

# ISSUE BRIEF

December 1, 2023 | Case No. [U-20763](#)

## Enbridge Energy LLC Application to replace a segment of Line 5



As described in the application submitted by Enbridge in 2020, Line 5 is a 645-mile interstate pipeline that traverses Michigan's Upper and Lower Peninsulas. Line 5 begins in Superior, Wisconsin, and ends near Sarnia, Ontario. Line 5 was constructed in 1953 and is now part of the broader Enbridge Lakehead System. Line 5 currently transports light crude oil and natural gas liquids (NGLs). No heavy crude oil is transported through the line. NGLs are delivered to propane production facilities in Rapid River, Michigan, and Sarnia, Ontario. Light crude oil is delivered through various pipeline interconnections to refineries in Ontario in Canada and Michigan, Ohio, New York, and elsewhere in the United States. The light crude oil is used to produce petroleum products, including gasoline and aviation fuels used by consumers in Michigan and surrounding regions. The average annual capacity of Line 5 is 540,000 barrels per day (bpd). The section that crosses the Mackinac Straits (approximately four miles) consists of two, 20-inch diameter pipes referred to as the dual pipeline. The majority of the dual pipelines lie on top or near the top of the lakebed in the Straits.

Beginning in 2017, Enbridge and the State of Michigan entered into a series of agreements relating to the relocation of the dual pipelines into a tunnel beneath the Straits. In 2018, the Michigan Legislature enacted Public Act 359 of 2018 (Act 359), which created the Mackinac Straits Corridor Authority (MSCA) and delegated to the MSCA the authority to enter into agreements pertaining to the construction, operation, and maintenance of a tunnel to house the replacement pipeline segment. The proposed tunnel location is beneath the lakebed (i.e. drilled through rock), a different location than the current dual pipelines, which lie on the bottom of the lakebed.

