Line 5 Tunnel Project
Environmental Impact Statement
Scoping Report

November 30, 2022

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Table of Acronyms

BA	Biological Assessment
bpd	barrels per day
CEQ	Council on Environmental Quality
CO_2	Carbon dioxide
CFR	Code of Federal Regulations
CWA	Clean Water Act
DA	Department of the Army
DoD	U.S. Department of Defense
EGLE	Environment, Great Lakes, and Energy
Enbridge	Enbridge Energy, Limited Partnership
EIS	Environmental Impact Statement
E.O.	Executive Order
ESA	Endangered Species Act
GHG	greenhouse gas
GLIFWC	Great Lakes Indian Fish and Wildlife Commission
HCA	High Consequence Area
Line 5	Enbridge's Line 5 pipeline
LOD	limits of disturbance
MDNR	Michigan Department of Natural Resources
MNFI	Michigan Natural Features Inventory
MOU	Memorandum of Understanding
MPSC	Michigan Public Service Commission
NEPA	National Environmental Policy Act
NGL	natural gas liquid
NOI	Notice of Intent
PHMSA	Pipeline and Hazardous Materials Safety Administration
ROV	remotely operated vehicle
Straits	Straits of Mackinac
TBM	tunnel boring machine
TCP	Traditional Cultural Property
TCR	Tribal cultural resources
T&E	Threatened and endangered
TRC	TRC Companies, Inc.
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

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1 INTRODUCTION

The National Environmental Policy Act (NEPA) is a procedural act that requires federal agencies to assess the environmental effects of proposed actions prior to making decisions. The United States (U.S.) Army Corps of Engineers (USACE), Detroit District, is reviewing an application pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (CWA) for a Department of the Army (DA) permit by Enbridge Energy, Limited Partnership (Enbridge) (File LRE-2010-00463-56-A19) to construct a tunnel (the Line 5 Tunnel Project) that would house a replacement segment of Enbridge's Line 5 pipeline (Line 5) crossing the Straits of Mackinac (Straits) in Lake Michigan.

As part of their review, USACE decided to prepare an Environmental Impact Statement (EIS) in compliance with NEPA and in accordance with USACE regulations at 33 *Code of Federal Regulations* (CFR) 320-332. The EIS NEPA process requires public engagement to assist the lead federal agency (e.g., USACE) during the EIS process, which includes public scoping. Scoping under NEPA is the initial means for public engagement to assist federal agencies in defining the range of issues for in-depth analysis in an EIS and for identifying alternatives to be analyzed in the EIS. Public involvement is an essential component of the NEPA process by allowing those who would be affected by project actions to participate in comprehensive environmental review and facilitate decision-making. Guidance for implementing NEPA public involvement is codified in 40 CFR, Subpart 1506.6, ensuring that federal agencies make a diligent effort to involve the public in the process.

USACE is also coordinating its review under Section 106 of the National Historic Preservation Act (NHPA) with the NEPA process, pursuant to 36 CFR 800.8(a) and used the EIS scoping process to facilitate consultation under Section 106. USACE invited all interested parties to provide comments on identification of and potential effects to historic properties during the EIS scoping period. In addition, USACE invited individuals and organizations with a demonstrated interest in the project to participate as a consulting party in the USACE's Section 106 review.

This Scoping Report describes the public scoping process USACE conducted under NEPA and Section 106. It also summarizes scoping comments received by the USACE, Detroit District during the EIS public scoping period as well as comments received during a previous USACE public notice and public hearing that occurred prior to the start of the NEPA process.

2 PROJECT INFORMATION

2.1 PROJECT LOCATION

Line 5 extends for 645 miles between Superior, Wisconsin and Sarnia, Ontario. In Michigan, Line 5 crosses the Straits, an approximately 4-mile-long span of water that connects Lake Michigan and Lake Huron. The proposed Line 5 Tunnel Project crosses below the lakebed of the Straits, connecting Point La Barbe in Michigan's Upper Peninsula to McGulpin Point in Michigan's Lower Peninsula in Mackinac and Emmet

Counties, respectively. The distance between these two land points is approximately 3.6 miles and represents the shortest distance between Michigan's Upper and Lower Peninsulas. The tunnel would extend as near as practicable to Enbridge's existing Line 5 North Straits Facility located on the north side of the Straits to an opening point as near as practicable to Enbridge's existing Line 5 Mackinaw Station located on the south side of the Straits. Figure 2-1 depicts the proposed location of the Line 5 Tunnel Project.

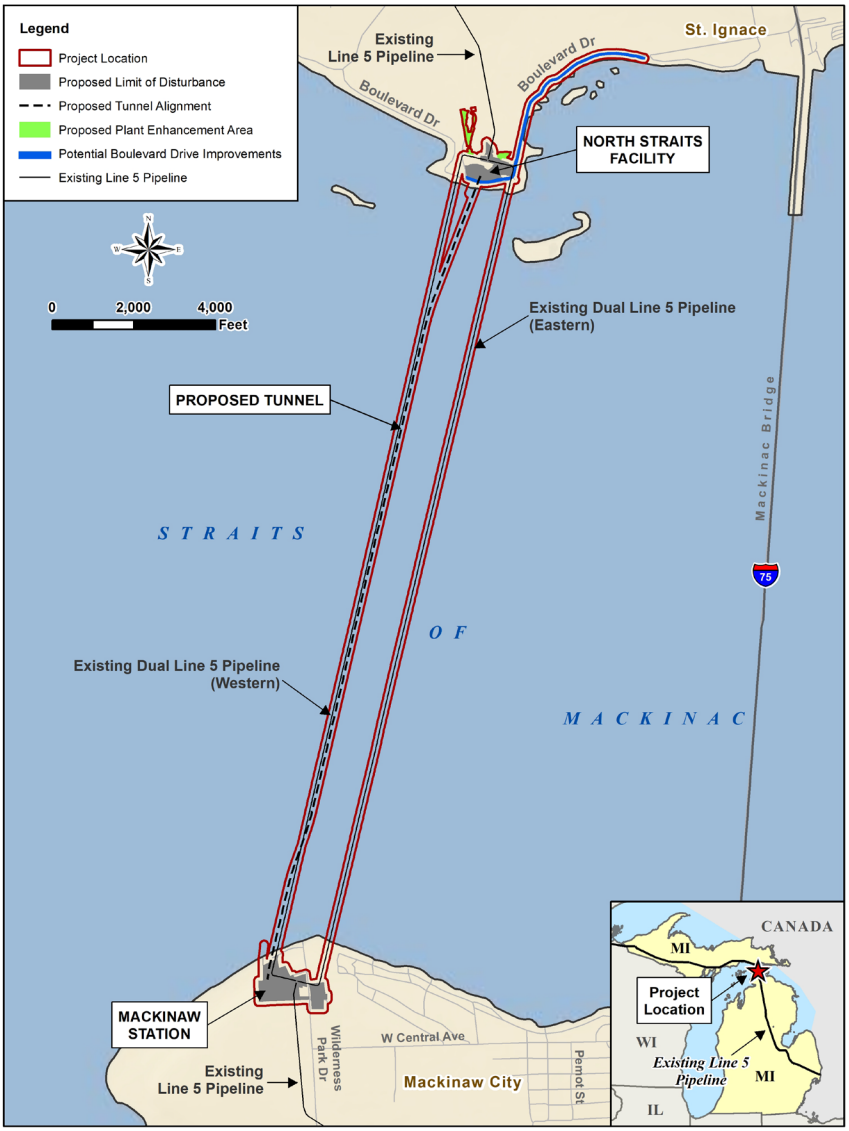

Figure 2-1. Line 5 Tunnel Project Location

2.2 PROJECT DESCRIPTION

Line 5 currently crosses the Straits via two, 20-inch-diameter pipes that rest on or are anchored to the lakebed of the Straits. Enbridge is proposing to construct a 21-foot-diameter tunnel approximately 3.6 miles long, buried in bedrock underneath the lakebed of the Straits of Mackinac. After the tunnel is completed, Enbridge would install a new 30-inch diameter pipeline within the tunnel, which would transport light crude oil and natural gas liquids (NGLs), to replace the existing Line 5 dual pipelines crossing the

Straits of Mackinac. Enbridge proposes to construct the tunnel using a tunnel boring machine (TBM). The TBM would install pre-cast concrete segmental lining as the tunnel is constructed and would fill the annular space between the walls of the tunnel and the concrete lining with low-permeability grout. Figure 2-2 provides a general overview of the proposed project phases.

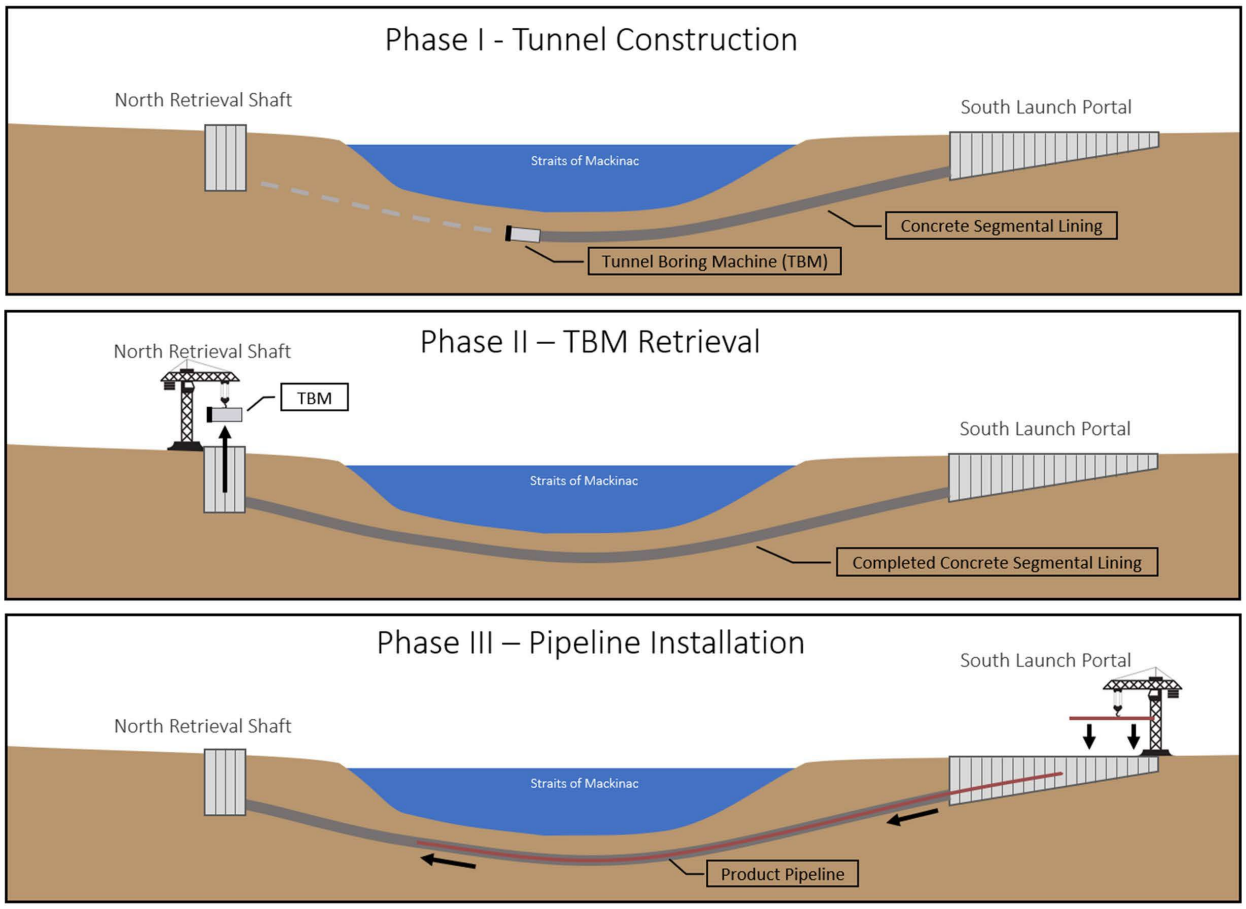

Figure 2-2. Line 5 Tunnel Project Construction Phase Overview

2.3 PREVIOUS PUBLIC INVOLVEMENT ACTIVITIES

Prior to the commencement of the NEPA process, USACE published an initial Public Notice on May 15, 2020, announcing the DA Permit application from Enbridge, which opened a public comment period from May 15, 2020 through June 4, 2020. On June 4, 2020, USACE published an additional notice signaling the extension of the comment period to July 14, 2020 to allow interested parties an extended opportunity to respond to USACE regarding the proposed project. The notice provided a point of contact at USACE along with addresses to submit the comments by electronic mail or in writing by mail.

A Notice of Public Hearing was published on November 7, 2020 announcing an online public hearing that would be held on December 7, 2020 at 1:00 p.m. The purpose of the meeting was to acquire information to be considered in evaluating the permit application and to give the public an opportunity to present their views, opinions, and

information on the proposed application action. The Notice of Public Hearing also announced an additional public comment period from November 7, 2020 through December 17, 2020.

USACE received and reviewed approximately 15,000 public comments during the initial Public Notice and the comment period ending on December 17, 2020. Following the Public Notice comment, USACE determined that an EIS should be completed. USACE is considering these comments in addition to the comments provided during the 60-day EIS scoping period.

2.4 PURPOSE AND NEED

The purpose of the project, as stated in the NOI, is to provide transportation of light crude oil, light synthetic crude oil, light sweet crude oil, and natural gas liquids between Enbridge's existing North Straits Facility and Mackinaw Station, and to approximately maintain the existing capacity of the Line 5 pipeline while minimizing environmental risks. Section 5.4.2 of this Scoping Report provides a summary of comments related to the purpose and need received during the public scoping period. USACE will review the scoping comments related to purpose and need to assist in refining the purpose and need presented within the EIS document.

2.5 PROPOSED ALTERNATIVES

An evaluation of alternatives to Enbridge's preferred alternative (construction of the Line 5 Tunnel Project at the location shown on Figure 2-1) initially being considered include a No Action Alternative, where USACE does not grant the requested permit and takes no further action; alternatives that would avoid, minimize, and compensate for impacts to the environment within the proposed project footprint; alternatives that would avoid, minimize, and compensate for impacts to the environment outside the footprint; alternatives using alternative practices; and other reasonable alternatives, that will be developed through the project scoping process, which also meet the identified purpose and need. As part of the public scoping period, USACE requested input on any additional potential alternatives. Section 5.4.4 of this Scoping Report provides a summary of comments related to alternatives received during the public scoping period. USACE will review the scoping comments related to potential alternatives to assist in the identification of alternatives carried forward for detailed analysis within the EIS document.

