



Pipeline Safety

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An underground transmission pipeline is the safest and most environmentally responsible way to transport large volumes of natural gas. Across North America there are 500,000 kilometres of gas transmission pipelines, and over five million homes and businesses across Canada safely use natural gas for heating and other needs.

It will be safe to walk, bike and ski over the planned Brunswick Pipeline. Where the pipeline crosses under existing roads, it will be designed to allow cars, trucks and other vehicles to continue using the road as before. There are thousands of cars crossing other buried pipelines in New Brunswick every day.

Natural Gas: A Safe Fuel

Canadians have been using natural gas at home and at work for over 100 years. In fact, the first discovery of natural gas was made in New Brunswick in 1859. However wide-scale production and transmission wasn't developed in Canada until the turn of the century. Canada's first natural gas transmission pipeline was constructed in 1912 in Alberta and the country's first interprovincial pipeline began transporting natural gas in 1956.

These pipelines enabled producers to transport natural gas across vast distances and provided a clean and cost-effective energy source to all sizes of communities. The Maritimes & Northeast Pipeline was the first major natural gas transmission system to operate in the Maritimes. It began transporting natural gas through Nova Scotia and New Brunswick, including a lateral pipeline into Saint John, in 2000. Service to other parts of New Brunswick followed in 2001 – including St. George, Moncton and Fredericton. St. Stephen gained access to natural gas service in 2004.

In communities across North America, such as Saint John, natural gas heats water, cooks food and provides warmth to business and residential users. It is an important source of energy, powering an increasing amount of electricity production in both Canada and the United States.

Natural gas is the cleanest burning fossil fuel. It is composed primarily of methane, an odourless chemical compound that is lighter than air.

BRUNSWICK PIPELINE
An Emera Company



Meeting Safety Standards and More

The design and construction of transmission pipelines in Canada are guided by strict regulations made by the National Energy Board (NEB) and the Canada Standards Association (CSA). These standards regulate operating pressures, pipe wall thickness, protective pipe coatings, depth of burial, public safety and system integrity management.

Brunswick Pipeline prides itself on implementing safety measures that meet or exceed these federal regulations, which are considered among the highest industry standards in the world. We will take many precautions throughout the design and construction of Brunswick Pipeline – because no business objective is more important than the safety of people living and working around the pipeline.

These precautions include:

- High strength steel and specialized welding techniques;
- Protective epoxy coating to protect against corrosion;
- Class 3 pipe for the entire 31-kilometre section of pipeline within urban Saint John, exceeding federal regulatory requirements;
- Bury pipe 50 per cent deeper than required to a depth of 0.9 metres. Regulations require the pipe be buried 0.6 metres; and
- Pre-operation hydrostatic tests to verify strength under extreme pressure.


Pipeline Construction and Operations: A Safe Worksite

Brunswick Pipeline will carefully monitor the safety and integrity of the pipeline system during every stage of construction and operations.

We will use high strength steel and specialized welding techniques, developed specially for high pressure pipelines. During pipe manufacture, each length of pipe will be thoroughly inspected with sophisticated instruments, both by the pipe manufacturer and by our own inspectors. These tests make sure the pipe meets the strict quality-control standards established by the CSA and Brunswick Pipeline.

The entire outside surface of the steel pipe will be coated with a protective epoxy to help prevent corrosion of the steel.





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During installation, every welder on the construction site will need to pass a series of performance tests. Their work will then be closely monitored by Brunswick Pipeline inspectors. Each weld on the pipeline will be x-rayed or ultrasonically inspected to ensure pipe joints meet strict standards.

Prior to entering commercial service, the pipeline will be filled with water and its pressure raised above maximum operating conditions, to confirm the strength and structural integrity of the pipeline. This process is known as hydrostatic testing.

Transmission Pipelines: A Safe System

Brunswick Pipeline will diligently maintain the integrity of its pipeline transmission system. Once construction has begun we will stay in contact with government officials to monitor potential security threats, and will continue to do this after the pipeline is operational. We will also monitor the pipeline system 24 hours a day, seven days a week with state-of-the-art computerized equipment and regular patrols – by air and by ground – of the entire route.

