitals, businesses and schools
  - Electric power generation
  - Industrial and manufacturing processes that produce hundreds of products that improve our daily lives



We help to fuel people's quality of life by connecting them with the energy they need to live their lives.

# Economic Impacts to B.C.



## Jobs

- Enbridge employs 683 permanent and temporary employees, and provisioned contractors
- More than \$64 million in base salary paid to permanent and temporary employees – much of that injected directly into the provincial economy

## Tax and Economic Benefits

- \$74.9 million in property tax across for our energy projects, pipelines and related facilities.
- \$89.8 million taxes (including carbon tax, payroll tax, fuel tax, and excise tax)
- \$877.1 million on capital expenditures on such items as pipe steel, equipment purchases, system integrity-related investments, and capital leases
- \$657.8 million on operating and administrative expenditures, such as maintenance costs, equipment leases, power consumption, and field personnel salaries and wages

Enbridge is committed to supporting and strengthening the communities near our pipelines and facilities



# Community Investment in B.C.



## **Economic spinoffs that stimulate the economy**

Our procurement spending across B.C.  
exceeded \$1.5 billion in 2018



## **We work and live in your community**

Our B.C. workforce included 683  
employees and provisioned contractors  
at the end of 2018



## **We work and live in your community**

We paid \$64M in base salary to our  
B.C.-based permanent and temporary  
employees in 2018



## **Invested in your community**

We spent \$140,200 on community-  
strengthening initiatives across B.C. in  
2018

# Enbridge Safety and Operations

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# Maintaining and Monitoring Our System

## We Focus on...

- Meeting or exceeding all regulatory and industry safety standards during construction, operation and maintenance
- Responding 24/7 to any incident

## Monitoring our System

- One 24/7 gas control centre where operators monitor and control gas flows using a sophisticated computer system
- Equipped with automated leak detection alarms and shut down systems

- ❑ Routine aerial patrols to check for third-party activity or abnormal system conditions
- ❑ Excavations of the pipelines to inspect, repair and re-coat pipe sections, as required
- ❑ Inline inspections to look for anomalies such as corrosion or mechanical damage
- ❑ Valve servicing and maintenance to isolate pipeline sections in case of emergency



# Comprehensive Integrity Program

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# B.C. Pipeline Incident

- In October 2018, Enbridge experienced a natural gas pipeline rupture on its BC Pipeline system, approximately 13.5 kilometers north of Prince George
- Since the incident, Enbridge has implemented a **comprehensive pipeline integrity program**

## Program Highlights

- 1) Enhanced Pipeline Inspections
- 2) Improved Maintenance Screening Criteria
- 3) Increased Integrity Digs



This comprehensive pipeline will help to prevent similar incidents from occurring and significantly improves pipeline safety



# Comprehensive Integrity Program

## Enhanced Pipeline Inspections

- The entire T-South natural gas pipeline system has been inspected with the latest generation inline pipeline inspection tool
- This tool has double the number of sensors than previous inspection tools and is significantly more accurate at accessing potential problems like stress corrosion cracking
- We will continue to use this inspection tool going forward, conducting inspections more frequently



The T-South natural gas pipeline system now is 100 per cent inspected by the latest generation inline inspection tool

# Comprehensive Integrity Program



## Enhanced Maintenance Screening Criteria

- We've implemented more comprehensive criteria to evaluate pipeline inspection data
- This will identify potential risks earlier that may require monitoring and proactive maintenance work

## Increased Integrity Digs

- As a result of this enhanced screening criteria, we've increased the number of integrity dig inspections undertaken in a normal maintenance year
- During an integrity dig, we excavate a section of pipe to examine it further, validating its safety and undertaking proactive maintenance work if it is required
- This year, we have doubled the number of digs undertaken to validate the safety of our pipeline system compared to previous years

**This improved integrity program goes well beyond the industry standard**

At Enbridge, no incident is acceptable – ever. When an incident does occur, we take quick and decisive action to ensure the continued safety of our pipeline system