3 NOTIFICATION OF PROJECT SCOPING

3.1 NOTICE OF INTENT

A Notice of Intent (NOI) was published in the *Federal Register* on August 15, 2022. The NOI initiated the public scoping period where USACE invited members of the public (including federal, state, and local agencies; affected federally-recognized Tribal governments; non-governmental organizations; and other interested stakeholders) to provide comments regarding the range of issues for in-depth analysis in the EIS and for identifying alternatives to be analyzed in the EIS. The NOI also invited all interested parties to provide comments on identification of and potential effects to historic properties during the EIS scoping period as part of USACE's Section 106 review and invited

individuals and organizations with a demonstrated interest in the project to participate as a consulting party. The NOI indicated the end of the scoping period as October 14, 2022.

3.2 NEWSPAPER ADVERTISEMENTS

In addition to the publication of the NOI in the *Federal Register,* USACE published the NOI in two statewide newspapers and five local/regional newspapers:

- Detroit Free Press, August 17
- Detroit News, August 17
- Cheboygan Daily Tribune, August 17
- St. Ignace News, August 18
- Petoskey News-Review, August 17
- Traverse City Record-Eagle, August 17
- Soo Leader, August 16

Following the publication of the NOI, a public notice was published in the same newspapers indicating the date, time, format, and location or access information, as applicable for the public scoping meetings (see Section 4.2 for additional details).

3.3 INTERESTED PARTIES

USACE emailed a copy of the NOI to potentially interested parties. This included a list of over 15,300 stakeholders.

3.4 COOPERATING AGENCIES

USACE conducted scoping with the agencies and Tribes who agreed to participate as Cooperating Agencies for the EIS including:

- Bay Mills Indian Community
- Grand Traverse Band of Ottawa and Chippewa Indians
- Little River Band of Ottawa Indians
- Little Traverse Bay Bands of Odawa Indians
- Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians
- Michigan State Historic Preservation Office
- Nottawaseppi Huron Band of the Potawatomi
- Sault Ste. Marie Tribe of Chippewa Indians
- U.S. Environmental Protection Agency
- U.S. Coast Guard

During the 60-day comment period, USACE held two separate Cooperating Agency Meetings on August 18th and September 15th, 2022, to provide an opportunity for Cooperating Agencies to provide verbal input regarding the scope of the EIS. USACE also accepted written comments from Cooperating Agencies during the comment period. Section 5 of this Scoping Report reflects comments provided by Cooperating Agencies.

3.5 TRIBAL CONSULTATION

USACE is consulting with federally-recognized Tribes to fulfill its responsibilities under Section 106. During the 60-day comment period, USACE held two separate Tribal Meetings on September 6th and October 7th, 2022, to provide an opportunity for Tribes to provide verbal input regarding the scope of the EIS, along with any information related to Section 106 and Tribal resources. Section 5 of this Scoping Report reflects comments provided by Tribes.

3.6 OTHER METHODS OF COMMUNICATION

3.6.1 Social Media

USACE also conducted external communications through use of social media. This included:

- Defense Visual Information Distribution Service
- USACE Detroit District Facebook and Twitter accounts

Communications on these platforms included news releases and event calendars for the public scoping meetings and social tag reminders (#HappeningNow and #ICYMI [in case you missed it]).

3.6.2 Project Website

USACE is also hosting a designated website to provide EIS process updates relating to the project at *www.Line5TunnelEIS.com*. The website content includes posted public notices, the projected NEPA EIS schedule, current project plans and designs, as well as a subscription feature to receive email notifications. The project website also serves as a direct avenue for public scoping involvement, including announcements of the scoping period and public scoping meeting dates, and a location for the public to provide and view their comments, as well as the comments that others have posted.

4 PUBLIC SCOPING MEETINGS

This section summarizes the public scoping meetings, including a description of the purpose; times, dates, and locations of the meeting; and meeting formats.

4.1 PURPOSE

The scoping process provides an opportunity for citizens, stakeholders, agencies, and Tribes to provide input on the range of issues to be addressed in the EIS.

The purpose of public scoping meetings is to provide the public and stakeholders with information regarding the proposed project and the NEPA and Section 106 processes,

and solicit public comments regarding the scope of the EIS, as well as collect comments regarding Section 106 resources. This included alternatives to be analyzed and potential environmental impacts that may result from implementation of the proposed project. As part of the scoping process for their review of the DA permit, USACE held three public scoping meetings.

4.2 MEETING DETAILS AND LOCATIONS

USACE selected the meeting locations and formats to provide a range of appropriate geographic coverage and virtual or cellular access for those potentially affected by the proposed project. Following publication of the NOI (see Section 3.2), USACE published an additional announcement providing public scoping meeting details within the statewide and local/regional newspapers on the following dates:

- Detroit Free Press, August 24
- Detroit News, August 24
- Cheboygan Daily Tribune, August 24
- St. Ignace News, September 1
- Petoskey News-Review, August 25
- Traverse City Record-Eagle, August 25
- Soo Leader, August 24

The first virtual public scoping meeting was held on September 1, 2022 as a Zoom webinar from 5:00 p.m. to 8:00 p.m. EST.

The in-person public scoping meeting was held on September 8, 2022 at Little Bear East Arena located at 275 Marquette St, St Ignace, MI 49781. The public notice indicated that the public scoping meeting would run from 3:00 p.m. to 8:00 p.m.; however, USACE concluded the meeting at 9:09 p.m. to allow for members of the public who signed up to speak during the in-person meeting time to provide their comments.

The second virtual public scoping meeting was scheduled on October 6, 2022 as a Zoom webinar from 1:00 p.m. to 4:00 p.m. USACE, however, extended the meeting until 5:50 p.m. to allow for all members of the public interested in providing comment to speak.

4.3 IN-PERSON FORMAT

The in-person format allowed for members of the public and USACE representatives to interact in St. Ignace, Michigan. USACE distributed information about the proposed project and the NEPA and Section 106 processes through posters, handouts, and a formal presentation. Attendees had the opportunity to obtain a printed copy of the presentation slides. Figure 4-1 provides a layout of the public scoping venue.

USACE provided sign-in sheets at tables located at the building entrance and offered the opportunity to sign up for updates on the EIS process. Meeting staff tracked a total of 521 attendees with 280 attendees signed the meeting attendance list and 96 attendees

provided verbal public comments. The meeting was set up to accommodate four methods of submitting a public comment: electronic stations, verbal stations, written stations, and the public comment session.

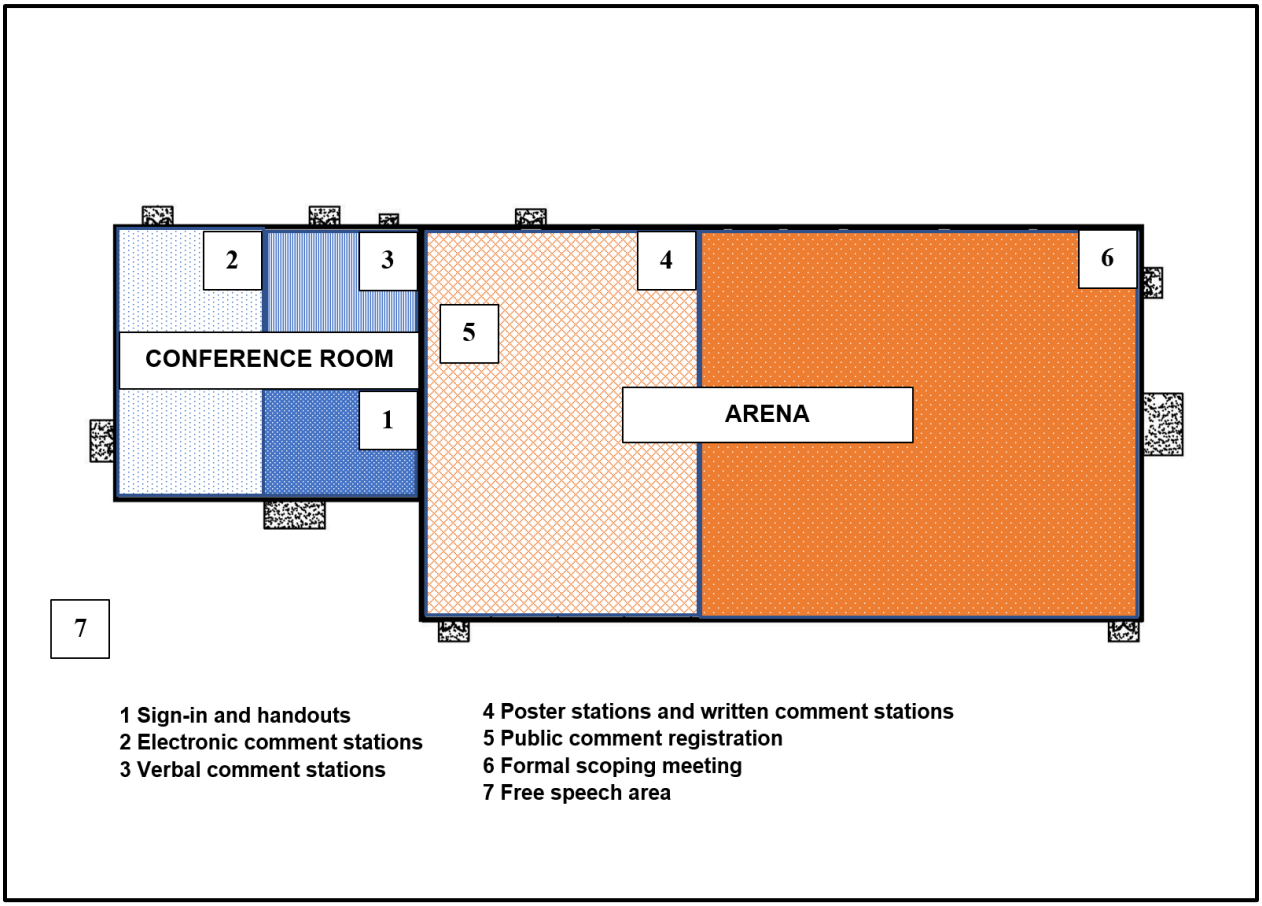

Figure 4-1. Public Scoping Meeting Setup

USACE located electronic stations and verbal stations in the conference room, separated by a divider wall. Participants submitted electronic comments directly online at www.Line5TunnelEIS.com through laptops provided at the electronic station. A stenographer transcribed one-on-one verbal comments located at the verbal station.

USACE located written comment stations and poster stations in the arena containing comment forms, pens, and a box to submit comments. The formal scoping meeting and public comment registration was also located in the arena. Figure 4-2 shows the setup within the venue arena including the written comment stations in the foreground and the formal scoping meeting occurring in the background.

The formal scoping meeting began at 3:15 p.m. in the arena and included a presentation by USACE, followed by an opportunity for verbal comments by the public. A court reporter transcribed the presentation and comments. Transcripts of the meetings and slides are available at: https://www.line5tunneleis.com/public-notices/.

USACE designated a free speech area outside of the Little Bear East Arena building to promote discourse among the public outside of the formal meeting.

Figure 4-2. Public Scoping Meeting in St. Ignace Michigan

4.4 VIRTUAL FORMAT

USACE provided a virtual format for two public scoping meetings allowing accessibility by the public across a wider geographic range to provide verbal input. The virtual meeting allowed USACE to involve more affected members of the public who are not in close proximity, have disabilities, or wanted to limit interactions due to the COVID-19 pandemic or other health reasons.

Users could attend the meetings hosted by USACE through the Zoom app or web browser, or by dialing in via a phone line. A total of 132 attendees joined the first virtual scoping meeting and 303 attendees joined the second virtual scoping meeting. Of the 435 total virtual scoping meeting attendees, 120 provided verbal comments during the meetings. Closed captioning was available for online attendees.

The virtual scoping meetings began with a presentation given by USACE about the proposed project and the NEPA and Section 106 processes, followed by an opportunity for verbal comments by the public. Comments submitted to the chat feature on Zoom were not accepted. The meeting was recorded and transcribed. Transcripts of the meetings and slides are available at: *https://www.line5tunneleis.com/public-notices/*.

5 PUBLIC SCOPING COMMENTS

5.1 COLLECTING COMMENTS

USACE invited comments for scoping of the Line 5 Tunnel EIS – specifically on alternatives that should be evaluated and key topics that should be covered in the EIS. USACE also invited all interested parties to provide comments on identification of and potential effects to historic properties during the EIS scoping period as part of USACE's Section 106 review and invited individuals and organizations with a demonstrated interest in the project to participate as a consulting party. USACE accepted comments via the website, postal mail, and during the public scoping meetings.

5.2 SUMMARY OF COMMENTS RECEIVED

Table 1 summarizes the number of comments received by method of submission. Entities submitting comments included elected officials; federal, state, and local government agencies; Tribal governments; non-governmental organizations or advocacy groups; and the general public. Of the 14,443 website comments, 1,283 were unique submittals from individual commenters. The other comments included several email and website campaigns from advocacy groups. For example, approximately 13,160 citizens submitted nearly identical website comments and a separate campaign of approximately 2,918 citizens submitted nearly identical email comments. The USACE reviewed all comments and considered them equally in development of this Scoping Report.

Table 1. Numbers of Comment Documents Received by Method of Submission

Type	Method of Submission				Total
	Website	Email	Hard Copy	Verbal	
General Scoping Period	14,438	2,928	137	–	**17,503**
Virtual Scoping Meeting #1	–	–	–	42	**42**
Virtual Scoping Meeting #2	–	–	–	78	**78**
In-person Scoping Meeting	5	–	49	111[a]	**165**
Subtotal	14,443	2,928	186	231	**17,788**

[a.] 96 public comments and 15 one-on-one comments.

5.3 TOPICS IDENTIFIED DURING SCOPING

Upon review of the comments received during the Scoping Period, USACE identified several topics of interest or "themes" to be considered in the EIS process and during USACE's Section 106 review. These include topics of broad interest or concern, as indicated by their recurrence in comments, or technical topics that warrant a more detailed consideration. Table 2 presents the major themes which USACE received substantive comments.

