The Straits of Mackinac are a truly special place. The health and the protection of these waters are essential to the vitality, the sustainability, and the economic prosperity of the region.

We understand how important the Straits and the Great Lakes are to Michigan residents—because, for more than 60 years, we’ve been part of the Michigan community. Since 1953, Enbridge’s employees and contractors have lived and worked across the state as colleagues, neighbors, and friends.

Safety is at the very foundation of our business. It’s one of our core company values, and our people live it every day. Our Line 5 Straits of Mackinac crossing has never experienced a leak in more than six decades of operation—and we’re working diligently to keep it that way. We believe all pipeline incidents can be prevented, and we back up that belief with vigilance and hard work.

In this brochure, we present an overview of Line 5—its extraordinary design and construction, which still exceed today’s industry standards; the ongoing measures we take, including 24/7/365 monitoring, to promote its continued safe operations and protect the environment; and its role in heating homes and businesses, fueling vehicles, and powering industry in the state of Michigan.

Being a good neighbor is our goal. Staying safe is our highest priority.

More information on Line 5 is available at enbridge.com/line5, while greater detail on our Michigan operations can be found at enbridge.com/michigan. Our Facebook and LinkedIn channels feature regular updates on our operations in Michigan, and elsewhere.

Thank you.

Brad Shamla
Vice President,
U.S. Liquids Operations
Line 5 is an Enbridge pipeline that was built in 1953. The line runs for 645 miles from Wisconsin, under the Straits of Mackinac, through Michigan to Sarnia, Ontario. It was built to high safety standards, and Enbridge maintains Line 5 with regular inspections, and the introduction of new measures that help ensure the line continues to safely transport the light crude oil and natural gas liquids that help to fuel quality of life for people in Michigan.

What is Line 5

Line 5 at a glance

Inspection
The pipeline is regularly examined using state-of-the-art inspection tools.

Safety
Line 5, along with the rest of our pipeline system, is monitored 24 hours a day.

Pipeline Contents
Line 5 transports natural gas liquids (NGLs) and light crude oil. It does not and will not carry heavy oil.

Operations
The line is operated at less than 25% of maximum pressure capacity for enhanced safety.

540,000 barrels of NGLs, including propane, and light crude moved per day on Line 5

85% of Upper Peninsula and northern Michigan homes are heated by the propane carried on Line 5

24/7/365 Line 5 is monitored around the clock by both human and automated resources
Enbridge’s Line 5 Straits of Mackinac crossing was built for an underwater environment, and still exceeds today’s standards for pipeline safety. In 1953, it was built to extraordinary standards, using the finest engineering expertise from across the United States. The twin pipelines under the Straits have not experienced any leaks in six decades of operation—a testament to their design, construction, and maintenance regimen.

The Bechtel Corporation, the University of Michigan’s Department of Naval Architecture and Marine Studies, and Columbia University’s Civil Engineering Department were involved in the engineering, design, and construction process. To promote the safety and integrity of the crossing, support anchors have been constructed and placed along the section of Line 5 that runs beneath the Straits of Mackinac. While federal regulations allow for a span of up to 140 feet between underwater support anchors, Enbridge committed to further enhancing the safety of the crossing by placing additional anchors beneath the Straits crossing. Today, underwater supports are no more than 75 feet apart.

Key safety, design and operation features help to ensure Line 5’s ongoing integrity.
Safety is important to everyone—especially the people who live, work, and play along pipeline routes.

We place the highest priority on the safety and reliability of our pipelines, including Line 5, through industry-leading operations, monitoring programs and technology.

Harnessing technology

As we do with all our pipelines, we work hard to operate, inspect, and maintain Line 5, so we can fix potential issues before they happen. We’ve invested millions of dollars into the best monitoring and inspection practices. We’ve also partnered with Michigan Technological University’s Great Lakes Research Center to test and enhance a state-of-the-art Autonomous Underwater Vehicle (AUV) that maps the bottom of the Straits, using sonar technology to ensure the terrain near Line 5 is hazard-free.