# T-South Reliability & Expansion Program

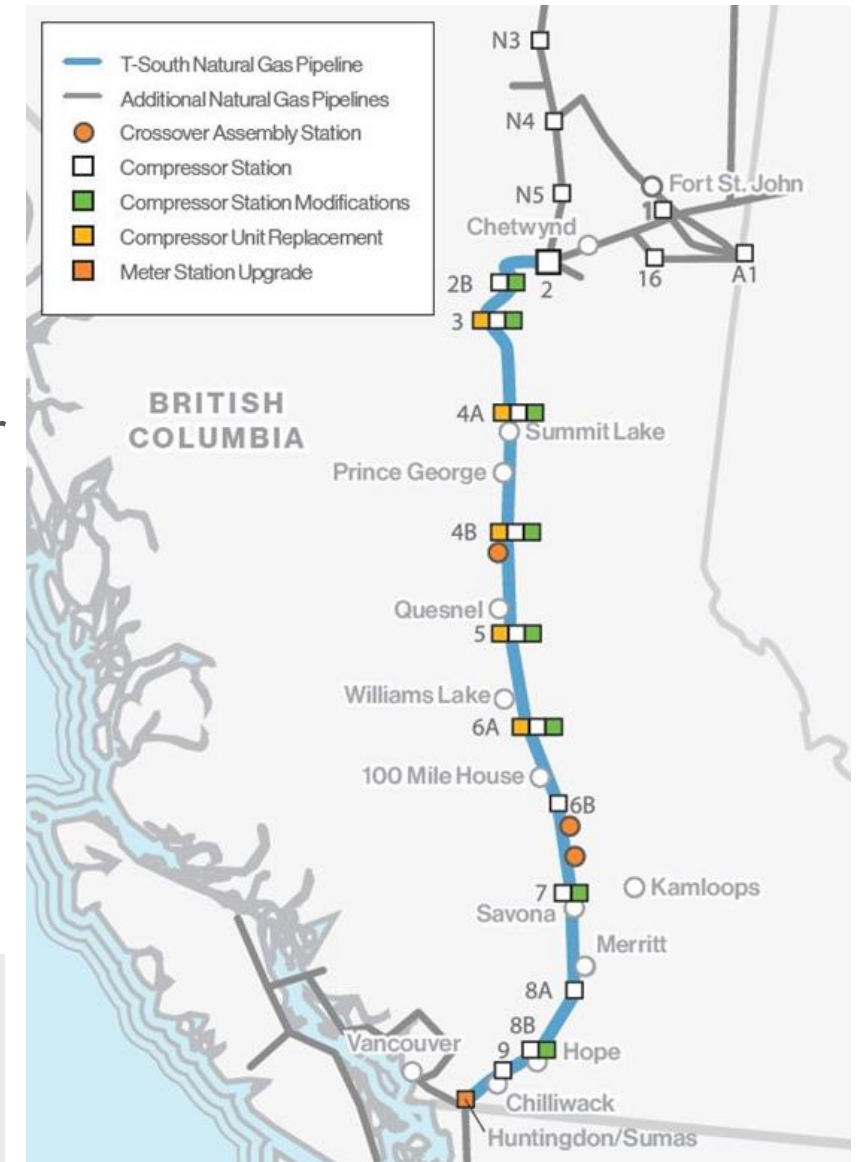
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# T-South Reliability and Expansion Program

## Project Scope

- **New compressor units** and associated equipment to support their operation will be installed at five existing compressor stations. Modifications proposed to existing compressors at two other stations and one meter station
- The **new compressor units** being installed include the addition of **a new gas cooler** to accompany the compressor unit
- As natural gas is compressed, its pressure and temperature increases. A gas cooler decreases its temperature before the gas is returned to a pipeline to ensure it does not negatively affect the pipeline system
- All work associated with the new units will take place on Enbridge property

These upgrades are being done as part of operating a safe natural gas pipeline system.



# T-South Reliability and Expansion Program

## Timeline

- Clearing activities mid-November 2019
- General contractor awards Q4 2019
- Construction activities spring 2020

## Jobs and Economic Impacts

- Work activities will occur at two compressor stations north and south of Prince George
- It's anticipated that each of these locations will have a workforce of approximately 70-80 persons
- Local labour will be sourced from Prince George by Enbridge's general contractor where available
- Workers will be encouraged to support local businesses for their day-to-day living needs (accommodations, fuel, groceries, entertainment, etc.) while working in the area

**Labour will be sourced from Prince George and workers will be encouraged to use local businesses**





# Compressor Station 4A Summit Lake

## Project Scope

- Installation of new state-of-the-art compressor unit including horsepower enhancement to compressor and gas turbine
- Addition of a new gas cooler
- Installation of equipment, utilities and buildings required to support the new unit
- Decommissioning of one of the existing units

## Noise Mitigation and Low-Emission Technology

- Quieter and more efficient – adhere to BC OGC noise guidelines
- Overall net reduction in nitrogen oxide emissions



# Compressor Station 4B Hixon

## Project Scope

- Installation of new state-of-the-art compressor unit including horsepower enhancement to compressor and gas turbine
- Addition of a new gas cooler
- Installation of equipment, utilities and buildings required to support the new unit
- Decommissioning of one of the existing units

## Noise Mitigation and Low-Emission Technology

- Quieter and more efficient – adhere to BC OGC noise guidelines
- Overall net reduction in nitrogen oxide emissions



# Project Workforce

- The peak workforce during construction will have approximately 120 people on-site at each compressor station
- The average workforce from the beginning to end of the construction schedule will be ~70-80 persons per compressor
- All personnel not local to the Prince George area will be encouraged to support local businesses for their day-to-day living needs (e.g. accommodations, fuel, groceries, entertainment, etc.) while working in the area
- Union and non-union contractors will be included in the general contracting competition