Table 2. Major Comment Themes

Comment Theme	Summary Location
Scope of the EIS	Section 5.4.1
Purpose and Need	Section 5.4.2
NEPA Process	Section 5.4.3
Analysis of Alternatives	Section 5.4.4
Applicant (Enbridge)	Section 5.4.5
Cultural Resources and Section 106	Section 5.4.6
Tribal Resources and Ceded Territory Rights	Section 5.4.7
Pipeline Safety and Spills	Section 5.4.8
Pipeline Safety and Explosion	Section 5.4.9
Public Health and Safety	Section 5.4.10
Project Design	Section 5.4.11
Project Construction	Section 5.4.12
Project Operations	Section 5.4.13
Greenhouse Gas Emissions and Climate Change	Section 5.4.14
Energy Needs and Marketing Conditions	Section 5.4.15
Cumulative Impacts	Section 5.4.16
Air Quality	Section 5.4.17
Biological Resources – Vegetation, Wildlife, Aquatic Resources, Threatened & Endangered Species	Section 5.4.18
Environmental Justice	Section 5.4.19
Geological Resources	Section 5.4.20
Land Use	Section 5.4.21
Mitigation	Section 5.4.22
Noise and Vibration	Section 5.4.23
Regulations	Section 5.4.24
Socioeconomics	Section 5.4.25
Soils	Section 5.4.26
Visual/Aesthetics	Section 5.4.27
Wetlands	Section 5.4.28
Waste Management	Section 5.4.29
Water Resources	Section 5.4.30

5.4 PUBLIC SCOPING COMMENT SUMMARY

This section categorizes the comments received according to subject matter and summarizes the context of comments. Please note that, even though the content below is in summary form, the descriptions still convey the perspective of commenters and often uses or paraphrases comments of representative commenters.

5.4.1 Scope of the EIS

Comments suggested the following:

- The USACE needs to prepare a maximum scope EIS to include the entire Line 5 pipeline and not just the crossing at the Straits of Mackinac. As the Line 5 pipeline transports crude oil and NGLs from Superior, Wisconsin to Sarnia, Ontario, this project is regional in scope and the impacts of this project should be described at local and regional scales. USACE should not limit the scope of the NEPA analysis to the footprint of the proposed project. If sections fall outside of USACE jurisdiction, then the project should halt for lack of regulatory oversight until a solution is created.
- It is imperative to look at the entire Line 5 pipeline from source to final destination, and from current status to proposed termination of the project. This "cradle to grave" analysis is standard in sustainability studies and meets the purpose of an EIS as defined on the American Bar Association's website as *"to assess the potential impact of actions 'significantly affecting the quality of the human environment.' This requirement under NEPA … requires advanced identification and disclosure of harm."*
- Only reviewing a portion of the Line 5 is segmentation which prevents thorough review of all impacts. A piecemeal approach offends the public trust to pretend that sending oil products under the Straits of Mackinac is independent of risk elsewhere in Michigan.
- Regarding the entire Line 5 pipeline, provide an in-depth analysis of the history of Line 5 in Wisconsin and Michigan.
- The USACE often takes the position that it has only a "small handle" on crude oil pipelines, that it only has jurisdiction over the construction of waterbody and wetland crossings, and that it can discharge its CWA obligations with national or regional general permits or sometimes individual permits that impose standard construction conditions at those crossings. This project is an exception because USACE has already determined that an EIS will be required, and that the project will have a significant environmental impact. The foreseeable consequences of a permit denial will not be tantamount to a minor re-route to protect a wetland. The USACE also has to confront the issues raised by the Bad River trespass under federal common law, and a host of treaty and other Tribal issues each involving the federal government's fiduciary responsibility to federally recognized Tribes. Line 5's future is in the USACE's hands, and the EIS must reflect the significant role the federal government is playing.

- A full EIS of the proposed tunnel project that includes the entire pipeline from source to destination; the extraction, processing, transportation, refinement, delivery, and end use of the product; and the extended use of Line 5 over the next decade, if not longer, is a more realistic and useful appraisal of the ramifications of this pipeline expansion.
- The scope of review determined by USACE must be broad enough to include a review of every major factor, proposed construction method, and impact of this project. The EIS must review construction, design, maintenance, and safety precaution proposals through a benchmark review of other pipeline/tunnels currently in use worldwide. It is especially important that USACE review those aspects of the project that have not been thoroughly considered by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) or Michigan Public Service Commission (MPSC). Both of these agencies have undertaken rather limited reviews of this proposal. Therefore, key elements of the proposed design, environmental and climate impacts, and planned construction protocols have not been reviewed.
- The EIS should account for the extended operation of Line 5 over the next decades if not centuries, especially given that Enbridge has continued to operate the Line 5 dual pipeline in the straits for 69 years, which is 19 years beyond their structurally sound lifetime (50 years).
- The EIS should include an independent study of the safety of the dual pipelines scheduled to keep operating during permitting process and tunnel construction. The pipelines are supposed to be supported by the lakebed, with no unsupported gaps more than 75 feet. The pipeline is currently 3 to 4 feet off of the lakebed, subject to currents and anchor strikes.
- The scope of the EIS must weigh all options to meet energy needs for next 40 years.
- The scope of the EIS should be shaped by the environmental concerns as put forth by the public including cultural resources, Indigenous rights, water resources, accident scenarios, and climate change.
- The EIS scope should address possible impacts to the Straits region as one of the most prominent cultural landscapes in the state of Michigan. The Straits contains an extremely high concentration of terrestrial and submerged archaeological, and above-ground cultural sites, as well as being considered an apparent Traditional Cultural Property (TCP) among Indigenous communities in the Great Lakes region.
- The EIS should evaluate potential impacts not only in the construction footprint (effects of pipeline construction) but also in lands and waters potentially impacted by spills and/or explosions along the full length of Line 5.
- The proposed tunnel structure is supposed to be deeded to the state, Mackinac Authority, Bridge Authority, upon completion. What liabilities does the authority in the state inherit? Will it be responsible before its eventual removal? Is there a funding that needs to be set aside by Enbridge and trust? Will the multipurpose

tunnel create new liability should electric utility lines be installed, which could lead to a spark leading to an explosion with the oil leaking into Lakes Michigan and Huron?

- EIS must clearly delineate the geographic scope of the supply and demand of the Project. Detail exactly how much of each substance, raw or refined into other petroleum products (e.g., propane) that Line 5 supplies to Michigan versus elsewhere. Enbridge must provide this information to USACE so that it can properly evaluate the short and long term "economic advantages and disadvantages of this proposal" to the people of Michigan and the greater Midwest and Great Lakes regions.

5.4.2 Purpose and Need

5.4.2.1 Project Purpose and Need

Comments suggested the following:

- USACE must provide a statement that explains the overall need for the project. Address (1) underlying needs for energy resources in the U.S.; (2) the need for transportation of petroleum and natural gas products in this region which includes identifying the need of Line 5 due to conflicting reports of the actual need of the line to transport natural gas and crude oil to the Upper Peninsula of Michigan; and (3) the need for safety improvements if a pipeline is to continue to be located under the Straits including acknowledgement that the pipeline is an aging system and Enbridge is preforming several section replacements on including under the St. Clair River, and a reroute in Wisconsin.
- After clarifying the need for the proposed project, USACE should consider a purpose statement that would fulfill the outstanding need. If a need for transporting petroleum is established, then consider more generally referring to connecting the Upper and Lower Peninsulas. Assess whether geotechnical and other considerations could allow for other rights-of-way and project termini with less environmental impact or risks than Enbridge's proposed connection of the North Straits Facility to the Mackinaw Station. Consider also that the purpose statement does not need to define the study area for analysis.
- Remove the statement on maintaining existing petroleum capacity from the purpose and need statement and instead consider current and future capacity when developing a reasonable range of alternatives.
- Consider the Council on Environmental Quality's (CEQ) Final Rule for Phase 1 of Revisions to the NEPA Regulations. The April 20, 2022, *Federal Register* states, "*The revision clarifies that agencies have discretion to consider a variety of factors when assessing an application for an authorization, removing the requirement that an agency base the purpose and need on the goals of an applicant and the agency's statutory authority.*" Under the current needs statement, the purpose is to prevent a spill in the Straits. If this is the true purpose, then the entire pipeline that crosses tributaries to the Straits should be included in the EIS, not just a 3.6-mile portion that is most publicized. The final purpose and need statement should

reflect any actual underlying need for energy transmission and/or improved safety conditions.

- Substantiate the need for any new construction on Line 5 considering that Enbridge has said the remaining life of all assets on this pipeline system, including Line 5, extends only through 2040.
- Concerns with the stated purpose of transporting oil but other products could be transported, e.g., Tar Sands.
- This purpose and needs statement is not consistent with the Section 404(b)(1) guidelines of the CWA. The project purpose cannot be defined in such a restrictive manner to unduly restrict or preclude other alternatives, including off-site alternatives.
- The purpose and need statement also improperly concludes "maintaining existing petroleum capacity," when even Enbridge acknowledges that the need for petroleum transportation will be considerably reduced over the next 20 years, quite possibly to near zero if climate goals are to be reached.
- No studies or reports demonstrate that the products transported by the Line 5 pipeline (especially at its current capacity) are needed in the region. Instead, expert testimony in other Line 5 proceedings, the historical record, and independent reports demonstrate that there is no such need.
- Michigan's need for fuel can be met without Line 5. Michigan and the U.S. do not really need oil. The permit application implicitly assuming that fossil fuel products carried to the pipeline's endpoint must happen.
- The purpose and need statement must consider the long-term costs of continued investment in infrastructure that promotes our dependence on fossil fuels, and oil sands products in particular. A tunnel will not be needed if pipeline breaks before the tunnel is completed (likely another 10 years).
- Recommend to modify the purpose and need statement to avoid unlawfully precluding the consideration of reasonable alternatives. As it is, the purpose and need statement excludes any alternative that does not connect Enbridge's existing North Straits Facility and Mackinaw City pump station. As a result, the purpose and need statement is geographically narrow by using only the local endpoints, North Straits Facility and Mackinaw City pump station, and should be replaced with Line 5's regional endpoints, Sarnia, Ontario and Superior, Wisconsin. Line 5 cannot continue to operate without the Line 5 Tunnel Project, and therefore the purpose and need for the project should largely mirror the purpose and need of Line 5 generally. The secondary purpose of Line 5 is to meet the feedstock needs of the petroleum refineries currently taking crude oil from Line 5, in a way that avoids or minimizes environmental and other risks.
- The objectives of the action are so narrow that only one alternative from among the environmentally benign ones in USACE power would accomplish the goals of USACE action, and the EIS would be a foreordained formally (National Parks &

Conservation Association v. Bureau of Land Management, 606 F.3d 1058, 1070 (9th Cir. 2010)).

- In 2020, the previous Administration proposed and adopted new language in the CEQ regulations requiring that, when an agency like USACE is considering permit applications from private parties like Enbridge, the agency must base the purpose and need on the goals of the applicant, not the needs and goals of the public or the agency's own goals. The current Administration repealed 2020 NEPA amendment for purpose and need to be based off goals of the Applicant and deleted the reference to the goals of the Applicant. In doing so, the CEQ cautioned against governmental agencies adopting narrow purpose and needs. As it is, the purpose and need statement is intended to disclose alternatives other than what Enbridge wants to do.
- Is deficient for lack of recognition of the public interest in protecting the Great Lakes in the face of global water shortages, chronic drought in the U.S., and other costly impacts from climate change. The purpose and need statement should incorporate the public interest of maximizing protection of the Great Lakes, especially in the fact of global water shortages, chronic drought in the U.S., and other costly impacts of climate change. The purpose and need should give primacy to Great Lakes protection over Enbridge's private interest (33 CFR 325, App. B 9(b)(4), Simmons v. USACE, 120 F.3d 664, 669 (7th Cir. 1997)).
- The EIS should include an evaluation of the need for this project which includes the needs and welfare of the people and the relative need for the proposed project before issuing any permit under Section 404 of the CWA. Additionally, the White House Executive Order on Tackling the Climate Crisis at Home and Abroad of January 2021 aims to reduce carbon emissions as a matter of national security. The purpose and need statement for this project must recognize the need to reduce carbon emissions and analyze the proposed project in that context. Furthermore, the EIS must acknowledge and consider the Tribes need to sustain natural resources for future generations.
- The private sector has already made significant commitments to reducing greenhouse gas (GHG) emissions including the car industry completely phasing out petroleum powered vehicles. These changes in the auto industry will have substantial impacts on oil demand within North America and around the world. Federal policies to significantly reduce GHG emissions in unison with private sector policies and supply strategy will provide the meaningful reduction of oil consumption and consequently the reduced need for oil.
- Major financial institutions have indicated they will no longer fund oil sand related projects, including the World Bank, and the Hongkong and Shanghai Banking Corporation Limited (the largest bank in Europe). More broadly, to date, 1,508 institutional investors, representing $40.4 trillion of assets under management have so far committed to divestment from fossil fuel-related companies. The world's largest insurers and reinsurers including Lloyds, Hartford, Swiss Re Group, and Munich Re Group have announced that they will no longer provide insurance coverage for pipelines that convey oil from sands.

- The EIS should include a comprehensive third-party Needs Analysis to assess the purpose and need of the Proposed Action, including potential long-term economic impacts during the operational life of the tunnel. The NOI lacked any data regarding the short- and long-term needs for transportation of petroleum products via pipelines in general and the Line 5 pipeline more specifically. With the nation moving to a cleaner energy future, the question is raised, is the pipeline worth the risk to the public trust resource for the limited timeline we will be fossil fuel dependent? The EIS needs to address the projected fossil fuel-based energy needs in the U.S., as well as the need for transportation of petroleum and natural gas products through the state and region.
- The question before the USACE presently is whether the tunnel project should be approved based on its merits and effect to the environment.
- USACE needs to reissue the purpose and need statement to the public that sets the foundation and alternatives before the start of the Draft EIS.
- Determine if there is a need for Line 5 to provide propane for the project purpose and need statement. Include reference to the Michigan Propane Security Plan.
- The tunnel is needed to protect pipeline from further damage. The tunnel will help ensure an extra layer of safety and environmental protection in our waterways, without compromising the delivery of the energy on which Michigan currently depends on, and will continue to depend on, well into the future.
- Oil is needed for products made from petroleum. The “need” of the project is to assure the energy requirements of those downstream are met with minimum adverse effect on the environment and Tribal resources. Both the economy and environment are critical and protecting both can be done simultaneously.
- The tunnel will provide next generation infrastructure for serving the utility needs of residents, businesses, and communities in both the upper and lower peninsula of Michigan and throughout the Great Lakes region. Ferrellgas purchases 15.9 million gallons of propane off of Line 5 every year. Ferrellgas has 19,875 customers that are serviced directly off of Enbridge Line 5. Farms (beef, dairy, crops) count on fuel for equipment, to dry grains for storage and other products (fertilizer) that come from Line 5.
- Governor Whitmer signed an executive order removing impediments to gas delivery to ensure Michiganders receive the affordable gas they needed following a refinery incident in Indiana. The tunnel is being built to satisfy the agreement with former governor.
- By moving forward with developing and permitting the Great Lakes Tunnel, Enbridge is complying with provisions of agreements made with the state and per legislative action, PA359 of 2018.
- Pipelines have a far lower variable transportation cost. The cost of running pump stations is far lower than the cost of hundreds of trucks, or the cost of delivering hundreds of rail cars carrying the same volume of fuels.