Knowing how important the Great Lakes are, we pay special attention to the Straits of Mackinac. While the likelihood of a leak in the Straits is extremely low, we understand that the consequences would be significant. We rely on both human resources and technology to constantly monitor the continued safe operation of Line 5.

24/7 monitoring

In 2011, Enbridge opened a new, modernized Control Center. The center is specifically designed to enhance the safety and reliability of pipeline operations. How? By using the latest in computer modelling technology and by creating the best conditions to support our operators as they conduct critical around-the-clock operations and monitoring.

Being prepared

While prevention is key, Enbridge also maintains a significant focus on emergency response and preparedness. In the case of the Line 5 Straits crossing, we’ve developed a Tactical Response Plan working with the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration (PHMSA). This plan has been tested through a full-scale emergency response exercise, involving key stakeholders that include the United States Coast Guard and local emergency management officials.

To learn more about how we work, visit enbridge.com/line5

What else are we doing to stay safe?

- Increasing the frequency of our inspections
- Reducing the average underwater span lengths to no more than 75 feet
- Developing a water current modeling study to examine the effect of currents on the pipelines

$74 million

Invested in company-wide training and incident response equipment between 2012 and 2014

371

Company-wide emergency response exercises, drills, and equipment deployment events held in 2014
We’ve had a presence in Michigan for nearly as long as Enbridge has been in existence.

Since 1953, Enbridge’s employees and contractors have lived and worked in communities throughout Michigan as colleagues, neighbors, and friends.

Our Line 5 pipeline transports petroleum products, such as natural gas liquids (NGLs) and light crude oil, that are refined into fuels vital to everyone who lives and works in Michigan.

We work hard to live up to that “good neighbor” status in a variety of ways—economically, socially, and culturally. As a company, and as individuals who live and work in communities across Michigan, we want to make our communities safer, healthier, smarter, greener, more enriching, and more inspiring.

Enbridge is committed to enriching the communities near our projects and operations. From investing in the conservation of local trails to donating our retired fleet vehicles to fire departments, search-and-rescue teams, and EMS providers across Michigan, we know that being a good neighbor means being essential to the fabric of a community.

We adhere to a strong set of values—integrity, safety and respect—that reflect what is truly important to us. Enbridge has been part of Michigan life for over 60 years—and with 250 employees and contractors, we hope to be a part of it for many more.
Enbridge is the same company that caused a giant spill in Marshall. Why would this be any different?

We regret the spill in the summer of 2010 that caused oil to flow into the Kalamazoo River. Those were the darkest days in our company’s history and we will never forget the lessons of Marshall. Since then, Enbridge has transformed its approach to safety, investing heavily in enhanced monitoring, safer pipelines, and more staff to keep operations safe.

Will Line 5 be used to transport oil sands?

Line 5 carries light crude oil and natural gas liquids, which power manufacturing, heat homes and fuel our cars. It has not carried, and will not carry heavy oil.

Line 5 transports products that benefit other states or countries.

Does it benefit Michigan?

Line 5 delivers 85% of Northern Michigan’s home heating fuel. It also transports roughly 14,000 barrels per day of crude oil produced in Michigan. About 30% of the crude oil carried by Line 5 stays in the region—where it’s processed by refineries in the greater Detroit area, used to power industry, and turned into the gas, diesel and jet fuel that keeps our economy running. Enbridge paid $22.4 million in property and sales and use taxes in Michigan in 2014.

Some have called for Enbridge to permanently remove Line 5. Why hasn’t it been done?

A lot of people and businesses depend on the light crude oil and natural gas liquids delivered by Line 5. Without it, the state’s access to affordable, secure energy would be compromised.

What would happen if there were a leak or spill?

If there is a change in pressure or flow, Enbridge can remotely shut off flow in three minutes and activate trained responders. A response plan, which reflects input from the U.S. Coast Guard and Environmental Protection Agency, is in place, and local emergency responders are trained on it and prepared to respond if an incident were to happen.