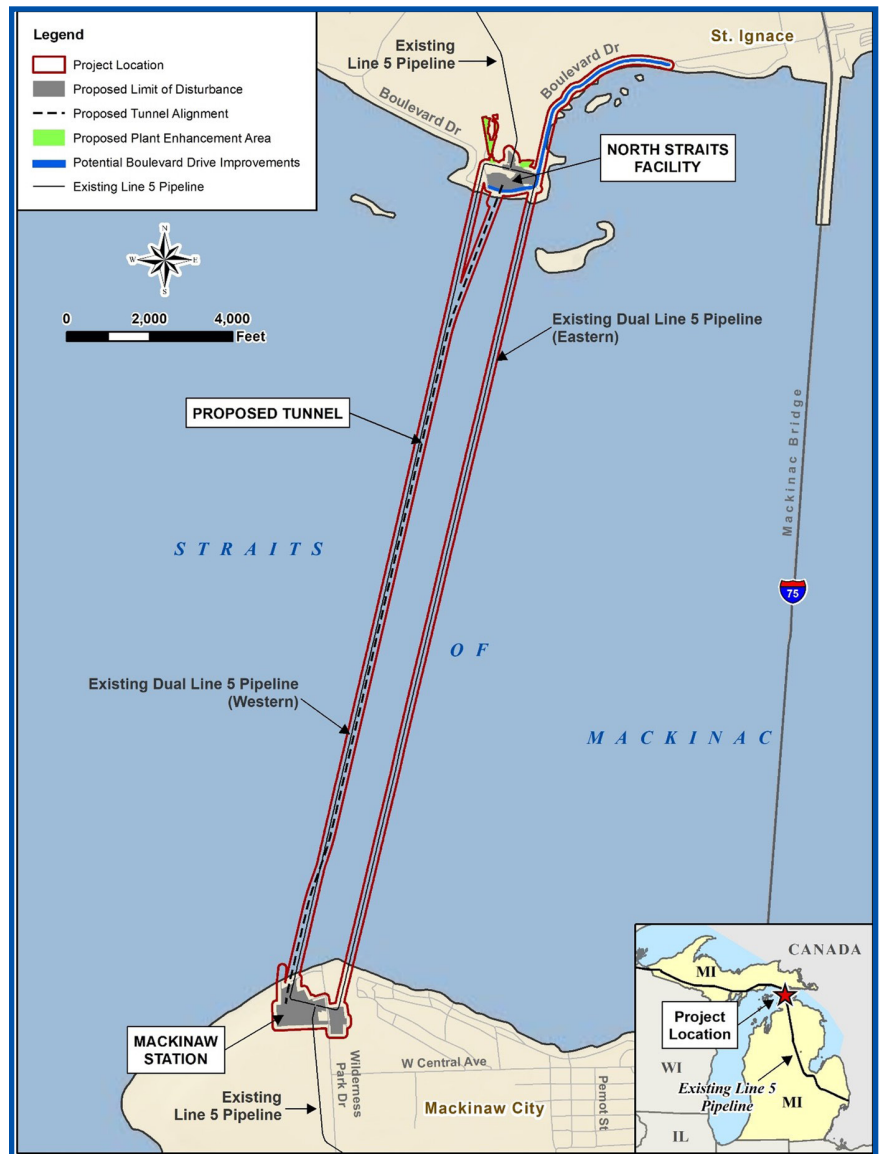


Figure 1. Line 5 Tunnel Project Overview



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**Why was a pipeline siting case filed at the Michigan Public Service Commission (MPSC or Commission)?**

Enbridge filed an application in 2020 requesting MPSC approval to replace and relocate the Straits Line 5 Replacement Segment (“Replacement Project”) pursuant to Public Act 16 of 1929 (Act 16). Act 16 generally grants the MPSC the authority to regulate businesses carrying or transporting crude oil or petroleum products through pipelines, including the authority to authorize the construction of new pipelines.

In its application, Enbridge sought ex parte approval of the Replacement Project, requesting that the Commission approve the application without notice to interested persons or a hearing. In the alternative, Enbridge requested that the Commission issue a declaratory ruling that Enbridge already had the authority to construct and operate the Replacement Project from a previous Commission order issued in 1953. The Commission denied Enbridge’s requests for ex parte approval and declaratory ruling and set this case for a contested proceeding. A contested proceeding allows interested persons to intervene as participants in the case; ask discovery questions; submit testimony, exhibits, and other evidence into the case record; cross examine witnesses; and provide arguments and positions through briefings.

The Commission invited the submission of public comments in this case and chose to read the record; thus there was no proposal for decision from the presiding administrative law judge (ALJ). Between September 2020 and January 2022, numerous motions, petitions for rehearing, and applications for leave to appeal were adjudicated by

the ALJ and the Commission. In December 2020, the Commission issued an order requesting that the parties and the ALJ evaluate how and whether Governor Gretchen Whitmer’s and the State of Michigan’s November 13, 2020 notice of revocation of the 1953 easement for the dual pipelines in the Straits might change the scope of this case. In May 2021, the ALJ set a revised schedule for the case to permit the parties to file new evidence, which pushed back the timeline for a Commission decision. The Commission also issued an order in July 2022 reopening the record to receive further testimony, exhibits, and rebuttal, stating that it was necessary for the Commission’s Act 16 review to address safety and engineering issues raised by the participants to the case. The schedule was further revised to accommodate the filing of testimony and rebuttal, to permit cross examination, and to accept briefings from the parties, which was necessary to facilitate a decision by the Commission.



Figure 2: Line 5 proposed liquid pipeline

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## What requirements must be met for MPSC approval?

In order to grant approval to an application filed pursuant to Act 16, the Commission must find that the applicant meets a three-part test:

1. The applicant has demonstrated a public need for the proposed pipeline,
2. The proposed pipeline is designed and routed in a reasonable manner, and
3. The construction of the pipeline will meet or exceed current safety and engineering standards.

Additionally, courts have found that state agencies have an obligation to apply the requirements of the Michigan Environmental Protection Act (MEPA) to regulatory decisions, including pipeline siting cases. In this case, MEPA requires the Commission to determine whether construction and operation of the Straits Line 5 replacement segment will pollute, impair, or destroy natural resources or the public trust in those resources. If the Commission finds that construction and operation of the Straits Line 5 replacement segment pollutes, impairs, or destroys natural resources or the public trust in these resources, then the Commission must determine if there is a feasible and prudent alternative to the project. If there are no feasible and prudent alternatives, the Commission must determine whether construction and operation of the Straits Line 5 replacement segment is consistent with the promotion of the public health, safety, and welfare in light of the state's paramount concern for the protection of its natural resources.