- The purpose and need statement should be amended to ensure that the energy needs of the region are met over the next 40 years, not maintain the status quo for downstream refineries.
- The purpose and need statement should be revised to include both minimizing environmental risks and avoiding any risk of a pipeline-related oil spill in the Great Lakes.
- Remove the statement "to maintain the existing capacity" of Line 5 from the purpose and need statement as it too restrictive to unduly restrict or preclude other alternatives.
- If the U.S. keeps cutting oil to and from Canada, they will most likely obtain oil from China.
- Requiring the purpose of the project to be defined broadly ensures the EIS does not become "a foreordained formality" (City of New York v. Department of Transportation, 715 F.2d 732, 743 (2nd Cir. 1983)).

5.4.3 NEPA Process

Comments suggested the following:

- The NEPA process takes a long time.
- There is no need statement for the EIS posted on the website.
- The EIS process is meant to inform on all potential impacts regardless of the overall public interest.
- The USACE's duty is magnified by the intense public interest in Enbridge's Line 5 Tunnel Project.
- According to the August 23, 1993 U.S. Environmental Protection Agency (USEPA) / USACE Memorandum to the Field, the amount and detail of information in an alternatives analysis and the level of scrutiny required by the Guidelines is commensurate with the severity of the environmental impact (as determined by the functions of the aquatic resource and the nature of the proposed activity) and the scope/cost of the project. Given the severity of potential impacts and cost of the Great Lakes, the alternatives analysis needs to be extremely detailed. At a minimum, alternatives must consider the No Action Alternative, off-site locations, including those that might involve less adverse impact to waters of the U.S., or less impact to special aquatic sites or less impact to higher quality aquatic resources, and onsite alternatives, particularly those that would involve less adverse impact to waters of the U.S.
- There are structural deficiencies in the NOI that will prevent the USACE from taking the requisite "hard look" (League of Wilderness Defenders-Blue Mountains Biodiversity Project v. U.S. Forest Service, 689 F.3d 1060, 1075 (9th Cir. 2012)).The NOI does not comply with 33 CFR 325 App B 7(b)(3) because it references regional and international benefits of Line 5 but proposes a purpose and need that is hyper localized. To properly scale the scope of analysis, the

purpose and need statement must be revised to replace the italicized, local endpoints with Line 5's regional endpoints—Enbridge's Superior, Wisconsin, and Sarnia, Ontario, terminals.

- NEPA's "hard look" obligation requires agencies to consider potential environmental impacts, including "all foreseeable direct and indirect impacts," and "should involve a discussion of adverse impacts that does not improperly minimize negative side effects" (National Atlas Environmental Center v. Kempthorne, 457 F.3d 969, 975 (CA 9, 2006)). If the environmental risks of the tunnel are compared to a pretend reality in which the pipelines are non-operational then the beneficial environmental effects of the tunnel will be minimized.
- Given the terms of the agreements signed with the Mackinac Straits Corridor Authority, Enbridge can be relieved of its obligation to replace the dual pipelines currently on the lakebed if it cannot legally construct the tunnel to house those pipelines. This can be best avoided both by using the correct baseline (the current reality of operation of the dual pipelines) and recognizing that a likely impact of denial of the permit is the continuation of the status quo.
- The USACE has the duty under NEPA to exercise a degree of skepticism in dealing with "self-serving" statements from a prime beneficiary of the project (Simmons v. USACE, 120 F.3d 664, 669 (7th Cir. 1997)).
- The "404(b)(1) Guidelines" adopted by USEPA and USACE prohibit USACE from permitting anything but the least environmentally damaging practicable alternative. To comply with that requirement, and to comply with this Administration's climate goals and directives, USACE needs to conduct a rigorous examination of a broad range of alternatives.
- Why is the U.S. Coast Guard Sault Ste. Marie not involved? They are the only ones that directly respond to issues in Straits.
- Will Commander Boyle stay involved and participate in the whole planning process for the next two years of the EIS?
- Regarding subjects of study, 43 CFR 46.235 requires that Tribal and citizen concerns and concepts of possible alternative actions form an essential aspect of the scoping process.
- An EIS without science expert participation will certainly not be received willingly by the climate and environmental movements. Suggests inviting federal climate science expert agencies to participate in the study (e.g., National Science Foundation, and National Aeronautics and Space Administration).
- The original Line 5 construction occurred in 1953 which predates NEPA, so construction and operation of Line 5 through the Straits has never been subjected to full environmental review under NEPA.
- Under 40 CFR 1502.15 NEPA regulations require a federal agency to set forth baseline conditions when analyzing the affected environment. The reason a baseline must be established is so that the decision's effects "can be meaningfully gauged" (West Watersheds Project v. Bernhardt, 543 F. Supp. 3d 958, 987). The

existence of operational dual pipelines under the Straits is the appropriate baseline because, not only does it comport with actual reality, but it also allows for a meaningful determination of the effects construction of the proposed tunnel will have on the environment, as required by NEPA.

- Enbridge is seeking siting authorization from MPSC. In that proceeding, the MPSC staff advocated for current operation of the pipelines as the baseline in its evaluation, so NEPA should also determine this as the baseline. Some intervenors in that matter argued that because the Governor had issued a notice of revocation of the 1953 easement, analysis under Michigan Environmental Protection Act required a different baseline and consideration of the entirety of Line 5, not simply those segments that were proposed to be relocated into a tunnel. In response, the Commission found the correct scope was not the entirety of Line 5, and when examining the baseline noted that "the legal effect of the Notice remains unclear, the pipeline has not been shut down or decommissioned, and Enbridge retains the legal right to operate Line 5."
- Preparation of the EIS should not be contracted by Enbridge, particularly if they choose the firm TRC Companies, Inc. (TRC), which holds a conflict of interest and therefore should be preemptively disqualified by USACE. TRC is a part of and heavily invests in fossil fuel industries (2017 unsolicited mini-tender offer by TRC for up to 2.5 million common shares of Enbridge). Also has a history of subjective statements and relying on Enbridge's word.
- The USACE must evaluate the reasonably foreseeable adverse effects of each alternative. See 40 CFR 1502.21(a). If the USACE lacks available information relevant to reasonably foreseeable significant adverse impacts essential to a reasoned choice among alternatives, and the overall costs of obtaining it are not unreasonable, the agency shall include the information in the environmental impact statement (Id. § 1502.21(b)). Line 5 currently generates about $1.5 million in revenue each day; therefore, cost should be no obstacle in using available information to close any material data gaps necessary to fully explore each alternative.
- The EIS analysis should rely on independent research unaffiliated with the project proponent.
- Identify as many partners to the area as possible. State Waterways Commission says they were not contacted to identify difficulties and economic effect of failed project.
- The permit process should be expedited.
- If USACE came to believe that the Enbridge tunnel proposal was really a carefully orchestrated scam, would the EIS be considered worth the time and taxpayer money?
- Core to the mission of the USACE is to "reduce risks from disasters." In its Climate Preparedness and Resilience program, the USACE recognizes that it must "reduce potential vulnerabilities to the Nation's water infrastructure resulting from climate change and variability." USACE cannot predict natural processes such as the

earth's movements, but it can predict risk. The burning of fossil fuel is the leading cause of climate change. The construction of new fossil fuel infrastructure must be considered antithetical not only to the mission of the USACE but to the viability of this proposed project. USACE is being paid by American citizens' tax dollars, and needs to prioritize American citizens over foreign corporations. Americans are trusting USACE with authority over land and water. USACE in Minnesota continues to ignore pleas despite data accumulation. Lawmakers and internationally appointed officials, also have a duty to respect laws that exist, or make time for some large mindset discussions on how to make things better than they are.

- Relating to NEPA and society in general, decisions are made because of power, profit, influence, personal gain, dealmaking, or a fear of losing one 's job or status if a position contrary to others is taken. To search for solutions, we must sometimes split the difference and meet in the middle of our conflicting values. We can focus on our mutual interests, and look past our positions. We must work together to find common ground, and oftentimes that entails finding ways to satisfy both at the same time.

5.4.3.1 Public Involvement

Comments suggested the following:

- The USACE should extend the 60-day comment period to allow more time to comment.
- The USACE should host additional in-person and virtual public meetings. Commenters at the in-person public meeting expressed desire for in-person public meetings at larger metropolitan areas such as Detroit so concerned citizens do not have to travel so far.
- The USACE should host in-person meetings at the Bay Mills Indian Community.
- Residents of Michigan should be able to vote on the tunnel.
- Issues with advisory saying "lack of response to this public notice will be interpreted as meaning that there is no objection to the proposed project."
- The project website appears to favor the project because the words "permit" and “proposed" are missing.
- Remove the "free speech zone" at in-person meetings so that individuals do not need to stay in designated areas.
- Provide better communication at the public meetings to share the process, format, and "rules" of the meeting.
- Citizen input regarding which federal agencies are involved in the study is appropriate (40 CFR 1501.7).
- Tribal and citizen concerns and concepts of possible alternative actions form an essential aspect of the scoping process (43 CFR 46.235). Citizen input regarding which Federal agencies are involved in the study is therefore appropriate (40 CFR 1501.7).

- The USACE needs to solicit a broader spectrum of public comments in the interest of environmental justice to inform your environmental review and evaluation of alternatives.
- Extend public comment period for 180 days and offer more meeting places for other Michigan residents to have an opportunity to speak. The in-person meeting time on a Thursday at 3 pm was difficult for people to make. The meeting timing was poorly planned and people who came all the way to in-person public meeting did not get to have a chance to speak publicly, and had to resort to making their comments in private.
- The USACE should allow the public to review and comment on EIS foundation items earlier than the Draft EIS. The burden to comment on the NOI without specific science is unfair and unscientific.

5.4.4 Analysis of Alternatives

This section details comments related to project alternatives received during the public scoping period.

5.4.4.1 Project Alternatives

Comments suggested the following:

- USACE needs to analyze a broad range of alternatives.
- The existing Line 5 pipelines should be replaced without tunneling. For example, the existing pipeline should be abandoned with a new pipeline built next to it and a tunnel should encapsulate both.
- The Line 5 pipeline should cross at a less sensitive area, such as a shallower area of the Detroit River.
- Explore an alternative of not crossing the Great Lakes. The existing pipeline should be decommissioned and only aboveground, buried land pipeline routes should be considered. Such as re-routing through Wisconsin over land. An alternative to connect Enbridge's Superior terminal and Sarnia terminal without crossing the Great Lakes.
- A hazardous liquids pipeline is not water dependent. Therefore, at a minimum, one on-site alternative should be included that does not involve placement in Lake Michigan. In addition, off-site alternatives should include a thorough evaluation of multimodal transportation of commodities, as well as consideration of utilization of existing infrastructure (40 CFR 230.10(a)(3)).
- Consider options for a new pipeline to traverse entirely through Canada and not go into Michigan. A new pipeline could go around Lake Huron and result in potential impacts to Canada not Michigan. Construct a new pipeline on all-Canadian land pipeline to the Ottawa refinery. Move the refineries to Canada before the pipeline enters the U.S. Consider running a pipeline under Canada's Hudson Bay.

- The alternatives should include use of existing underutilized pipelines that do not cross the Straits, the option of bringing crude oil from the Gulf of Mexico through existing pipelines or tankers, and the potential for expanded transport of oil by rail or truck, or various combinations of the above.
- Analyze the use of existing pipeline infrastructure to transport oil should Line 5 be decommissioned, including alternative routes within the existing Lakehead System.
- Conversion of Line 5 to a natural gas only pipeline and using other existing infrastructure to transport crude oil.
- A new pipeline should be constructed on a suspension bridge over the Straits.
- A new pipeline should be attached to the Mackinac Bridge.
- Expand the proposed tunnel to be a multi-functional tunnel. For example, accommodate other linear transmission systems.
- The tunnel design should involve a two-layer tunnel to avoid seepage.
- Consider a tunnel alternative that fully eliminates the risk of oil intrusion into the Straits of Mackinac in the event of an explosion or similar event.
- The USACE must properly use an alternatives analysis that selects the least environmentally damaging practicable alternative using established CEQ and USACE criteria. This alternative needs to be established in the Draft EIS statement for public comment and not wait for the Final EIS.
- At a minimum, alternatives must consider the No Action Alternative or Alternatives, off-site locations, and on-site alternatives, particularly those that involve less adverse impacts to the waters of the U.S. Off-site alternatives should include a thorough evaluation of multi-middle transportation of commodities, as well as consideration of utilization of existing infrastructure.
- If project alternatives involve replacing the pipeline on the lakebed, consider the resulting potential significant environmental impacts to the Great Lakes, such as dredging associated with the installation of a pipeline on the lakebed.
- If non-pipeline alternatives are evaluated, consider how such an alternative would not be an option to connect Enbridge's existing Line 5 facilities on either side of the Straits. Also, non-pipeline alternatives use fuel to move fuel which would have higher greenhouse gas emissions and would likely result in a higher frequency of incidents on a per mile basis.
- A tunnel is the best solution to protect the environment and the Straits. There is no viable alternative on the table that will reduce environmental impact more than placing Line 5 in a utility tunnel below the Straits.
- The consideration of any alternative should assume a substantial decline in demand for refined petroleum products over the next 20 to 40 years as Canada and the U.S. adopt and respond to policies that discourage the continued use and extraction of fossil fuels. Hence, the USACE should conduct its alternatives

analysis with a number of different scenarios reflecting public policy and demand for petroleum and propane products.

- Consider other pipeline alternatives to getting propane to the Upper Peninsula aside from Line 5.
- Enbridge should invest in hemp fuel which would be more sustainable and use existing Canadian pipeline infrastructure.
- Comments from the Michigan Pipeline Safety Advisory Board said that this is the best alternative out of the options.
- Instead of pipeline transport of oil, utilize truck and train transport. This would use and expand existing infrastructure which can be cross-utilized for other freight transport. Risks include environmental contamination include added carbon dioxide (CO_2) outputs and local spill risks (more likely to be identified early with limited downstream impact). These risks seem more acceptable given the expected long-term decrease in demand for fossil fuels and expected continuing need for overland transportation.
- Without Line 5, other methods would be used to transport the product, such as truck or rail. Rail would be able to provide less than 10 percent of that volume. There would be 503,104 more trucking miles each month on Michigan's highways to deliver Michigan's crude oil to refineries in Toledo and Detroit. An estimated 2,100 trucks would need to travel every day from Superior and travel across Michigan to support same amount of product as Line 5. Current rail and road infrastructure does not support the No Action Alternative. Also, there is a shortage of truck drivers. Putting that many trucks on the road would also cause concerns for air emissions and would contribute negatively to the condition of the already over-taxed highway and road network in Michigan.