For more information on Line 5, go to enbridge.com/line5.

Over the summer, Enbridge sat down with residents from communities in the Upper and Lower Peninsulas to talk about Line 5. We are very thankful for the opportunity and their feedback. Participants raised some great questions and concerns that we wanted to share more widely throughout the state. We hope this information is helpful to others in Michigan who value the Great Lakes and want to know that Enbridge is operating Line 5 safely.

What does Enbridge do to ensure the safety of Line 5?

A dedicated team monitors the line constantly. Enbridge also conducts internal inspections via a MRI-like tool known as a “pig” that travels the line recording data on the pipe’s thickness and looking for cracks, dents or signs of corrosion. We keep an eye on the outside of the pipeline with the help of divers and, in partnership with Michigan Tech, use an Autonomous Underwater Vehicle to visually inspect the line. We perform these inspections twice as often as federal pipeline regulations require.

Is Line 5 deteriorating?

Line 5 was built for the underwater environment, with nearly one-inch-thick steel walls and fiber-reinforced enamel coating. It was built by Merritt-Chapman & Scott, the same company that built the Mackinac Bridge, using the same kind of steel. Like the bridge, the intention has always been to operate and maintain it carefully to maximize its lifespan. Recent inspection reports show that Line 5, from an engineering and integrity perspective, is like new and in excellent condition.

How can you convince me that you care about Michigan.

Safety is one of our core values. The people who live near our pipelines expect us to operate safely, and the protection of the public and the environment is our highest priority. More than 250 Michigan residents are employed or contracted with Enbridge, and they all play an important role in maintaining the safety and reliability of our pipelines and facilities.
Enbridge helps to provide a secure, sustainable and reliable supply of energy to Michigan, and across the U.S. and Canada.

Millions of North Americans count on the energy we deliver daily. Providing safe and reliable infrastructure is the very foundation of our business. That’s why our top priority is the protection of people and the environment. Our strategic investments in infrastructure upgrades help ensure the reliability and safety standards that all communities expect.

Enbridge transports, distributes and generates energy. We play a central role in providing heat and light for homes, offices and factories; fuel for vehicles and airplanes; and many other essential products and services that support prosperity and quality of life for millions of people.

Energy transportation
Enbridge operates the world’s longest crude oil and liquids transportation system, delivering over 2.2 million barrels per day to customers in the U.S. and Canada.

Energy distribution
We own and operate one of the largest natural gas distribution companies in North America, Enbridge Gas Distribution.

Energy generation
We have invested more than $4 billion in wind, solar, geothermal, power transmission, waste heat recovery, and a host of emerging technology projects that, together, have the capacity to generate more than 2,200 gross megawatts (MW) of zero-emission energy—that’s enough to supply the electricity needs of nearly 750,000 homes.

We believe that working towards lower-impact energy solutions is in everyone’s best interest. Our portfolio of renewable energy projects is diversified and growing.

A North American company
We employ about 11,000 people across the U.S. and Canada. Enbridge has been included on the Dow Jones Sustainability North America and World Indices in each of the past three years. Enbridge Inc. common shares trade on the New York and Toronto stock exchanges.

Enbridge in Michigan
We’ve had a presence in Michigan for almost as long as Enbridge has been in existence, with our roots in the Great Lakes State stretching back to 1953. Today, Enbridge’s five wholly owned or operated pipelines that travel through Michigan—Line 5, Line 6B, Line 17, Line 79, and Vector Pipeline—carry oil, natural gas, and NGLs (including propane), and provide significant economic benefits to the state. Enbridge paid more than $22 million in property and sales and use taxes in Michigan in 2014.
We want to hear from you

We want to address any concerns that you may have. You can get in touch with us at anytime.

Here’s how:

Call us, toll free: 1-855-869-8209

Email us: line5info@enbridge.com

Visit or write to us at:
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Marshall, MI
USA 49068