Pipeline system failures are extremely unlikely. In fact, according to statistics provided by the Transportation Safety Board of Canada, transmission pipelines are the safest way to transport large volumes of natural gas. The North American natural gas pipeline network is safer than highway, rail, air or marine transport.

Historically, corrosion has been the leading cause of pipeline failures.

However, there have been a number of technological advancements that dramatically reduce the potential for corrosion to cause a pipeline failure. For instance, steel pipelines are now protected with epoxy coatings, a chemical resin that provides a protective layer between the pipeline and the natural gas flowing through it.

In addition, workers will install a cathodic protection system during construction. This is a complex process that protects against corrosion by imparting a low voltage current on the pipe.

This system will be regularly monitored by field technicians throughout the life of the pipeline to ensure it is working properly and no corrosion is taking place.

Once in service the pipe will be regularly inspected from the inside with sophisticated electronic equipment that can identify any changes in the steel pipe wall. In the unlikely event that there are changes to the pipe wall thickness or other damage to the pipe wall, the pipe will be repaired or replaced as necessary.

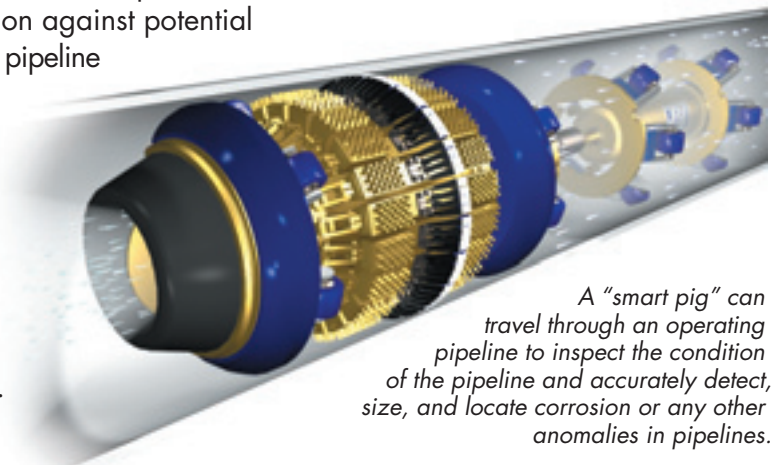
Technologies such as these provide excellent protection against potential problems with the pipeline system. In fact, unauthorized digging by an excavator working near a pipeline is the main remaining threat to a modern pipeline.

Once again, technology is reducing this risk too. A recent study conducted by Dr. John Kiefner, an engineer and a North American expert in the field of pipeline integrity, concluded that 99.5 per cent of the excavators used in North America are not capable of puncturing a pipeline with a Class 3 wall thickness, such as the one planned for the Brunswick Pipeline system in the urban Saint John area.

Brunswick Pipeline's transmission system will be designed to quickly isolate and block sections of the pipeline through a series of valves to allow for rapid containment in the unlikely event of an emergency.

To further protect the pipeline from unauthorized activities, Brunswick Pipeline will maintain a public awareness program to remind people to call before they dig near the pipeline route.

We also work with local and provincial emergency response personnel to design and implement emergency response plans. We will ensure First Responders have the proper training needed to deal with emergencies.



A "smart pig" can travel through an operating pipeline to inspect the condition of the pipeline and accurately detect, size, and locate corrosion or any other anomalies in pipelines.



We welcome the public's help to maintain a safe, secure and reliable pipeline system. If you observe any unusual or suspicious activity near our pipeline facilities, or in the unlikely event of an emergency, please contact us at 1 888 444-6677.



For more information please contact us at:

1 888 491-3222

www.brunswickpipeline.com

40 Wellington Row, Saint John, NB E2L 3H3

1894 Barrington Street, 17th Floor, Halifax, NS B3J 2A8