5.4.4.2 No Action Alternatives

Comments suggested the following:

- No build and decommission, dismantle, and remove the Line 5 pipeline.
- No build and shut down the entire Line 5 pipeline.
- No build and address options for the existing Line 5 pipeline.
- Shut down Line 5 at Superior Wisconsin to eliminate the need for the Line 5 pipeline under the Straits.
- Lawsuits involving Enbridge could lead to decommissioning of the Line 5 pipeline.
- The No Action Alternative in the permit application claiming that absent construction of the tunnel, petroleum products will continue to flow through existing pipelines is inadequate since Enbridge is violating original easement, and Michigan, acting through Governor Whitmer and Attorney General Nessel, is fulfilling public trust obligations by retracting the easement.

- Enbridge's current refusal to abide by the governor's order does not entitle Enbridge to assert that the No Action Alternative is to leave the current Line 5 pipelines in place and operating.
- Legal history indicates that if USACE denies the permit, indefinite operation of the existing Line 5 dual pipelines is the likely result.
- The state and federal government does not have the right to shut down business based on conjecture. State and federal government should provide support for those affected if there were no Line 5 pipeline.
- If Line 5 is shut down then the oil would be transported via other pipelines, such as the expansion of Line 78.
- Leaving the existing Line 5 in place or abandoning in place is like a superfund site since it leaves the contamination in place.
- When considering a No Action Alternative, the current level of activity is used as a benchmark (Custer County Action Association v. Garvey, 256 F.3d 1024, 1040 (10th Cir. 2001)). The only argument for not using the status quo as the No Action Alternative would be under a theory that the property rights no longer exist, given the revocation case now pending.
- The No Action Alternative requires an agency like the USACE to consider what steps parties will take if the status quo is maintained. As CEQ's Forty Most Asked Questions Guidance explains: Where a choice of "no action" by the agency would result in predictable actions by others, this consequence of the No Action Alternative should be included in the analysis. For example, if denial of permission to build a railroad to a facility would lead to construction of a road and increased truck traffic, the EIS should analyze this consequence of the No Action Alternative. If Line 5 is shut down, and no permit is granted for a replacement, all of the parties will take predictable actions. The refineries will find alternative feedstock sources. Michigan propane consumers will find alternative supplies, or alternative heating sources. There has already been extensive analysis of those possible alternatives:
    - Line 78: Enbridge's own Line 78—Line 78A from Flanagan, Illinois through Griffith/Hartsdale, Indiana to Sarnia, Ontario, and Line 78B from Stockbridge, Michigan to Sarnia, Ontario—has an existing capacity of 570,000 and 500,000 barrels per day (bpd) respectively. Both segments of the pipeline have unused capacity, but pump upgrades could increase capacity for the pipelines to 800,000 and 525,000 bpd. These are part of Enbridge's Mainline system and connect to Line 5's current terminus in Superior, Wisconsin, or to points closer to where the oil is extracted in North Dakota, Montana, or Canada. That would be more than half the oil currently flowing through Line 5.
    - Portland Pipeline: The existing Portland, Maine to Montreal, Quebec pipeline has a capacity of 223,000 bpd, which could supply 100 percent of the refining capacity of the Suncor refinery in Montreal, and make nearly another 85,000 bpd available to other refineries. That pipeline is not currently under Enbridge's control, but, as CEQ's Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 46 *Federal Register* 18026 (March 23, 1981, amended 1986)

makes clear, all "reasonable" alternatives must be considered, even if they are outside the capability of the applicant or outside the jurisdiction of the agency.

- Tankers: Long-range marine tankers carry between 310,000 and 550,000 barrels of oil, and Very Large Crude Carriers can carry up to 1,000,000 barrels. The Valero refinery in Levis, Quebec currently receives all of its oil by marine tanker coming down the St. Lawrence Seaway.
- Rail: Oil from Montana, North Dakota, and Western Canada can be transported by rail, and there is already 110,000 bpd of offloading capacity from existing rail lines. Rail transportation may be more expensive than pipeline transportation but expanding rail delivery is certainly feasible.

5.4.4.3 Renewable/Green Energy Alternatives

Comments suggested the following:

- Alternatives should prioritize energy resilience with renewables.
- We need to reduce fossil fuels with renewable energy alternatives.
- Enbridge should be a leader in developing an alternative infrastructure.
- Renewables/green energy is not a viable alternative because it is not far enough along to replace fossil fuels. And the renewable infrastructure is not readily available. Windmills kill birds and breakdown in the winter. The current electricity grid is not equipped to handle all electric power.
- We would be better served with carbon drawdown facilities.
- USACE should focus efforts and dedicate financial and human resources towards mitigating the negative effects of new clean energy infrastructure such as offshore wind in the Great Lakes, the installation of new power lines through wetlands, deep geothermal drilling, and other projects.
- A Michigan Tech study found there is no alternative for the demand that is going to be here for the foreseeable future, regardless of how quickly we transition to cleaner fuels.
- The U.S. should pressure other countries in the world (India, Russia, China) to cut back and develop other resources.
- The economic and environmental impacts of a transition to cleaner renewable energy sources should not only be studied as an alternative to the proposed tunnel project, but a transition to cleaner energy also calls into question the purpose and need for a potentially destructive tunnel to transport crude oil and natural gas.
- We need renewable alternatives such as mass transportation instead of cars and cars that run on biofuels and water.

5.4.5 Comments on the Applicant (Enbridge)

Comments suggested the following:

- Enbridge is not trustworthy, and their proposals should be reviewed with the highest scrutiny.
- Consider how Enbridge is a foreign company based in Canada. They came down through the U.S. because our rules were not as strict as their own Canadian regulations.
- Enbridge has a long history of accidents, spills, and inadequate cleanup. Degradation of their systems has gone unreported. Enbridge is responsible for the two largest inland oil spills in U.S. history, and has a long record of negligence, regulatory violations, and cover ups. Other examples include the 1991 Line 3 oil spill on a wetland near Grand Rapids, Minnesota; the 1973 propane extraction plant explosion in Rapid River, Michigan; the 2019 valve leak in Ft. Atkinson, Wisconsin; the August 1, 2019 explosion near Danville, Kentucky; 2010 Pipeline 6B leakage in Kalamazoo; the 2010 oil discharge in Marshall; the Crystal Falls oil release that caused a wildfire and charred wetlands; the 2021 aquifer breach during construction near the Clearbrook Terminal; and horizontal directional drilling frac-outs during Line 3 construction. Enbridge has caused irreplaceable damage in Minnesota where they go under the Mississippi River.
- On July 15, 2010, an Enbridge executive testified in Congress that the Enbridge control center could detect leaks and respond almost instantaneously. On the same day, Enbridge asked the Pipeline and Hazardous Materials Safety Administration (PHMSA) to allow Line 6B to operate for another 2.5 years, despite knowing of over 300 defects in the pipeline. Ten days later, Line 6B ruptured and Enbridge had far from an instantaneous response. Enbridge misread its own safety equipment, increased pressure in the pipeline, and pumped it for 17 hours, spilling 1.1 million gallons of diluted bitumen into Talmadge Creek and the Kalamazoo River. A National Transportation Safety Board investigation into the spill concluded that "[t]he rupture and prolonged release were made possible by pervasive organizational failures at Enbridge." Things have not changed at Enbridge since 2010, as their continued actions indicate. Enbridge employees have misled and at times outright lied to Michigan regulators about the condition of Line 5.
- In 2020, Michigan Attorney General Dana Nessel sought and received a preliminary injunction in Nessel v Enbridge to temporarily shut down Line 5 after underwater screw anchors attached to Line 5 were damaged, likely by an Enbridge-contracted vessel. After discovering the damage and reporting it to the state and PHMSA, Enbridge unilaterally decided to re-open the pipeline before taking action to determine what had caused the damage and whether or not the dual pipelines were still safe to operate. It took the preliminary injunction for Enbridge to shut down the pipeline until the source and extent of the damage could be fully assessed.
- In 2021, Enbridge rebuilt the Line 3 pipeline across Minnesota. There were at least 28 distinct frac-outs and spills of drilling mud during construction, including at least three artesian aquifer breaches, releasing an estimated 300 million gallons of groundwater. Each of these 28 frac-outs constitute separate violations of their CWA Section 404 water quality certification permit. This means that 63 percent of

Enbridge's horizontal directionally drilled water crossings were polluted with drilling fluid. Enbridge's construction plans and practices failed most of the time when it came to Line 3 water crossings. USACE should take into account Enbridge's history of poor construction, operation, and maintenance practices when conducting its EIS.

- On April 1, 2018, the articulated tug and barge Clyde S VanEnkevort/ Erie Trader was westbound in the Straits of Mackinac, when the barge's starboard anchor, which had unknowingly released and was dragging on the bottom, struck and damaged three underwater electrical transmission cables and two oil pipelines. About 800 gallons of dielectric mineral oil leaked into the water from the cables. The anchor also struck both legs of Enbridge's Line 5 dual pipeline, causing a dents and removal of the protective outer coating. Enbridge's auto-detection mechanisms failed, a pipeline inspection gauge in the pipeline failed to detect the damage, and it took two weeks for the company to get a remotely operated vehicle (ROV) capable of diving to pipeline depth onsite to review the damage to the pipeline. Throughout this entire process, Enbridge never shut down Line 5, even though it was damaged, and Enbridge did not know the extent of the damage. The U.S. Coast Guard determined one of Enbridge's own contracted vessels likely inflicted the damage.
- Enbridge has an inadequate and incompetent emergency preparedness program. Enbridge lacks the equipment and trained manpower to respond quickly to emergency situations. The project should only be approved if Enbridge agrees to demonstrate the ability and capacity to respond quickly to leaks. This includes demonstrating the financial means to ensure that remediation of spills would be immediate. History shows that Enbridge's response to the Kalamazoo spill should have taken 10 minutes but took 17 hours.
- Enbridge has a record of not following environmental protection laws (e.g., USEPA fine in 2020, violated spill consent decree multiple times). Enbridge has been fined 108 times since 2000 including fines for not maintaining their pipelines. Enbridge tends to only own up to mistakes after opposition exposes them. Their mistakes do not get reported to the right people and tend to get covered up. The U.S. Coast Guard does not regulate them, so there is room for misbehavior.
- Enbridge tried to fast track this USACE permit and asked for a mere environmental assessment. Enbridge is exploiting escape clauses in the Tunnel Agreement so that they are able to back out of building the tunnel without a penalty.
- Observations of the comings and goings, and mostly absence, of Enbridge employees during the months of August and September 2021 at McGulpin Point. The 'No Trespassing' sign at the McGulpin point was ironic because Enbridge frequently violated the only legal basis for the dual pipelines after the easement was revoked in May 2021.
- The North Straits Facility station had a couple of explosions that are currently under investigation by the police. A truck exploded, and it is still unknown why.

- Enbridge's conduct demonstrates a disregard for government orders, especially when such orders are motivated by concerns about the safety of Enbridge pipelines. USACE should be skeptical of Enbridge's ability to construct and operate the project safely and, specifically, to respond to governmental concerns about safety. For example, Enbridge was forced—by court order—to shut down the dual pipelines in the Straits following damage to an anchor support. In June 2020, Enbridge re-opened a portion of the pipeline without consulting the state of Michigan over the state's request. In addition, Enbridge has shown a lack of regard for its commitments established in the 2017 Consent Decree with the federal government, which required maintenance work along the entire Lakehead Pipeline system. Enbridge's lack of compliance with the 2017 Consent Decree has resulted in $11.6 million in stipulated penalties.
- Enbridge is trespassing. The Public Trust Doctrine was not properly evaluated or applied by Michigan in granting the 1953 easement for the Line 5 dual pipelines nor in the December 2018 easement for the proposed tunnel.
- Enbridge has a track record of violating its own design specifications.
- The project will benefit Enbridge more than the public. Enbridge's own researchers said that the price of gas would only rise half a cent if Line 5 was shut down and that they would still make massive profits.
- National Energy Board exposed corruption issues involving Enbridge. Once approved the pipelines changed asset ownerships which rendered the National Energy Board conditions null and void. Enbridge got approvals but flipped pipelines to other corporate entities who were not "contractually liable" to clean up spills or to abide by terms of approvals. Review the certificates of ownership and insurance coverage to evaluate the policy terms. Check to see if the collateral still exists or is Enbridge committing insurance fraud.
- Based on filing with the U.S. Securities and Exchange Commission and Enbridge investor communications, there is no evidence that their Board has even approved the tunnel.
- Enbridge has not provided information on how they plan to finance the tunnel project so is the real agenda to get Michigan taxpayers to pay for it? What exactly does the 99-year contract mean as far as Michigan's obligation to use it and if not, will we have to pay for it? Lawmakers have already dedicated $4.5 million of taxpayer money towards planning, oversight and legal services related to the proposed Mackinac Straits utility tunnel project. This budget expenditure came prior to any permits being applied work and any work initiated on the project. As a result, taxpayers' money will likely be taken again as this project continues and this will continue until it is either completed or abandoned. As a result, Michigan's citizens will be subsidizing a project for a private company that originally agreed to pay all expenses, which is not in the public's interest.
- Enbridge cannot find an insurer for the Line 5 Tunnel Project and is largely uninsured, uninsurable, and un-bondable. Enbridge should be required to provide

evidence from insurers and bonding companies that would be prepared to underwrite the risk.

- Enbridge should lose its license to operate.
- Enbridge is dependent on fossil fuels for profits and participates in marketing and misinformation about the need for fossil fuels. Enbridge embellishes the benefits of the pipeline and the state of gas prices. Enbridge is lying to the public when they say gas prices are directly blamed on delaying Line 5. Yet Enbridge's own experts said gas would only rise half a cent if Line 5 shut down.
- Enbridge had many months to collaborate and develop a good faith plan to shut down the pipeline safely and to plan assurances for propane needs, but they chose not to.
- Enbridge disregards Indigenous sovereignty. This includes disrespect for ceded territory lands from past spills, mistrust among Tribal nations due to treatment of Indigenous women, and operation of the Line 5 pipeline through existing Tribal-owned lands despite disapproval of Tribes.
- Enbridge misrepresents their communication and outreach with Indigenous communities and Tribal members. They bribe Tribal citizens and Tribal nations for their support of the project, but it does not truly represent the impacted Tribal communities.
- Do not trust Enbridge to stop construction if they find an archaeological site. Enbridge released an employee that brought up the presence of a cultural sacred site.
- Tribal governments were not initially consulted when Line 5 was constructed through its Ceded Territory, and Tribal governments have objected to Enbridge’s archaeological and cultural survey methods and contractors, as well as its public relations campaign of using traditional cultural practices against Tribal nations.
- Enbridge has a history of pipeline development resulting in impacts to wild rice (e.g., from dewatering activities). The Enbridge Line 3 project damaged several wild rice lakes, which are sacred to the region’s Indigenous population, making them unusable.
- Enbridge’s behavior of lobbying and threatening local protectors is unethical. Consider Enbridge’s spending on false claims and propaganda. Enbridge paid Minneapolis, Minnesota sheriff departments to arrest people. They paid $8.5 million to arrest peaceful protestors trying to protect the water.
- Enbridge purchasing portions of public land is unethical and interferes with the public interest. Enbridge paid $5 million to buy acreages of land in Copper Falls State Park where the Line 5 reroute is occurring in Wisconsin.
- The Enbridge-prepared depreciation study states that this pipeline will be irrelevant in the future. It shows the accelerated depreciation schedule of the existing pipeline.

