**Enbridge**
7701 France Avenue
Suite 600 – Centennial Lakes Park I
Edina, MN 55435
U.S.

January 31, 2019

Mackinac Straits Corridor Authority
C/O Gregory M. Losch - MDOT Director Designee
Innovative Contracting Manager
Van Wagoner Building
425 W. Ottawa Street
P.O. Box 30050
Lansing, MI 48909

Dear Mr. Losch:

Attached please find the January Progress Report and Enbridge's Preliminary Engineering Activities Work Plan, which was prepared pursuant to Article 7, section 7.1 of the Tunnel Agreement between Enbridge Energy, Limited Partnership and the Mackinac Straits Corridor Authority dated December 19, 2018.

Sincerely,

Amber Pastoor

Project Manager

Line 5 Tunnel

**Enclosures (2):** Preliminary Engineering Activities Work Plan; January Progress Update

**CC**: Brad Shamla - VP US Operations; Lisa Wilson - Associate General Counsel;
Peter Holran - Director State Gov Relations

# Line 5 Tunnel Project: Preliminary Engineering Activities Work Plan

Deliverable #1 - Tunnel Agreement

01 February 2019

ENBRIDGE

# Line 5 Tunnel Project:
# Preliminary Engineering Activities Work Plan

Meeting the key milestones identified in the Tunnel Agreement signed between the Mackinac Straits Corridor Authority (Authority) and Enbridge on December 19, 2018 is a priority for Enbridge. The information below provides the details to satisfy the following deliverable:

> *7.1 Enbridge shall prepare and, within forty-five (45) days after the Effective Date of this Agreement, submit to the Authority for its review a "Preliminary Engineering Activities Work Plan" describing all engineering activities up to development of an RFP for design or design construct of the Tunnel. Enbridge will consider any comments provided by the Authority and immediately initiate preliminary engineering activities appropriate for the development, design and construction of the Tunnel including, but not limited to Geotechnical Investigations, as described in the "Preliminary Engineering Activities Work Plan."*

## Timeline for Preliminary Engineering Activities

The preliminary engineering activities described in the table below should be completed **by April 30, 2020**, subject to receiving environmental permits and other approvals for geotechnical investigations in time to complete the Geotechnical Data Report by December 31, 2019. The critical path activity for the scope of work described herein is implementation of geotechnical investigations as the outputs of these investigations are needed to advance nearly all other activities described in this Work Plan.

## Preliminary Engineering Activities

The table below describes the preliminary engineering activities. Enbridge will consider any comments provided by the Authority . Refined or new activities may be added as project delivery approach and design progresses. This Work Plan focuses on preliminary engineering activities and does not include activities related to procurement, contracting, and environmental and regulatory permitting.

### GEOTECHNICAL INVESTIGATIONS

| ACTIVITY | DESCRIPTION |
|---|---|
| **Undertake geotechnical investigations** | • Gathering and collecting available geotechnical data is necessary to support design and construction planning. A comprehensive ground investigation is required to define the subsurface environment to better inform (or define) the feasibility and design of the tunnel.<br>• The ground investigation will include a desk top study, lake bottom profile (bathymetry), geophysical surveys, and gathering geotechnical subsurface data along the proposed tunnel corridor and geotechnical subsurface data for the proposed tunnel entry and exit locations. |
| **Geotechnical Data Report (GDR)** | • The geotechnical data report will be prepared based on the results of the geotechnical investigations. |
| **Initiate a Draft Geotechnical Baseline Report (GBR)** | • The GBR is a document that describes the subsurface conditions expected to be encountered along the tunnel alignment.<br>• The GBR will not be finalized until Enbridge has selected the tunnel |

| ACTIVITY | DESCRIPTION |
|---|---|
| | construction contractor. A draft of the GBR will be included as part of Enbridge's request for proposal (RFP) process in order to allow the potential tunnel construction contractors to consider the content of the GBR in developing their proposals. |

## ACTIVITIES TO SUPPORT DEVELOPMENT, DESIGN AND CONSTRUCTION

| ACTIVITY | DESCRIPTION |
|---|---|
| **Undertake a project risk assessment** | • The project risk assessment will consist of risk workshops to complete the following tasks:<br>o Identifying potential risk events that could affect project outcomes.<br>o Assigning probability of occurrence to each risk event.<br>o Assigning severity of occurrence to each risk event, should it occur.<br>o Developing risk response strategies to control or mitigate adverse impacts.<br>o Identifying risk events that require further analysis.<br>o Assigning ownership of risks and defining how they will be managed.<br>o Tracking all open actions until they are closed. |
| **Assemble a project specifications team and develop project specifications** | • No later than March 1, 2019, Enbridge and the Authority will identify members of a team to develop project specifications.<br>• The team will develop the specifications to outline the technical design requirements of the tunnel. For example, the specifications will ensure the tunnel design and construction is in accordance with prevailing, state of the practice tunnel standards and specifications for a design life of no less than ninety-nine years.<br>• The specifications will also consider items such as the structural lining requirements, gasket leakage allowance levels, tunnel diameter, minimum technical and performance requirements for the tunnel boring machine (TBM), and the muck disposal plan. Consideration will also be given to the tunnel performance criteria that need to be accounted for in the design decision.<br>• These are key technical documents that will be developed in accordance with the procurement and contracting strategy and will be included in the RFP package. |
| **Inputs into regulatory and environmental permits and approvals** | • To secure regulatory and environmental permits and approvals elements of the tunnel design and construction will need to be developed to facilitate survey and study activities, and the preparation of filings. |
| **Further refine tunnel design** | • The horizontal and vertical alignment presented in the tunnel feasibility report will require refinement based on the findings of the geotechnical |

| ACTIVITY | DESCRIPTION |
| --- | --- |
| | investigation program.<br>• Refinements will be based on the rock and soil properties, the geotechnical profile, constructability considerations, and safety.<br>• Further development of the tunnel entry and exit requirements and site layout concepts will be performed in order to facilitate various construction aspects of the tunnel including contractor access points, staging areas, power supply, and general site layout.<br>• The tunnel cross section may be adjusted as the preliminary design progresses and geotechnical data becomes available.<br>• The tunnel lining system design is dependent on the ground conditions and maintenance requirements. The tunnel lining system design, comprised of concrete liner, gasket, and annular space grout, will be determined upon completion of the geotechnical investigation and input from the tunnel construction contractor. |

