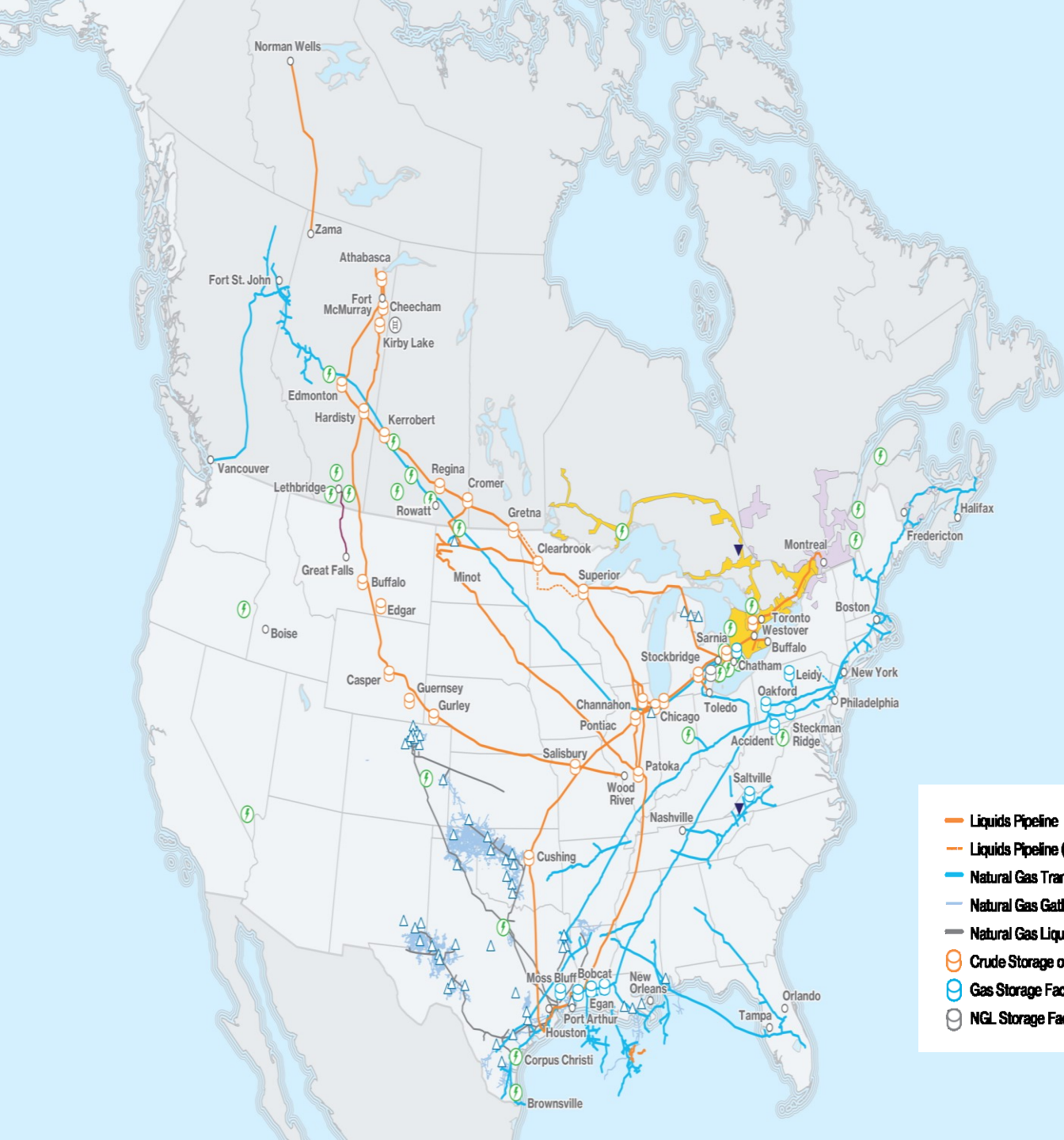












# City of Merritt Enbridge Operations Update

November 5, 2019



- |   |   |
|---|---|
| <span style="color: orange;">—</span> Liquids Pipeline  | <span style="color: blue;">▼</span> LNG Facility  |
| <span style="color: orange;">- - -</span> Liquids Pipeline (proposed)   |  Rail                                  |
| <span style="color: blue;">—</span> Natural Gas Transmission Pipeline   | <span style="color: purple;">—</span> Power Transmission  |
| <span style="color: blue;">—</span> Natural Gas Gathering Pipeline  |  Renewable Energy                      |
| <span style="color: grey;">—</span> 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      |   |