## What is the scope of the MPSC's review in this case?

The scope of the MPSC's review is limited to the approximately 4-mile segment of Line 5 crossing the Straits and a review of the tunnel only in its relationship to the pipeline. Enbridge's

application describes the Replacement Project as the "replacement of the dual pipelines with a new, 30-inch-diameter, single pipeline to be relocated within a new concrete-lined tunnel." In accordance with the authority of the Commission to regulate the transportation of crude oil or petroleum pursuant to Act 16, the Commission must consider how the three-part test and the requirements of MEPA (both discussed above) apply to the Replacement Project. The Commission clarified in its April, 21, 2021 Commission Order that the application of these provisions applies only to the Straits segment of Line 5 and does not extend to the remainder of the line.

With respect to the proposed utility tunnel, an October 23, 2020 ruling by the ALJ in this case found that evidence pertaining to the design and construction of the proposed utility tunnel is necessary for the MPSC to make a determination relative to the reasonableness of the pipeline route as well as safety of the line. However, the ALJ also clarified that this case does not entail the "approval" of the utility tunnel.

## What are the specifications of the proposed project?

The Replacement Project entails construction of a single 30-inch diameter pipeline to be located within a concrete tunnel in the bedrock 60 to 370 feet beneath the lakebed.

The proposed pipeline segment will be constructed with steel that is 0.625 inches thick and designed to meet federal pipeline safety regulations.

Before the pipeline is placed into operation, it will undergo pressure testing where it will be subject to testing at pressures greater than its allowable operating pressure. Once the pipeline is completed and tied into the broader system, the dual pipelines will be deactivated.



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The tunnel, which will have an inside diameter of 21 feet, will be constructed using a Tunnel Boring Machine (TBM) with Precast Tunnel Lining (PCTL). (See graphic below.) The tunnel is designed to allow space for the product pipeline as well as electric and communication cables, ventilation systems, leak detectors, dewatering equipment, third-party utilities, and other equipment needed for inspections and maintenance.

down, Line 5 in Michigan may be abandoned in full or in part, which will require higher-risk and costlier alternative fuel supply sources and transportation to Michigan customers.

The Commission’s order also found that there is a public need to protect the ecological, natural, and cultural resources of the Great Lakes and thus a public need to replace the dual pipelines with the Replacement Project. The Commission noted the Alternatives Analysis commissioned

by the Pipeline Safety Advisory Board in 2017 identified several threats to the integrity of the dual pipelines in their current configuration, the dominant threat being anchor hooking with the potential for a spill into the Great Lakes. The Commission found that alternative modes of transporting Line 5 products, such as truck, rail, oil tankers and barges, will increase the risk of environmental impairment and may increase the threat of spills that could significantly damage the Great Lakes, the state’s terrestrial environment, and more than 1,000 other aquatic environments in Michigan.