# Line 5 Tunnel Project: Monthly Status Report

**STATUS THROUGH: JANUARY 31, 2019**

| MILESTONES & DELIVERABLES | DUE DATE | STATUS |
|---|---|---|
| Preliminary Engineering Activities Work Plan | February 4, 2019 | Sent Feb 1 |
| Identify Project Specifications Team | March 1, 2019 | In progress |
| Procurement and Contracting Execution Draft Plan | April 30, 2019 | In progress |
| Procedures for Establishing Escrow Accounts | September 16, 2019 | Not started |
| Geotechnical Data Report | December 31, 2019[1] | Not started |
| Submit Request for Proposals (Draft) and Complete Preliminary Engineering Activities (as described in the Work Plan) | April 30, 2020[2] | Not started |
| File Government Approvals and Permits for Tunnel Construction | Within 180 days after Geotechnical Baseline Report | Not started |
| Commence Construction | No later than 180 days after receiving Government Approvals and Permits | Not started |
| Tunnel Completion Report | Upon substantial completion of the Tunnel | Not started |
| Tunnel Operations and Maintenance Plan | Upon substantial completion of the Tunnel | Not started |

## MAJOR ACCOMPLISHMENTS & ITEMS OF NOTE

- Held market sounding meetings with seven construction contractors to gain insight into their expectations for the project.
- Completed cultural surveys for geotechnical investigations and preparing to submit findings to the Army Corps of Engineers (Corps) for review.
- Investigating the ideal procurement and contracting strategy; in addition to meeting with the contractors, also had discussions with a tunnel owner and tunnel boring machine (TBM) manufacturer.
- Created a tunnel project organization chart and established the Enbridge execution team that will lead the project.
- Working to secure contractors for geotechnical investigations.

## PLANNED ACTIVITIES FOR FEBRUARY

- Continue to develop procurement and contracting strategy
- Submit results of cultural surveys to the Corps, who will then likely share the findings with Tribes in the region
- Develop list of individuals to be on the specifications team
- Continue to work on securing contractors for geotechnical investigations

[1] Permitting could impact this date.
[2] Or 120 days after completion of the Geotechnical Inestigations, whichever is later.

**From:** UPS Quantum View
**To:** Amber Pastoor
**Subject:** [External] UPS Ship Notification, Tracking Number 1Z4R8V31D943362125
**Date:** Thursday, January 31, 2019 2:25:56 PM

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| **Tracking Number:** | 1Z4R8V31D943362125 |
| **Ship To:** | GREGORY M. LOSCH - MDOT DIR. DES.<br>MACKINAC STRAITS CORRIDOR AUTHORITY<br>VAN WAGONER BUILDING<br>425 W. OTTAWA STREET<br>LANSING, MI 48909<br>US |
| **UPS Service:** | UPS WORLDWIDE SAVER |
| **Number of Packages:** | 1 |
| **Scheduled Delivery:** | 02/01/2019 |
| **Weight:** | 1.0 LBS |
| **Invoice Number:** | 10160 Amber Pastoor |

**From:** UPS Quantum View
**To:** Amber Pastoor
**Subject:** [External] UPS Ship Notification, Tracking Number 1Z4R8V31D945123148
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| **From:** | ENBRIDGE INC |
| **Tracking Number:** | **1Z4R8V31D945123148** |
| **Ship To:** | Lisa Wilson<br>Enbridge Inc.<br>26 East Superior Street<br>suite 309<br>DULUTH, MN 55802<br>US |
| **UPS Service:** | UPS WORLDWIDE SAVER |
| **Number of Packages:** | 1 |
| **Scheduled Delivery:** | 02/01/2019 |
| **Weight:** | 1.0 LBS |
| **Invoice Number:** | 10160 Amber Pastoor |

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| **From:** | ENBRIDGE INC |
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| **Ship To:** | PETER HOLRAN<br>Enbridge Inc.<br>20F STREET NW<br>SUITE 550<br>WASHINGTON, DC 20001<br>US |
| **UPS Service:** | UPS WORLDWIDE SAVER |
| **Number of Packages:** | 1 |
| **Scheduled Delivery:** | 02/01/2019 |
| **Weight:** | 1.0 LBS |
| **Invoice Number:** | 10160 Amber Pastoor |

**From:** UPS Quantum View
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**Subject:** [External] UPS Ship Notification, Tracking Number 1Z4R8V31D945181353
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# Shipment Details

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| **From:** | ENBRIDGE INC |
| **Tracking Number:** | 1Z4R8V31D945181353 |
| **Ship To:** | Brad Shamla<br>Enbridge Inc.<br>7701 France Ave. South<br>Suite 600<br>CENTENNIAL LAKES PARK I<br>MINNEAPOLIS, MN 55435<br>US |
| **UPS Service:** | UPS WORLDWIDE SAVER |
| **Number of Packages:** | 1 |
| **Scheduled Delivery:** | 02/01/2019 |
| **Weight:** | 1.0 LBS |
| **Invoice Number:** | 10160 Amber Pastoor |