- Enbridge is extending this process to keep the line open and will not really build the tunnel. The tunnel project is an attempt to keep Line 5 running for profit. The continuous effort to brush aside environmental impacts is secondary to extract and exploit fossil fuel economics.
- The existing pipeline support structures installed by Enbridge are unsafe and were not approved. Also, Enbridge contractors have damaged pipeline supports.
- Enbridge is acting illegally. For example, the pipeline is running illegally in both Michigan and Wisconsin by actively defying an eviction order in Michigan and Enbridge has been ruled trespassing by a Wisconsin judge. Enbridge is holding expired permits with the Bay Mills Indian Community, the state of Michigan, and the Bad River Band of Lake Superior Chippewa (federal court determined).
- USACE and other state/federal governmental agencies must consider legal and financial accountability and criminal enforcement.
- Enbridge considers climate change impacts an extraneous issue and did not consider a No Action Alternative when they submitted their permit application.
- Enbridge consistently demonstrates its commitment to maintaining a high level of safety with 24/7 monitoring of the Strait's crossing. Regular inspections with both ROVs and skilled divers. Enbridge has had zero incidents in the Straits for over 65 years and the tunnel design is a proactive plan to ensure continued energy supply in a safe manner.
- The environmental review must include data and sources not directly from Enbridge. It must question Enbridge's account of impacts and events. I have no doubt Enbridge could find and pay-off an expert to say the tunnel could be built successfully.
- Despite promising Union jobs for the Line 5 tunnel, Enbridge previously provided less jobs in Minnesota than they had promised, so their workforce estimates should not be trusted.
- Concerns about trusting Enbridge-provided information and self-reporting data. Concerns about third party contractors paid by Enbridge. Include funding for contractors in a full risk analysis, including specification of outsourcing to contractors and additional subcontractors. Are they already determined or is the price only going to be used as the discriminating factor for selection? Each one of those contractor levels needs to be able to assign risk to a particular aspect of the project, including any environmental aspects that they could be involved in, and have controls in place to control them environmentally for all levels.
- The contracting company TRC is biased towards Enbridge and should be disqualified. TRC made many errors, including using outdated data showing an incorrect route, and completely omitting sections on cumulative environmental effects in water quality.
- There is lack of proper studies and research for the project. Enbridge demonstrates negligence by not taking enough boring samples for the tunnel. The lack of

planning and insufficient tests is an indicator that Enbridge feels that they are above regulations, and do not really care about the safety or longevity of the tunnel.

- Enbridge stopped underwater surveillance for cultural sites, thereby Enbridge has failed to conduct appropriate surveys.
- Enbridge's project fact sheet is inadequate.
- Concerns about the lack of adequacy and validity of Enbridge-prepared studies including the risk assessment, geotechnical reports, alternative study.
- Regarding the January 2021 Geotechnical Report by McMillen Jacobs, page 5 discusses a comparison to other projects and the table indicates the level of coverage for the Line 5 project is less than the typical level of coverage in similar project.
- Enbridge's Alternatives Analysis report compared the existing dual pipelines with a sealed annulus tunnel design which is not the tunnel as currently proposed.
- Enbridge's use of broken testing equipment, questionable land acquisition, and threatening of local protectors leaves little confidence in a successful project.
- Enbridge is only looking at a way to get to the end by using the Anishinaabe as means. If we do not have laws in place that punish corporations for their unethical behavior, the exploitation of Tribes and their Treaty rights will only continue.
- Not only is it fiscally irresponsible to enable this project, but there is grave concern regarding the safety and ability of Enbridge to respond to emergencies and routine maintenance when the company becomes financially insolvent.
- Enbridge is committed to safety standards and renewable energy in the future. Enbridge has spent millions of dollars on a reliable safety valve. The current technology and safety redundancies in place at the Mackinaw Straits Facility are impressive. A former contractor detailed the multi-step process involved in reporting and responding to a spill. Enbridge is a leading developer and operator of local infrastructure comprised of wind and solar facilities and European offshore wind facilities in operation. Enbridge's net zero emissions plan is embedded in operations and capital allocation training for achieving targets and resiliency through transition to clean energy.
- Enbridge has never invested a penny within Michigan for renewable energy delivery options.
- Enbridge is a good actor in communities. Their workers do a good job of maintaining pipelines and the surrounding land where it goes through people's property. Enbridge created the Fueling Futures program to invest in local communities. Additionally, Enbridge matches employee donations and employees get paid time off for volunteering.

5.4.6 Comments on Cultural Resources and Section 106 Consultation

Comments suggested the following:

- The Section 106 consultation process and review needs to inform the EIS process and must include the natural resources through the environmental review need to also be understood as historical properties. These reviews and processes must be completed in tandem.
- The EIS must recognize and identify the existence of sacred sites, culturally identified as places where significant events occurred as well as burial or cremation places.
- Examine the concerns expressed regarding cultural resources and ensure data gaps are adequately filled in a broad manner to determine not only cultural resources within the Straits, but potential impacts to nonrenewable cultural resources and place-based heritage.
- More information is needed to fully understand the cultural and archaeological sites in the Straits. Archaeological sites within the project area, surrounding area, and downstream areas must be identified and addressed in the EIS.
- The EIS analysis should ensure that the survey area boundaries are sufficient to capture direct, indirect, and cumulative impacts to Tribal cultural resources, including increased noise, traffic, dust, light pollution or similar or impacts to Tribal members' access to Tribal cultural resources (TCRs) from construction and operation. USACE should consult with Tribes to establish survey boundaries and include the rationale for boundaries in the EIS.
- USACE should ensure that the EIS relies on a complete and well-documented TCR survey, with input from Tribal Historic Preservation Officers, Tribes with historic presence in the affected areas, Indigenous communities, and the State Historic Preservation Office. The EIS should also ensure the requirements for the National Historic Preservation Act are followed, including consultation with the Tribal entities, consideration of whether TCRs are historic properties, and consideration of ways to avoid, mitigate, or minimize any adverse effects to historic properties. Include portions of the TCR Survey Report that are appropriate for public viewing, such as methodology and summary of findings, as an appendix to the EIS.
- For the NEPA and permit evaluation processes, care must be taken to protect the cultural sites from damage during surveys and to keep locational information confidential for spiritual reasons, and to prevent looting and vandalism. Identification needs to be done in consultation with and at the direction of appropriate Tribal entities.
- The floor of the Great Lakes is a plethora of archeology that has yet to be studied. There is evidence of ancient Tribal cultural activity at the bottom of the Straits. There is a potential World Heritage Site at the bottom of the Straits. A Tribal elder discovered a 10,000-year-old sacred site at the bottom of Straits.

- There is existence of a mound at Point La Barbe very close to the west line entry point into the Straits. So, there is extensive cultural significance of Point La Barbe. Locals know it as the place where the Voyageurs (primarily French fur traders) and the Anishinaabe who worked alongside would take rest as they traveled from the west or the south across the Straits.
- Concerned sovereign citizens will lose their chance to study history. The water in the Straits close to Line 5 holds a wealth of information that could be critical to our understanding of how Tribal people lived over thousands of years ago. The proposed plan would obliterate historic archeological sites and the direct lineage and cultural connections to Anishinaabe nations.
- We are on the ancestral land of the Ojibwe, Odawa and Potawatomi, and these Tribal nations still have cultural rights and environmental rights on these lands. There are cultural rights within the Straits of Mackinac that are endangered, such as burial mounds, ancestors, artifacts, fossils, and historic records that interweave our people to this land and to this water.
- This land is scared Tribal land deemed the “center of creation” for the Bay Mills Indian Community. More than 50 percent of Bay Mill Communities are fully relying on the Treaty resource to provide income, to put food on the table, to provide medicine, and to perform ceremonies.
- The EIS must provide a full analysis of the historical and cultural landscape of the Straits as well as all areas crossed by the Line 5 pipeline. This analysis should be led by the affected Tribes and their Tribal Historic Preservation Officers. It is important to note that Tribes do not make a distinction between cultural resources and natural resources. Wetlands, plants, animals, rocks, all play a role in Tribal traditional lifeways and the EIS must not create a separation where one does not exist. When assessing the impacts of the proposed project and its alternatives, the impact to culture must be considered at the same time.
- USACE needs to ensure the EIS examines all potential impacts that could result from the Proposed Action to (1) terrestrial archaeological sites, (2) submerged cultural sites, (3) architectural and above-ground historic sites, and (4) TCPs and Native American sacred sites.
- Near shore tunneling may impact burial grounds that are currently undocumented. Once cultural resources destroyed, they are lost forever. Native artifacts identified and dug up during studies and construction should be preserved for study or repatriation.
- According to Professor John O’Shea, Curator of Great Lakes Archaeology, significant concerns exist regarding the cultural resources assessment conducted for the proposed Great Lakes Tunnel. No new survey was conducted, but instead the assessment was based on sonar imagery collected previously for other purposes. In addition, the technician assigned to the job was told only to consider shipwrecks. O’Shea noted “the cultural deposits which are very likely present and visible in the secondhand sonar imagery are about as significant as a site could be, given the small number of sites from this time period on land, and would be

unique as the first instances to be documented off and beyond the Alpena-Amberly Ridge in Lake Huron. At the same time, the sites are extremely vulnerable to disturbance and would be obliterated without a trace by the proposed tunneling. These are a unique piece of Michigan's past that should not simply be brushed aside and destroyed."

- With Tribal permission, much more exploration of the Straits for identification of archaeological sites must be conducted and included in the EIS.
- Descendants of colonial settlers have an obligation to return the land to Lake Superior Chippewa.
- Group of Anishinaabe people that made the Ice Age-era archeological discovery via a ROV requested a full archaeological study on the same day that Enbridge announced their tunnel project plan was 90 percent complete.
- The EIS must account for the impact on Indigenous Nations in Canada and North America.
- There are ancestral stories of underground caverns to travel in. While they remain undocumented by scientists, Indigenous oral history has come proven to come to fruition and should be studied more closely.
- There are culturally significant plants, such as plant medicines Tamarack and red willow, along the path of the pipeline.
- The heart of North America or "Turtle Island" originated from the Great Lakes.
- The Seven Generations Principle is a philosophy that encourages decisions to be made by looking at ancestors from seven generations ago, and also by looking seven generations into the future. Lakota leader, Crazy Horse, prophesized that when society would be living in a sick world, the Indigenous will unite and ask the oppressors to be heard to ensure that the earth is respected and protected.
- USACE should ask to visit elders and listen to them, to make it easier for them to participate in the scoping and consultation process. Consult with Tribes to learn cumulative historic and spiritual harms that are both visible and invisible. Consulting Tribes should on board at public meetings, including the next big meeting when the Draft EIS is released and public comments are taken, so that they can have meaningful participation.

5.4.7 Comments on Tribal Resources and Ceded Territory Rights

Comments suggested the following:

- The Great Lakes are the cultural backbone for eight states, two provinces, and multiple Tribes and First Nations. Tribes have already expressed opposition to the project.
- Tribal communities maintain Treaty rights in the region:
  - Treaty of Sault Ste. Marie of June 16, 1820;
  - Treaty of Washington of March 28, 1836, 7 Stat. 491;

  - Treaty of Detroit of July 30, 1855; and
  - Treaty of Detroit of August 2, 1855.

- As signatories to the 1836 Treaty of Washington, the Ojibwe and Ottawa ceded to the federal government over 14 million acres of land and, in addition, the waters of Lake Superior lying eastward of the Chocolay River, the northern portion of Lake Huron to the mouth of the Thunder Bay River, the waters of Lake Michigan from Ford River south of Escanaba to Grand Haven on Lake Michigan's southeastern shore, and all the waters connecting the three lakes. This area, known as the ceded territory, includes a large part of the upper and lower peninsulas and the Straits, and paved the way for Michigan's statehood. The Tribal Nations only agreed to this vast cession of their ancestral home upon assurance that they would have the continued ability to exercise their inherent rights, reserved by the Treaty, to hunt, fish, and gather throughout the ceded territory. The Tribal Nations carefully protected their traditional lifeway and its reliance on the environment's natural resources for food, shelter, medicines, and trade. If permitted, the project would be constructed and would operate in the ceded territory.
- In 2021, The U.S. Department of Defense (DoD) signed the Memorandum of Understanding (MOU) regarding interagency coordination and collaboration with Tribes early in the decision-making process for the protection of Tribal Treaty and Reserved Rights, which must be honored. This project is occurring in the 1836 Ceded Territory, which was Ceded in the 1836 Treaty of Washington, which has Article 13. Article 13 is judicially affirmed, and the 1836 Treaty Tribes have the right to hunt, fish and gather on the lands and waters ceded and includes the Straits and any public access points along the Straits.
- In general, transporting oil products through the Straits poses potentially significant risks to the Treaty area, and thus to the Tribal citizens who exercise their Treaty rights. In the interest of giving appropriate weight and consideration to resources protected under Tribal treaties and reserved rights, the EIS should fully disclose potential impacts or risks to those resources under all alternatives.
- This land sustains the livelihood and traditions of Tribal communities. Tribes rely on hunting and fishing for their economies. The wild rice fields are sacred to the region's Indigenous population. Water is used for spirituality and prayer. Water ceremonies and rituals all begin with water. The traditional Tribal landscape includes what is living, includes the living planet and the water.
- In traditions, Tribes view the land and water, plants and animals, birds and fish as relatives.
- Indigenous communities depend on wetland ecosystems for their health and economy.
- Anishinaabe communities have a culturally, spiritually, socially, and ecologically significant relationship with the land.