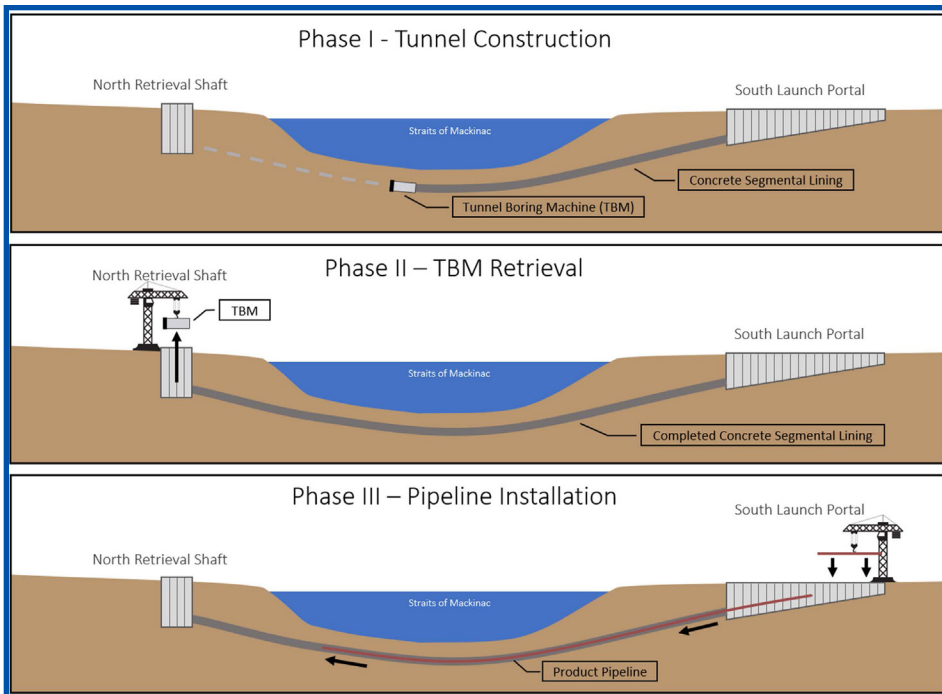


Figure 3: Tunnel-Construction

**What did the Commission find in this case?**

The Commission thoroughly reviewed the record evidence provided by Enbridge and the intervening parties to the case and determined that Enbridge’s application to replace the 4-mile dual pipeline segment with a single pipe should be approved, subject to several conditions.

The Commission determined that there is a public need for the Replacement Project and Line 5 products. The Commission’s order finds that the evidence on the record demonstrates that if the dual pipelines are damaged, deemed inoperable due to safety concerns, or shut

The Commission found that the route, location, and design of relocating the Straits Line 5 replacement segment to a tunnel beneath the lakebed of the Straits is reasonable and should be approved, subject to conditions.

The Commission found that Enbridge has demonstrated by a preponderance of the evidence that the tunnel has been designed by an experienced and knowledgeable engineering firm and that the tunnel will be constructed using state-of-the-art materials and practices that will meet or exceed industry standards. The Commission also found, based on record evidence, that the Replacement Project is a

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significant improvement over the dual pipeline configuration currently installed in the Straits because it virtually eliminates the risk of anchor strikes confronting the dual pipelines and the tunnel will serve as a secondary containment vessel to prevent Line 5 product from reaching the Straits in the event of a pipeline leak.

The Commission found that the Straits Line 5 replacement segment meets or exceeds current safety and engineering standards given that the inspection procedures required by Enbridge at the manufacturing and installation levels exceed required minimum safety standards.

The Commission also found that there are no feasible and prudent alternatives to the Replacement Project pursuant to its MEPA review.

### Did the Commission impose any conditions on the permit?

Yes. The Commission's approval of the application is conditioned on Enbridge meeting several conditions.

First, the Commission's approval is conditioned on Enbridge receiving the required governmental permits and approvals and imposing no significant changes to the route and location of the Straits Line 5 replacement segment within the tunnel following Commission approval of the application.

Second, the Commission agreed with Staff's recommendation that Enbridge must exceed the minimum federal regulations to ensure the safety, integrity, and reliability of the Straits Line 5 replacement segment. Therefore, the Commission directed Enbridge to implement procedures for low-hydrogen welding for all mainline girth welds and to ensure that the procedures require both preheat and inter-pass temperature requirements. Enbridge must also ensure that the mainline girth welds are nondestructively tested using automatic phased

array ultrasonic testing methods.

Finally, the Commission conditioned approval related to the route, location, and design of the pipeline on the premise that no third-party utilities are to be co-located in the tunnel without further application to, and approval by, the Commission.

### Did the Commission's order provide any other recommendations?

Yes. The Commission's order provided several recommendations. The Commission recommended that, before initiating construction, Enbridge provide to the State of Michigan: a detailed risk management plan including geotechnical test bore siting with related data and real-time reporting; results of concrete cast section inspections; placement plan of gaskets; analyses of bentonite mix; and any changes in slurry pressure.

