

# Investing in Michigan's future

Life takes energy, and Line 5 has delivered it safely for more than 65 years. Line 5 helps heat Michigan homes, schools, hospitals, and businesses, fuels vehicles, and powers industry by safely and reliably transporting light crude oil, light synthetic crude oil and natural gas liquids (NGLs).

Michigan families and businesses rely on the energy transported through the 645-mile, Line 5 pipeline that originates in Superior, Wisconsin, travels through Michigan's Upper and Lower peninsulas, and ends in Sarnia, Ontario, Canada. Area-refineries also rely on Line 5 to produce the fuel that powers the agricultural industry, and the cars, buses, boats, and trucks that keep Michiganders on the go. In addition to manufacturing, product from Line 5 supports tourism, wineries and other businesses residents and tourists alike have come to know.

Consider the transportation alternatives to Line 5:

- 2,000 trucks one way per day.
- 800 rail cars one way per day.



## Great Lakes Tunnel Project

Enbridge is committed to making a safe pipeline even safer. The Great Lakes Tunnel Project represents an approximately \$500 million private investment by Enbridge.

The Great Lakes Tunnel Project will house a replacement segment of Line 5 in the Straits. It also will protect one of the most important natural resources in the world and reduce the chances of a release from Line 5 into the Straits to near zero.

The Great Lakes Tunnel will benefit Michigan residents and businesses providing energy security and enhanced environmental safeguards in the Straits. Enbridge moved one step closer to realizing the tunnel with its recent filing of a permit application seeking authorization to begin construction of the Great Lakes Tunnel Project. Enbridge filed the application April 8, 2020, with the Michigan Department of Environment, Great Lakes and Energy (EGLE) and the U.S. Army Corps of Engineers.

## Partnerships

Under the partnership of the Great Lakes Tunnel Constructors, Enbridge is partnering with two world-class firms. Jay Dee Contractors, Inc. of Livonia, Michigan, and world-renowned tunnel construction firm, Obayashi Corporation, will lead the construction efforts. Enbridge also has selected Arup, a leading engineering and consulting firm with large-scale infrastructure and tunnel design capabilities, to deliver construction design.

The expertise of these firms is shaping the design and construction process. With the guidance of these firms, we have updated some aspects of our plans for the tunnel.



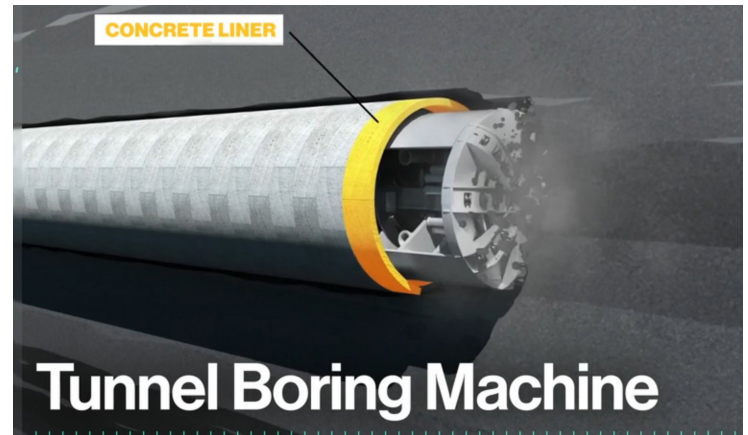
- > Subsurface data for tunnel design was collected in 2019 from the Highland Eagle, a drilling vessel supporting the required geotechnical work for this effort.

## Economic Impact

As a large construction project in northern Michigan, the tunnel will provide well-paying jobs for Michigan workers. It will also enhance environmental protections while continuing to meet the fuel and other energy needs on which area families, businesses, manufacturers, and tourism, rely.

## Preliminary Design Highlights

- The tunnel will be constructed in accordance with the Tunnel Agreement entered between Enbridge and the Mackinac Straits Corridor Authority (Authority).
- Enbridge's and the Authority's teams, including the contractors retained by Enbridge, are developing the design of the tunnel.
- Though the tunnel design has yet to be finalized, Enbridge is envisioning constructing a tunnel with an internal diameter range between 18 feet and 21 feet at a depth that will be no shallower than 60 feet below the lakebed where the tunnel is in soil, and may be up to 250 feet beneath the lakebed which will help protect the lakebed from any disturbance.