- This project involves land and water that has Treaty rights. Enbridge is trespassing on these Treaty lands. Indigenous people gave up their land expecting the Treaties to be upheld.
- We need a living planet to practice our Treaty rights including spirituality, to have fishing, to have hunting, and gathering.
- Study the impacts that a major oil release would have upon the habitat of the Tribes and what the loss of Indigenous knowledge would have upon our own well-being.
- The NOI fails to mention the Treaty rights of the Anishinaabe people at all, despite the fact that the attention must be paid to potentially impeded access for Tribal members wishing to harvest Treaty lands. The EIS must acknowledge and uphold long-standing Treaties between the U.S. and sovereign Indigenous nations as “the supreme law of the land.” resources, especially given the Thirteenth Article of the 1836 Treaty. The EIS must address Tribal Treaty rights including fishing rights in any area potentially affected by a spill, whether it occurs in the Lake Michigan or Lake Superior basin/tributaries. Eleven Ojibwe Tribes hold the legal right to hunt, fish, and gather in the region crossed by Line 5.
- USACE has a fiduciary duty to ensure that Tribal Treaty rights are not abrogated or impinged upon in administering its permitting programs. See the Northwest Sea Farms, Inc. v. USACE, 931 F. Supp. 1515.
- It is the federal government's obligation to uphold our Treaty rights. That means preserving and protecting the Great Lakes from potential threats from development. Article 6 of the Constitution states that Tribal Treaties are part of the "supreme law of the land" and merit consideration early in federal decision-making. The DoD as a signatory to the Treaty and Reserved Rights MOU, committed to consulting with Tribes early in the decision-making process. I am not aware that the USACE has engaged in Tribal consultation with potentially affected Tribes prior to issuing this EIS.
- There are education provisions in Treaties between the U.S. and American Indian Tribes.
- Requests the USACE to make semantic adjustments to cease using the term "property" in regard to lands of the Great Lakes region. Instead, acknowledge that this whole region is traditional lands of the Anishinaabe people.
- Study the impacts of White Exceptionalism upon the willingness of Enbridge and the U.S. Government to view corporate economic profit of greater value than Treaty obligations to the Tribes and to the survival of their life ways. Principles derived from Doctrine of Christian Discovery have been applied against Indigenous Americans.
- The original Enbridge easement did not involve Anishinaabe people.
- Evaluate possible impacts to Lake Michigan and Lake Huron fisheries for all project alternatives and consider protective measures to both ensure capacity of existing fisheries and reduce fishery impacts.

- In consultation with Tribes and Indigenous communities, explore opportunities to better understand impacts to Tribal Treaty and reserved rights through Indigenous Traditional Ecological Knowledge, which the White House recognizes "*as one of the many important bodies of knowledge that contributes to the scientific, technical, social, and economic advancements of the U.S. and to our collective understanding of the natural world*."
- Consult with the Tribes to understand how they see how the White American beliefs in the Doctrine of Discovery and its derived principles have affected them since the time they first came in contact with Europeans and then became wards of the U.S. government.
- Disclose the potential for loss of access to land and waters for Tribal members to exercise Treaty reserved rights for each project alternative, including temporary disruptions to access. This includes the ability to continue to access and harvest culturally significant resources from the region, such as maple sugar, wild rice, birch bark, clay for pottery, fish, and other animals and water from the Straits itself. In Indigenous Traditional Ecological Knowledge these resources are intertwined with cosmology and spiritual practice. Consider the cost to the U.S. of knowledge lost, should Line 5 destroy the natural resource base of the Tribes.
- Identify and discuss how and where Enbridge would expect to limit access during construction and operations. Clarify whether, if Enbridge includes a mitigation measure stating that it will allow access, the company could change this decision later. Explain whether there are any legally enforceable mechanisms to ensure perpetual access to Treaty and reserved rights in or around project rights-of-way.
- Describe disruptions to the exercise of Tribal Treaty and reserved rights that could come from pipeline maintenance activities. If the project advances, then request that Enbridge consider commitments to coordinate maintenance activities with Tribes to minimize disruption to cultural events and gatherings.
- Identify long-term impacts from the construction to populations of organisms including but not limited to plants, animals, amphibians, reptiles, fish, birds, bugs, zooplankton, crustaceans, and macroinvertebrates, harvested by Tribal citizens and their relatives for medicinal, ceremonial, subsistence, and commercial uses. This analysis should include long term impacts and short-term impacts from permitted hot water discharges as part of the project to the Straits. As well as water quality changes due to increased discharges and the potential of a release of construction materials, and oil spill due to construction. Unaware of USACE Tribal consultation for the Line 5 tunnel project. USACE should ask for direct Tribal consultation, including requesting to visit elders in their chosen location.
- Any impacts to the animals and plants reserved by the Tribes must be robustly considered in collaboration with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and the Tribes.
- Tribal leadership should have authority to approve or deny the Line 5 project.

- Related to Tribal Treaty Rights, Cultural Practices, and Cultural Resources are impacts to water quality, air quality, and wetlands in areas of disturbance and in nearby areas that are connected to areas of disturbance. Without clean healthy water, air and wetlands, Tribal Treaty Rights, ability to harvest for cultural practice and the protection of cultural resources (including plant and animal species Tribes depend on) are greatly diminished. Without clean air the resources upon which Tribes rely for hunting fishing and gathering will also be impacted by lower air quality and increased emissions during construction activities. These emissions also have impacts to human health for those living, working, subsistence fishing, and recreation in the area.
- Water is the first medicine. Women bring life to this world, so Indigenous women are the traditional water protectors and should be listened to.
- White Earth Ojibwe Tribe is fighting with the first rights of nature case in Tribal courts where Manoomin (wild rice) is the plaintiff against Enbridge.
- The U.S. needs to re-ratify Treaties and honor them by stopping resource extraction and violation of Indigenous people. USACE, the Prime Minister of Canada, and the Prime Minister of Quebec should honor Indigenous Treaties and respect the first ever shut-down order on an operating pipeline. The Canadian government's inhumane treatment of Indigenous communities throughout colonial history is unacceptable. Honoring Treaties south of the border that pre-date obscure symbolic ones made with U.S. government is one step closer to reconciliation.

5.4.8 Comments on Pipeline Safety and Spills

Comments suggested the following:

- Given Enbridge's long history of accidents, spills (including leaks on Line 5), and inadequate cleanup, there are concerns about future spills and frac-outs.
- Consider Enbridge's past accident and spill records. Enbridge is responsible for the two largest inland oil spills in U.S. history. In 2018, an anchor sliced five cables and damaged existing Line 5 dual pipelines.
- Consider the history of oil industry's accident record including leaks and spills. Balls of tar were found on the beaches of Galveston Island back in 1977, long before the 2010 Deepwater Horizon disaster.
- If approved, the existing pipeline is still at risk for a spill until construction of new project is complete.
- The EIS should disclose spill modeling methodologies and assumptions and USACE's findings and conclusions on any spill analyses completed by Enbridge and require specific protective measures in the EIS.
- The analysis should assess and compare spill impacts from all Action Alternatives and the No Action Alternative(s), including, but not limited to, a comparison of potential impacts on difficult to access areas, ice covered areas, drinking water

and intakes, and plant and animal species. Compare the presence of geohazards and associated spill risks among alternatives.

- As appendices to the EIS, to the extent that USACE finds material to be publicly releasable, include the following: (1) liquid plume model and analysis; (2) model and analysis of proposed valve placement; and (3) model and analysis of spill risks to groundwater and drinking water. If USACE determines it is not appropriate to disclose this information, then include portions that are releasable, such as the methodology and assumptions. Clearly state whether USACE finds Enbridge's spill models and analysis to be acceptable.
- The area of analysis should include downgradient areas along the entire length of Line 5 in the Great Lakes basin. This information is necessary to evaluate the risk of spilled oil reaching Lakes Superior, Michigan, and Huron as well as inland areas in the ceded territories. This information is also needed to assess potential impacts to other public lands (e.g., national and state forests) and private lands, drinking water sources, trout streams, wells, etc.
- The modelling should include results obtained through analyzing a variety of scenarios. These should include a range of crude oil spill sizes (small incidents to catastrophic failures) and a variety of climatic (spring flood, high and low flow conditions, extreme rainfall events, etc.) and temporal (spills over frozen ground, spills under frozen rivers, etc.) variables. Different climatic scenarios should account for the likelihood of climate change exacerbating oil spill risks by increasing extreme weather events and contributing to erosion around the pipeline, among other things.
- The EIS should also document the environmental effects of past oil spills and assess the risk of a spill in the water-rich upper Great Lakes region for all alternatives. This includes summarization of the multiple independent studies and analyses that have been undertaken to examine the risks associated with worst-case Line 5 spill scenarios and explain how USACE is incorporating such studies into their decision-making process. Ensure the EIS examines, but isn't limited to, studies undertaken by: (1) the University of Michigan (Graham); (2) the University of Michigan (Schwab); (3) the Michigan Technological University; (4) Melstrom et al, 2019; and (5) Bessette et al, 2021.
- Use Design Failure Mode and Effects Analysis and Process Failure Mode and Effects Analysis tools to consider: design robustness; construction, design, maintenance, and safety precaution proposals through a benchmark review of other pipeline/tunnels currently in use worldwide. This benchmark will offer the opportunity to design alternatives to relay to Enbridge if their proposal indicates a poor scoring in the Failure Mode and Effects Analysis. Consider failure likelihood.
- There should be shut-off valves at critical points and every 5 to 10 miles. Existing lines need to have shut off valves installed as well.
- For the valve analysis, disclose the quantity of crude oil and NGLs that could spill within each segment per hour assuming the pipeline is operating at its current

capacity of 540,000 barrels per day or at a future higher daily capacity, if applicable.

- There should be periodic placement of automatic, computer-activated isolation valves such that ruptures cause closure of the valve to limit leakage once a leak above a low-volume threshold is detected.
- Analyze and discuss methodologies and strategies to reduce the amount of crude oil or NGLs that would be released in the event of a pipeline failure.
- Clarify whether the project footprint is within a High Consequence Area (HCA). The EIS should provide information on the HCAs used in the liquid plume model, and detail how many HCAs are present and what each HCA generally consists of.
- Detail how Enbridge used input from Tribes and other parties to inform its list of Line 5 HCAs. State whether the PHMSA concurs with Enbridge's HCAs list related to the dual pipelines.
- Discuss when Computational Pipeline Monitoring systems would be used, and how large a discrepancy in balance calculations must be detected before Enbridge is required to inform the regulatory agencies. Such information would provide a better understanding of how long small leaks might persist.
- Study the impacts that a major oil release would have upon the habitat of the Tribes.
- The risk tolerance should be adjusted to account for the limited number of directly comparable projects to this tunnel project.
- Enbridge should provide detailed plans for tunnel and pipeline safety. Including an oil spill and prevention plan, a plan to drain and evacuate in the case of an accident, etc. Analyze the pipeline monitoring process and detection features for spills. Plans must account for spills in the tunnel (e.g., how will Enbridge know a spill occurred in the tunnel? Will it be safe to enter the tunnel with free product being released?). Describe the experienced and equipped spill team that will be available 24/7 for a response and specify the response time.
- Consider the currents of the Great Lakes. Refer to the University of Michigan 2013 study high-resolution hydrodynamic model of oscillating currents. Since the currents will cause the spill to disperse at various depths, evaluate how a spill would be managed and recovered.
- A Michigan Technology University risk assessment indicates potentially 2 million gallons of crude oil could be released in a tunnel break.
- The wave action of the Straits is similar to that of an ocean, causing much erosion of the pipeline's supporting substrate and making containment of any potential leak or spill nearly impossible.
- Evaluate spill response in winter and ice conditions (up to 1 foot deep). Not only is it more labor intensive, but it is extremely difficult to have high efficiency of recovery in broken or brash ice, which is the typical conditions that exist in the Straits due to the fact that it is kept open for maritime navigation. The permit application fails

to demonstrate a plan for spill mitigation in the event of a rupture during ice cover or during a storm event including the amount of equipment staged in areas close enough to deal with event during a harsh winter event. Spill response in winter should detail the recovery methods used including scenarios involving thick ice that response vessels cannot get through.

- There are many maritime conditions in the Straits of Mackinac that would prevent or significantly impair the effective containment and recovery of spilled oil or exacerbate the spread of spilled oil, including wave height, wind, ice cover, and surface and subsurface currents. Even a small spill is likely to impact 37 miles of coastline with a best-case scenario of 30 percent clean up if there is no ice, waves are less than 3 feet, it is daylight, and all the equipment needed is nearby.
- Consider risks from natural disasters and terrorist attacks. The best way to harm the U.S. is to attack its freshwater supply. The proximity of the proposed tunnel near a federally-controlled bridge increases the threat of terrorism and sabotage.
- No matter the emergency preparedness plans, there is no way to prevent human error or unforeseen conditions.
- The possibility of a major oil leak in Great Lakes is being downplayed by energy corporations and petroleum politics.
- There are not enough resources or emergency response capabilities in the Great Lakes region to mitigate a pipeline break in the Great Lakes.
- Existing Enbridge spill and contamination data must be used to create a statistical model of the yearly risk posed by the pipeline in terms of the magnitude of releases, response times of recovery and mitigation, and the efficacy of the mitigation efforts for Line 5.
- The EIS must analyze the risks associated with the potential release of drilling fluids.
- The human and environmental health hazards of chemical constituents of the crude oil and any additives carried through Line 5 must be considered to understand impacts in the event of a spill.
- A worst-case spill could trigger an indefinite hold on ship passage through the Straits.
- The EIS should also fully explore and assess the economic impacts to the rural communities of the Straits region in the event of a worst-case scenario spill from existing Line 5 during construction of the tunnel. The EIS must include a detailed assessment of the effects that an oil spill would have on commercial fishing in Lakes Huron and Michigan including impacts on Tribal commercial and subsistence fishing.
- Once an accident occurs, it can never be completely remediated.
- EIS should include an analysis of Enbridge's horizontal direction drilling frac-out rate.

- Enbridge stated they would not assume risk or pay penalties for spills. There is a clause in their contract that limits Enbridge spill liability. The full economic impact of a spill and the cost of remediation should be posted and held in an escrow.
- A worst-case scenario risk assessment involving 58,000 barrels (or 2.4 million gallons) of oil from double rupture would result in $1.9 billion costs for cleanup, property loss, lost income, and damages. More than 400 miles of shoreline could be impacted. About 47 wildlife species of concern and 60,000 acres of unique habitat could be at risk.
- There must be accountability between the government and private companies regarding spill response.
- The tunnel would protect the Straits from leaks with concrete lining. The tunnel would eliminate the possibility of an anchor strike, and it would provide access for ongoing inspection and maintenance work. An oil leak cannot get through 100 feet of bedrock.
- The existing pipeline has withstood past threats of leaks.
- Many spills are due to public tampering.
- Accidents more likely with above-ground transport than pipeline transport of oil.
- A pipeline leak would have to overcome various pressures to leak into lake.
- Enbridge will implement comprehensive safety measures throughout the construction and operation of the project, and the company has a proven track record. Line 5 has not experienced leaks in the six decades of operation.
- The safe and continued operation of Michigan’s pipeline infrastructure is one of the oil industry's highest concerns.
- Enbridge is implementing extra safety measures such as: diligent, 24/7 monitoring of the crossing, using both specially trained staff and sophisticated computer monitoring systems; regular inspections, using inline tools, expert divers, and remote operating vehicles; and operating the line at less than 25 percent of its maximum design capabilities, to minimize stress on the pipeline steel and enhance safety.
- Enbridge conducts weekly testing of rupture detection and shutdown procedures.
- There are alarm systems in place at each end of the Straits to detect leaks or issues.
- Enbridge's installed pipe supports do not correct excessive bending, nor prevent lateral bending of the unsupported spans. The current Line 5 dual pipelines are being bent from side to side. Eventually the bending combined with loss of strength because of internal abrasion and external corrosion will result in a rupture and spill into the Great Lakes.
- If the project were a road tunnel, for vehicle traffic, it could be analyzed in isolation. However, the Line 5 Tunnel will house an oil pipeline for transporting highly

polluting and explosive oil, transported by pipes that will be under extremely high daily mechanical stress. This must be considered in the environmental analysis to estimate the collateral damage in case of pipeline failure.