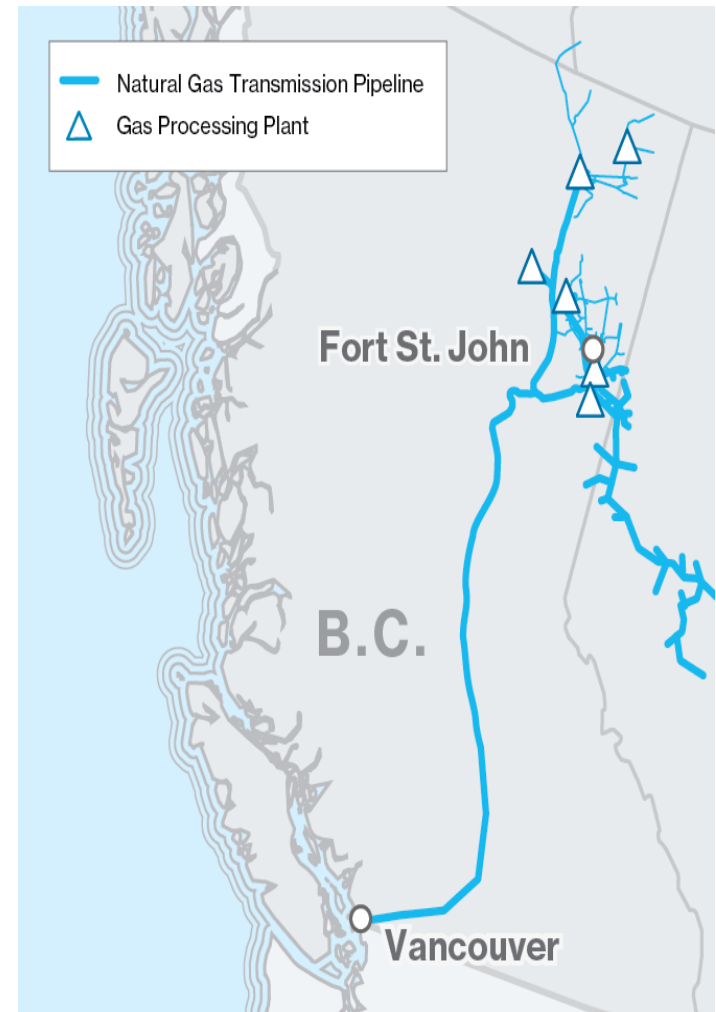
# Operations in British Columbia



## Six decades of safe and reliable operations

- Our facilities have been the backbone of the natural gas sector in British Columbia (B.C.) for more than 60 years
- 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.



# Community Investment in British Columbia



## **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

At Enbridge, we believe a community belongs to everyone who lives there. And, no matter who we are or where we live, all of us want to make life better for our families, our friends, our neighbours and ourselves.