**Employment opportunities will be available through Enbridge's general contractor to be selected in Q4 2019**

# Community Impacts

- During peak construction, the project's workforce could place increased demand on community infrastructure, police or medical/emergency services by increasing the potential for work-related accidents or injuries, or increasing the potential risk of motor vehicle incidents during commutes to and from work.
- Enbridge in coordination with its general contractors will implement emergency response plans, as well as traffic and access management plans and employment policies to help reduce overall effects on these services
- Project-related residual effects on services will be short-term, and low in magnitude
- Enbridge will work with the City of Prince George on preparing for impacts
- Enbridge will consult with Prince George on an Emergency Management Continuing Education Program

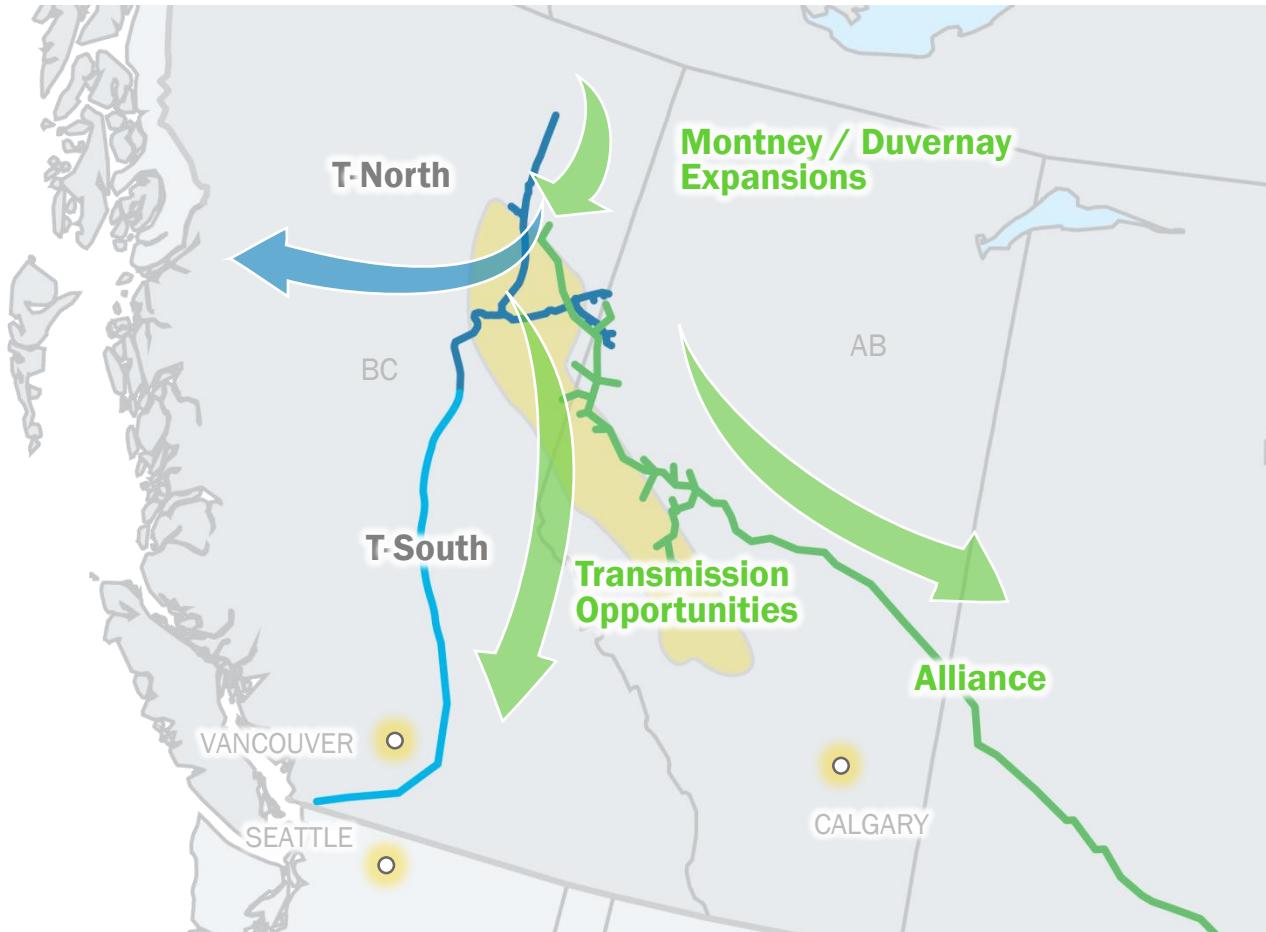


# B.C. Growth Opportunities

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# Western Canada - Potential Growth



## Western Canada

Growing supply presents many infrastructure opportunities to support Montney and Duvernay:

- Pipeline expansions: T-North, T-South, Alliance
- NGL infrastructure solutions
- Greenfield LNG

**\$4-6B**  
in gas & NGL  
pipeline  
opportunities

**\$5-10B**  
in LNG specific  
opportunities

Enbridge ideally positioned to capture opportunities

# Q&A

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