The Commission also recommended that, to the extent feasible, beneficial, safe, and permitted by agreements and other permitting authorities, all equipment that will be used in the tunnel should be designed to meet the more stringent standards for electrical equipment under the National Electric Code. The Commission finds that this recommendation provides additional safety and risk mitigation in the event of an "accidental rupture or breakdown of [closed] containers or systems, or in case of abnormal operation of equipment".

### Who are the intervenors in this case?

The following parties intervened in the case:

- Bay Mills Indian Community
- Environmental Law & Policy Center And Michigan Climate Action Network
- For Love Of Water
- Grand Traverse Band Of Ottawa And Chippewa Indians

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- Little Traverse Bay Bands Of Odawa Indians
- Mackinac Straits Corridor Authority
- Michigan Attorney General Dana Nessel
- Michigan Environmental Council
- Michigan Climate Action Network
- Michigan Laborers’ District
- Michigan Propane Gas Association
- National Wildlife Federation
- Nottawaseppi Huron Band Of Potawatomi Indians
- Tip Of The Mitt Watershed Council

**Are other state or federal agencies involved in approvals of the proposed line and/or operations of the current/proposed line?**

Yes. Enbridge must receive approval for the Replacement Project and tunnel from several agencies before moving forward with construction.

The following agencies are all involved with the review of the proposed tunnel:

- Michigan Department of Environment, Great Lakes, and Energy (EGLE)
- Mackinac Straits Corridor Authority (MSCA) and Michigan Department of Transportation (MDOT)
- Michigan State Historic Preservation Office (SHPO)
- United States Army Corps of Engineers (USACE)
- U.S. Fish and Wildlife Service (USFWS)

Some agencies have completed their review and granted necessary approvals while others are continuing in their review processes and have not yet issued final determinations.

Additional oversight for the pipeline and regulation of its construction, operation, and maintenance will come from the Pipeline and Hazardous Materials Safety Administration (PHMSA).

**What was the Commission’s engagement with the Tribal communities?**

MPSC Staff began communications with all twelve of Michigan’s Tribes prior to Enbridge’s application. Throughout the case, Staff sent e-mail updates and participated in or facilitated several virtual consultations for Tribes to provide input, ask questions, and discuss the Replacement Project and MPSC process with Staff. These consultations comply with Executive Directive 2019-17, which outlines the process of Tribal consultation designed to ensure meaningful and mutually beneficial communication and collaboration between Tribes and State of Michigan departments and agencies on all matters of shared concern.

**Did the Commission engage the public during this case?**

Yes. This case has spanned multiple years of engagement and data collection. The case includes several motions and six interim orders that addressed the scope of the submitted evidence and reopening of the record. The Commission took several steps in this case to expand ease of access to information in the case for members of the public. In August 2020, the Commission held a virtual public hearing to receive comments from the public. It also created a dedicated [Line 5 website](http://Michigan.gov/MPSCLine5) (Michigan.gov/MPSCLine5), a guide to the MPSC’s siting authority under Act 16 of 1929, and a recorded Staff presentation that provided an overview of Enbridge’s application. The Commission received comments from more than 23,000 individuals and groups throughout the case, including written comments, comments from public hearings, and comments made at



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Commission meetings. The record in this case consisted of more than 2,500 pages.

### Does the Commission's order in this case impact pending lawsuits seeking to shut down Line 5?

The Commission's decision in this case is independent of other lawsuits.

### What comes next?

As with any case decided by the Commission, it is possible that the decision could be appealed. An appeal of a Commission decision must be filed in the appropriate court within 30 days of the issuance of the final order. Should a Commission order be appealed, a court may affirm the Commission's order, overturn

the Commission's order, or remand the Commission's order for further consideration. However, absent a court decision that overturns the Commission's order, Enbridge will be able to proceed with the construction of the replacement pipeline should the tunnel project be approved by other regulatory agencies including MSCA and USACE. Assuming approval of the tunnel project, once the replacement pipe goes into service, Enbridge will deactivate the dual pipelines.

MSCA is responsible for overseeing construction and operation of the tunnel and will own the tunnel after its construction, providing independent oversight throughout its life. Enbridge will operate and maintain the Line 5 pipeline within the tunnel.