# Economic Impact to British Columbia

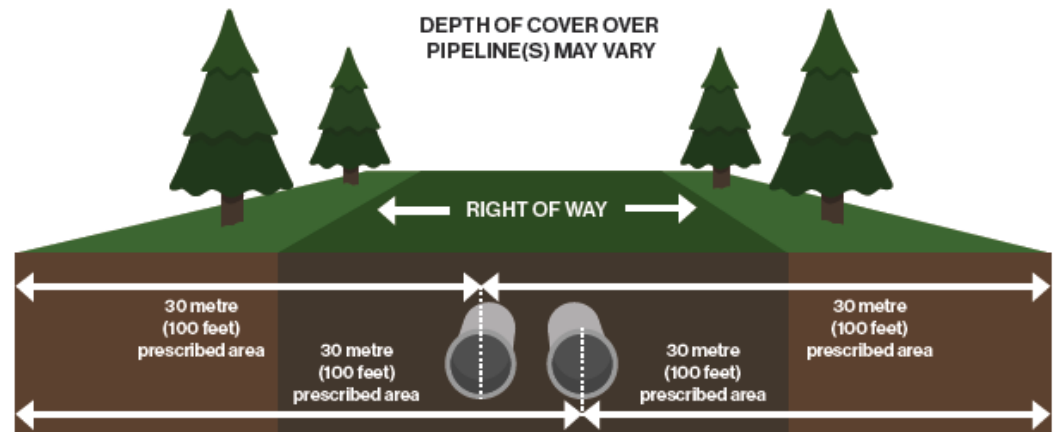


## Tax Revenue and Economic Spinoffs (2018):

- \$74.9 million in property tax across B.C. for our energy projects, pipelines and related facilities (such as compressor stations).
- \$89.8 million in other taxes (including carbon tax, payroll tax, fuel tax, and excise tax) across B.C.
- \$877.1 million on capital expenditures in B.C., on such items as pipe steel, equipment purchases and replacement, system integrity-related investments, and capital leases.
- \$657.8 million on operating and administrative expenditures in B.C., such as maintenance costs, equipment leases, power consumption, and field personnel salaries and wages.
- 683 B.C.-based permanent and temporary employees, and provisioned contractors.
- More than \$64 million in base salary paid to our B.C.-based permanent and temporary employees—much of that injected directly into the provincial economy.

# About Natural Gas and 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



# Enbridge Safety and Operations

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# Integrity Dig Program



- Enbridge is in the business of safety and prevention is a key element of our multi-pronged approach to pipeline and facility safety – and preventative integrity digs are a critical component of our prevention program.
- A maintenance dig involves physically examining the integrity of the pipe segment to determine if a repair or other action is needed.
- Our goal is to return all lands back to their original state once work is completed.



# 1,081

In 2018, we conducted 1,081 preventative maintenance digs across our natural gas pipeline infrastructure.

This ongoing preventative maintenance program is the most extensive in the history of the North American pipeline industry.

In the three-year period from 2016 through 2018, we spent C\$3.7 billion on programs that help us to maintain the fitness of our pipeline infrastructure across North America.



# Upgrade Work is Necessary

## Pipeline Segment Replacements:

- As population densities increase within proximity to existing pipelines, some pipe segments require replacement in order to meet more stringent design criteria associated with more populous locations.

## Crossover Assembly Additions:

- New crossovers are installed at intervals along the system to allow for more efficient and safe execution of pipeline integrity investigations and maintenance operations.
- New crossovers may also be required to comply with more stringent isolation valve spacing regulations in areas of increased population density.