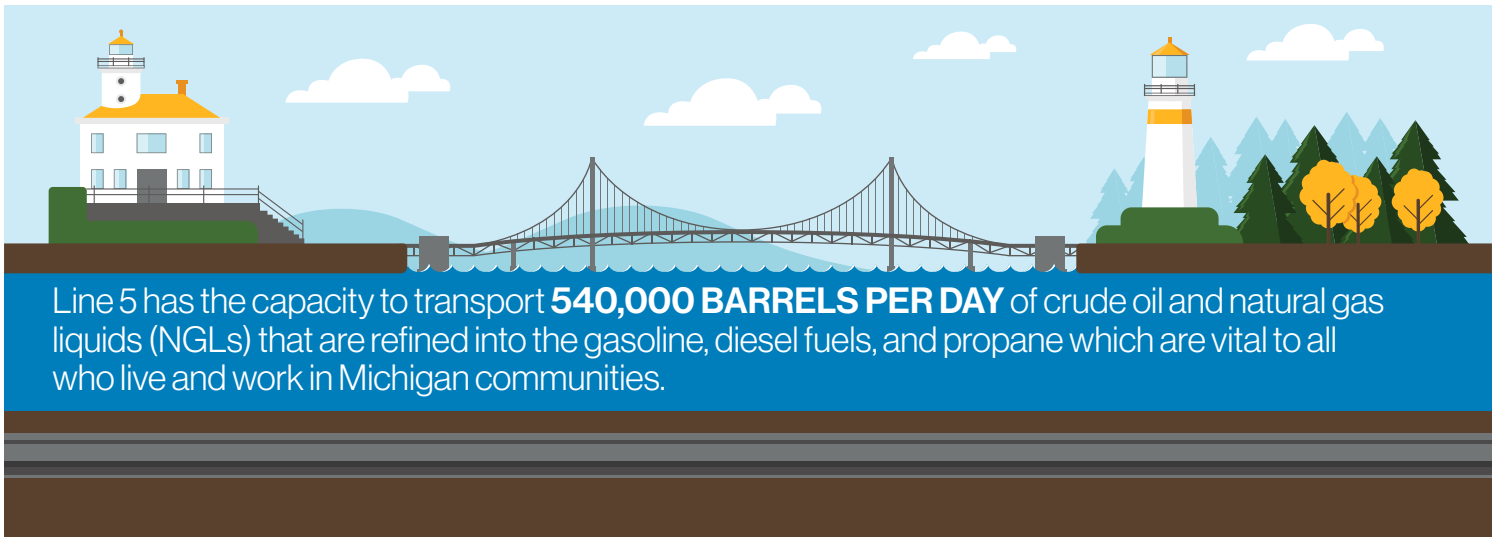


- The Tunnel will be constructed from from the south side of the Straits and traveling north which will minimize environmental impacts while allowing safe construction, operation and maintenance of the tunnel. Work on the south side would be confined to 25 acres owned by Enbridge and on land owned by other utilities with which Enbridge has easement agreements. Enbridge will maintain an approximately 115-foot buffer from the shoreline of Lake Michigan. There are no wetlands, protected species or significant cultural resources within this proposed workspace.
- The tunnel boring will end on the north side of the Straits, using workspace within approximately 16 acres owned by Enbridge. To help minimize the extent of impacts on natural resources, the workspace primarily will be located within uplands to avoid forested wetlands. Enbridge will maintain at least a 50-foot buffer from the shoreline of Lake Michigan. Some protected plant species will be impacted on the north side and we will work with the applicable agencies to offset these impacts.

## Environmental

The Tunnel will be designed and constructed to mitigate potential impacts to the environment. In conjunction with its partners, Enbridge is committed to minimizing environmental impacts not only after the replacement Line 5 segment is in operation, but throughout construction.

- Contractors will stockpile topsoil and reuse it for site restoration.
- Rock cuttings from the tunnel also might be used as structural fill. Cuttings not suitable for reuse will be stockpiled separately and removed from the site.
- All water generated as part of the boring activities will be cleaned prior to discharge.



### Anticipated Schedule

Pending receipt of necessary permits and approvals, Enbridge anticipates beginning construction in 2021 with the replacement segment of Line 5 operational in 2024.

### What Line 5 Makes Possible

From vehicles to hand sanitizers to mobile phones, computers, and aviation fuel supplying more than half of the jet fuel to the Detroit Metropolitan Airport, Line 5 is critical to all aspects of daily living. Product from Line 5 is essential to manufacturing more than 6,000 items, including clothing, medicine, vitamins, shampoo, toothpaste, medical equipment, and other necessities and products used every day.

Additionally, Line 5 meets 55 percent of Michigan's propane needs. Families and businesses in the Upper Peninsula alone rely on Line 5 to meet 65 percent of their propane needs, which in turn heats their homes, provides hot water and helps them prepare warm meals.



### Construction Jobs: Tunnel and L5 Straits Pipeline Segment Replacement

We anticipate that over two million work hours will be needed to complete this project and Enbridge is committed to using Michigan labor.

Energy shortages impact quality of life from home heating, to transportation of goods and people, as well as business and industry. While we welcome alternative energy solutions, there is a need and a place for reliable North American petroleum supply here in Michigan.

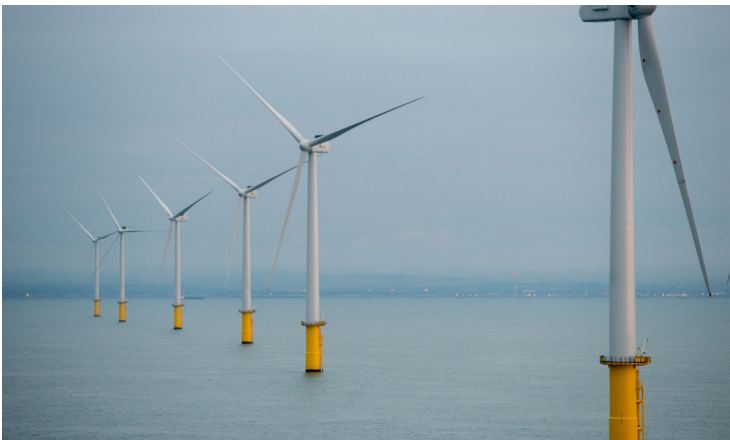




## Energy Diversity

Since our initial investment in wind power in 2002, we've committed more than \$7.8 billion in capital to renewable energy and power transmission projects either in operation or under construction. These projects, include wind, solar, geothermal and waste heat recovery, and have the capacity to generate nearly 1,750 megawatts (MW) net of zero-emission energy. That's enough to meet the electricity needs of nearly 700,000 homes, based on net generation figures.

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



## The big picture: Connecting supply with demand