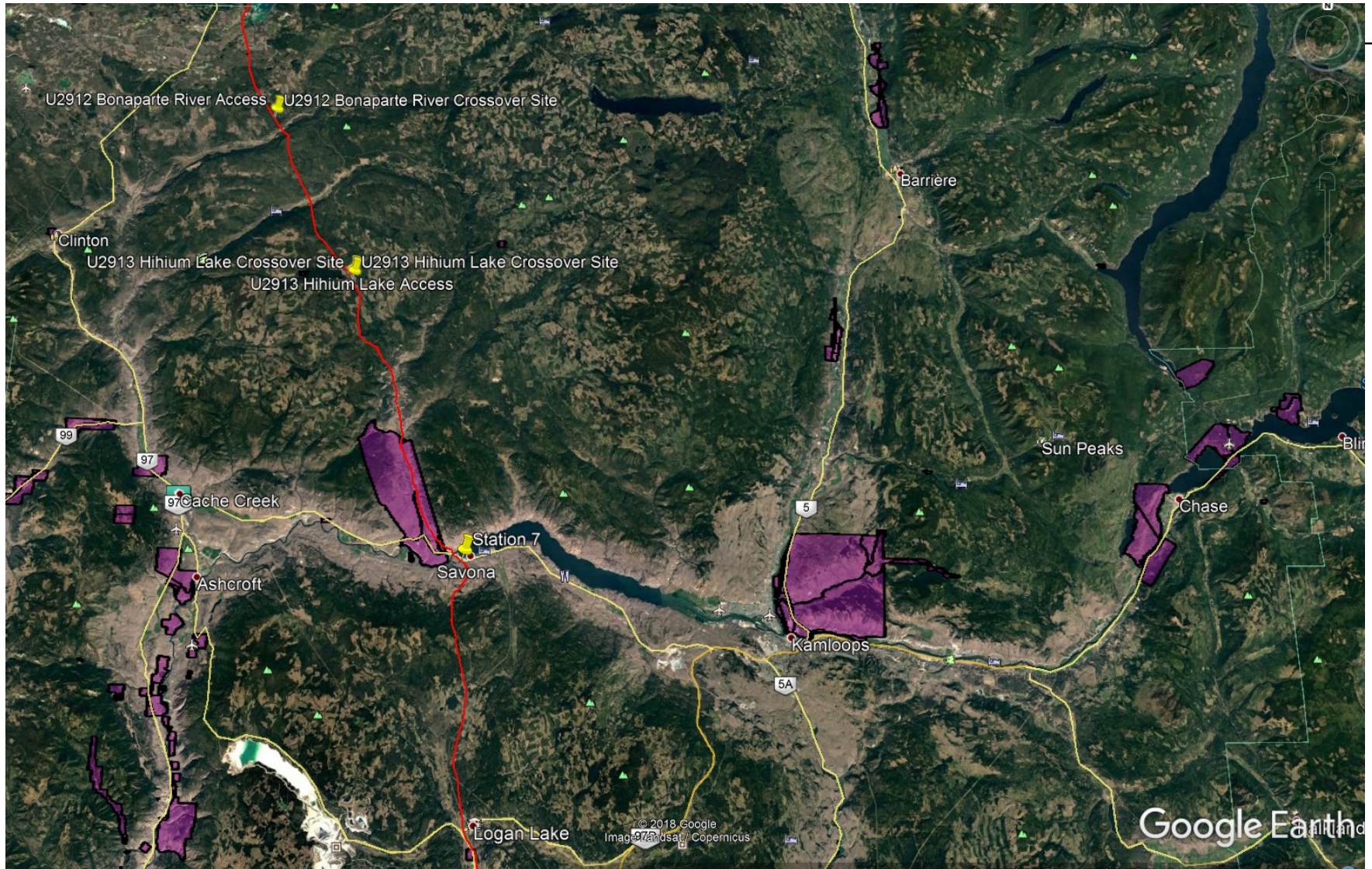
## Compressor Station Upgrades:

- Replace aging, outdated equipment with new, more efficient units.





# Bonaparte & Hihium Crossovers





# Logan Lake Gas Pipeline Replacement Project



## Logan Lake:

- Enbridge plans to replace 900m of 30" & 36" natural gas pipeline in the 2020 or 2021 construction season.
- Late summer or fall of this year Enbridge will conduct an archaeological impact assessment (AIA) and environmental field screening for the project.
- Once started, construction will take approximately 3 months to complete.



# Mainline Class Location Program and City Planning



As your community grows near the transmission system, a class location change may be triggered by the Canadian Safety Authority (CSA-Z662-15). This is important to consider when creating your official community plan.

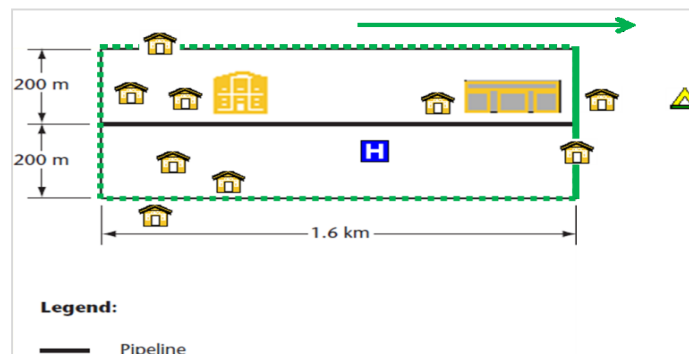
Class locations are determined on the basis of assessment areas that are 400 m wide by 1.6km long. They take into account all buildings, dwelling units, places of public assembly, and industrial installations contained within this area.

Past location changes:

2016 and 2017 a class location change occurred in Lac La Hache.

2017 a class location changed occurred at Deep Creek.

In 2021 a class location change is planned for 108 Mile Lake to approximately 200 meters of 36-inch pipeline. Field work including archaeology is planned for Spring 2020.



**Class Location Assessments are required by the Canada Energy Regulator (formerly NEB) and Canadian Standards Association to identify areas of potential upgrade to a pipeline due to population density growth.**



# T-South Reliability & Expansion Program

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# T-South Reliability and Expansion Program



## Program 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.



# Questions & Answers

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