- Engineers express that risk equals consequences multiplied by the probability of failure. The consequences of an oil spill are enormous, and the probability of failure is not 0 given the age and integrity of the pipelines, the harsh and unpredictable conditions of the Straits of Mackinac and the weather that impedes 24/7 year-round monitoring. Risk cannot be ignored just because probability is low.
- The project should only be approved if Enbridge can demonstrate adequate spill preparedness and response. There should also be analysis of what would constitute a thorough and comprehensive monitoring plan. That monitoring plan should serve as a framework for Enbridge and should be routinely verified that it is being followed.
- Assess how intensified and stronger oil spill preparedness and response planning may be warranted. To the extent that a new pipeline and subsequent system upgrades could lead to higher flows and potentially heavier commodity flows (e.g., Tar Sands) along the entirety of Line 5, without planning for these potential results, the risk of environmental impact to the Straits from more probable spills at inland river crossings near the Straits (i.e., Line 5 near the US-2 and I-75 corridors) with challenging response implications may be increased.
- Disclose what pumping machines would be present to ensure no oil sits undetected in the tunnel should it leak.
- It is difficult to know what chemicals are in spill cleanup dispersants, or what the long-term effects will be since their exact makeup is kept secret under competitive trade laws.
- The EIS should include an analysis of the potential risks of allowing Line 5 to remain and operate as it is without provisions for the secondary containment that would be provided by the tunnel.
- The equipment that Enbridge acquired (8 NOFI Current Buster 2 and Current Buster 4 oil containment systems for open water) can be deployed in open water in conditions up to Beaufort Wind Scale of 4 – wind below 19 miles per hour and wave height below 3.4 feet. Those are not the general conditions experienced in the Straits. For the period from December 9, 2016 to December 8, 2017, the National Oceanic and Atmospheric Administration Great Lakes Coastal Forecasting System Nowcast wave model forecast Significant Wave Height exceeded 3.3 feet (the Current Buster's operational limit) for 359 hours in the vicinity of Line 5. The Nowcast forecast for the year 2016 for the open water about two miles west of Line 5 indicates significant wave height exceeded 3.3 feet for 521 hours, 44 percent more hours than in the Straits. Thus, wave heights outside the Straits are better criterion for pipeline shutdown than wave heights within the Straits. In addition, sustained winds above 20 miles per hour occur frequently in the Straits. Wind data for Mackinaw City indicates between November and April,

sustained winds (3 hours of more) above 20 miles per hour are experienced from 6 percent to 14 percent of the time.

- A clay cover or some other type of low permeability membrane could be placed over the fill path to reduce the chance of significant petroleum release during a pipeline spill event. Enbridge should have multiple skimmer boats with inflatable booms moored nearby with capability of being deployed immediately in the case of a spill.
- A field hearing regarding the Straits of Mackinac Pipeline Issues occurred on August 20th, 2018. Question-and-answer sessions with two panels were conducted by the Senator Gary Peters, with representatives from PHMSA, the U.S. Coast Guard's Ninth District, and the Office of Response and Restoration of the National Oceanic and Atmospheric Administration. When directly asked if the federal agencies represented by panel members were, indeed, currently capable of cleaning up an oil spill resulting from a Line 5 rupture, the best answer from panel members was "hopefully."

5.4.9 Comments on Pipeline Safety and Explosions

Comments suggested the following:

- There is risk of explosion due to toxic and highly flammable oil and gases (methane, sulfur dioxide, propone, butane, NGLs). According to Richard Kuprewicz, who is a chemical engineer with nearly 50 years in the oil and gas industry, whose background includes extensive work in emergency response and pipeline incident command, there is a potential for a release into the Straits from the tunnel by way of a catastrophic explosion. According to Kuprewicz, "both propane and crude oil are highly hazardous and volatile substances and there is always a risk of explosion when handling these substances. When transporting these substances through a pipeline enclosed in a tunnel, the risk of an explosion is enhanced which in turn enhances the probability that the secondary containment vessel will fail."
- Enbridge has not addressed the MPSC concerns regarding risk of explosion. Determine the risk of an explosion in the tunnel along with the breach of the secondary containment vessel. Identify methods, if any, to reduce the risk of explosion.
- Consider the risk of explosion during construction, such as the explosion risk from methane pockets during tunnel drilling. The geotechnical data report revealed dissolved methane in groundwater above reportable limits in several locations across the proposed tunnel profile. Dissolved methane in groundwater is a sign of potential methane pockets within the tunnel profile, which are hazardous and could explode while the tunnel is being constructed. Without further geotechnical analysis, an encounter with unexpected methane pockets and/or hydrogen sulfide while drilling the tunnel could be fatal for workers, and could also cause an explosion which could impact the existing Line 5 pipeline, as the tunnel profile is

situated almost directly beneath the existing pipeline. If drilling causes a sinkhole, caverns with natural gas storage could be encountered and result in an explosion.

- Evaluate whether explosive NGL should be pumped through the enclosed 21-foot diameter tunnel.
- Evaluate potential ignition sources such as ventilation fans, lighting, and tools. Could other utilities located within the tunnel cause a source of ignition that could ignite leaking product or methane? American Transmission Company indicated Enbridge plans to include electrical transmission in the tunnel which would increase the risk of explosion.
- A pinhole leak of NGLs could cause an explosion given the presence of electricity and oxygen in the tunnel.
- The risk assessment is invalid.
- Consider previous tunnel explosions such as the 1971 Port Huron water tunnel project methane explosion.
- A report written by Gary Street, P.E., a retired Dow Chemical Company engineer, was provided to USACE and must be reviewed. Mr. Street has warned for several years now, the release of NGLs inside a tunnel can create the world's largest pipe bomb.
- Analyze full cost of all human and environmental harm from rupture and explosion.
- Explosion would lead to destruction of property and potential loss of life within 0.25 mile of exit point.
- Enbridge reported methane in roughly 20 percent of pipeline-adjacent groundwater samples. If the methane concentration in air is between 5 and 15 percent, the Lower Explosive Limit and the Upper Explosive Limit, respectively, it can lead to deadly and destructive explosions. The Dynamic Risk Report, upon which Enbridge and the state agencies relied, assumed there would be no methane present during construction. The risk of this groundwater entering the pipeline due to mechanical or human error must be thoroughly evaluated.
- According to Brian O'Mara, "Data submitted by Enbridge in its permit application reveals the existence of dissolved methane in the groundwater, the aquifer underneath the Straits. If groundwater infiltrates into the tunnel, methane dissolves into the air. If there is a spark from a machine or other source, that creates a potential danger of explosion and poses a threat to the construction crew."
- Because of the lack of geotechnical data, it is possible that elevated concentrations of methane will be encountered during construction along the proposed path of the tunnel. Encountering methane during tunneling could lead to an explosion during the construction phase of the project, risking both environmental consequences and human life.
- The design of the project carries the risk of an explosion either from a hydrocarbon leak within the enclosed tunnel or an infiltration of methane from the groundwater. The V- or U-shaped tunnel design has the potential to contain an explosive

atmosphere at its lowest part heightening the risk of product reaching the Straits by way of a catastrophic explosion.

- Enbridge's design includes an enclosed tunnel where the three necessary elements for an explosion have the potential to be present at the same time: (1) a failure of the pipeline resulting in a hydrocarbon release, (2) that forms a heavier than air vapor cloud, and (3) that is ignited by a source of electricity. The explosion risk from a hydrocarbon leak is a direct consequence of Enbridge's design plans and USACE cannot ignore this connection in the scope of its EIS.
- A hydrocarbon release from a crack or rupture of the pipeline running through the tunnel will mix with the air to form a heavier than air vapor cloud. The heavier than air vapor cloud will sink to the low spots of the tunnel elevation directly falling near equipment. This differs from a natural gas pipeline, which is known to operate through underground tunnels, and which would result in a lighter than air vapor cloud following a pipeline rupture. A vapor cloud that is lighter than air in an enclosed tunnel will rise and be more likely to settle in closer proximity to gas detection systems and away from electrical equipment.
- Once ignited, an explosion within the tunnel will cause a high-pressure event, usually followed by multiple fires and explosions, such as the 36-hour long fire that was the result of the ignition of a vapor cloud released from Line 5 in Crystal Falls, Michigan in 1999. Blast forces of this magnitude have the potential of shattering concrete, especially segment concrete linings. This risk, in turn, runs the risk of releasing material from Line 5 into the Straits.
- Enbridge has not provided a spill response plan that addresses an explosion event. The scope of the EIS must include an analysis of such a plan and the extent of the environmental impacts of an explosion and/or spill from the project. USACE should require that Enbridge produce a comprehensive spill plan based on the explosion risks outlined above so that it—and members of the public—can analyze the appropriate response to such an event.

5.4.10 Comments on Public Health and Safety

Comments suggested the following:

- Access to safe water is essential to public health, whether it is used for drinking, domestic use, food production, or recreational activities. The project is a threat to clean water in urban and rural areas which is a public health issue.
- A spill would have significant impacts on rare and high-quality surface waters, drinking water supplies, and habitat, among other resources, including the potential for irreversible damage to the Great Lakes. Future generations potentially drinking water laced with contaminants and carcinogens. Spills could also irreparably damage waters and lands that are essential to the exercise of Tribal Treaty and reserved rights and continuation of Tribal traditional lifeways. In addition, if a spill were to occur during an extreme weather event, such as during the winter during full ice cover, it would likely alter the dispersion of hazardous materials and stall containment and cleanup activities.

- An accident or spill would have drastic public health implications (e.g., Flint). Consider what the spills to date have done to Michigan residents including children.
- The project creates long-term cancers risks to the community. After the Line 6B rupture, a physician at the Battle Creek Veterans Affairs Hospital stated that he saw rare, exotic, and fast-acting cancers as a result.
- Specify who will pay for health care if populations suffer from health effects due to the project.
- Address the collective mental health concerns of the project including the morale of residents and tourists due to an accident. Time in nature is therapeutic and could suffer from the project.
- Evaluate violations of pipeline safety standards.
- Consider public health concerns related to Polychlorinated Biphenyls and Polycyclic Aromatic Hydrocarbons.
- Evaluate how a human health threat from the project would be assessed and addressed. The health of individuals at ground zero should be a top priority.
- Consider worker safety during construction and operations. The project creates a long-term hazard to personnel. Straight line V drilling at a tectonic plate is a risk for laborers in the up-shaft if there is flooding at the bottom of the V.
- Consider health effects among cleanup workers in case of a spill, using documented effects from past spill events.
- Consider confined space hazards for workers. What emergency warning devices, atmospheric testing equipment, rescue equipment, and personal protective equipment such as self-contained breathing apparatus will be available in the tunnel and at what distances? A self-contained breathing apparatus lasts a maximum of 60 minutes; hence a worker or a rescuer will not be able to walk very far before they run out of breathing air. What additional systems will be in place? How will injured or overcome workers be evacuated from the tunnel when there is only one opening until the TBM reaches the other end? What agencies will respond to a confined space emergency? Consider the equipment, training, and experience of planned emergency responders. What coordination will be done between the various agencies that may be involved in an emergency?
- If society does not reduce GHG emissions, there will be detrimental effects to human health and cause a public health crisis from climate change, including, but not limited to: heat-related illnesses and death; air quality illness; expansion of vector borne diseases; longer and more severe of allergy-related illness; increase in food and water-borne diseases; mental health impacts; disruption in medical supply chain and devastation of health care facilities; and exacerbation of pre-existing chronic illness.
- Evaluate health co-benefits of a "low carbon future" associated with the shutdown of Line 5. Decommissioning the pipeline would result in improved air and water

quality, saving lives and health care dollars, and have minimal environmental and climate risks.

- Evaluate health inequities of populations living closest to fossil fuel infrastructure.
- Who disproportionately bear the health risks of pipeline failure.
- Many Indigenous communities depend on fragile wetland ecosystems to grow life-sustaining crops vital to their health and economy, which would be put at risk.
- The infrastructure disruption of construction a tunnel for extractive purposes which places the global freshwater supply at risk.
- The people who bare the risk are not necessarily the people benefiting from the pipeline.
- Given the COVID-19 pandemic, the EIS should consider the increased potential risks to public health from the influx of workers in the region to complete the construction activities. Enbridge already employs many out-of-state workers in the area, who often travel back to their home states on weekends. This pattern increases the risk of infections in the area, and the potential strain on local health care facilities.
- The EIS should specify who gathered health data for the project, clarify if there is a health threat, and if there are long-term cancer risks for the community.
- The World Health Organization, along with nearly 200 other health organizations, including organizations from the US, Canada, Michigan, Wisconsin, and Minnesota, have signed onto a Fossil Fuel Non-Proliferation Treaty. USACE should consider including the initiative in the EIS.
- Analyze the immediate and cumulative public health impacts:
    - Constructing the proposed tunnel beneath the Straits.
    - Added greenhouse gas emissions from continued dependence on fossil fuels at a time when transitioning to non-carbon energy is essential to the health and well-being of all humans, in Great Lakes and beyond.
- Potential risk of tunnel explosion resulting in the release of methane and/or sulfur dioxide and compromising of freshwater supply. Methane, sulfoxides, and volatile organic compounds released from oil and gas operations contribute to the formation of smog, which causes asthma, neurological disease, reproductive harm, and premature death.

5.4.11 Comments on the Project Design

Comments suggested the following:

- This type of tunnel is experimental and has never been done before. Too much is unknown about boring, blasting, and tunneling impacts to natural resources and public health. Even Enbridge representatives admit that no other pipeline like this exists anywhere else in the world. Allowing an oil tunnel to be built in the Straits of Mackinac would be an unprecedented experiment that endangers the Great Lakes.

- Evaluate the material planned for the tunnel. Consider the permeability of the cement planned to be used. Concrete is strong, but not immortal.
- Concerns about the tunnel design. Enbridge changed the tunnel design to make it more economical, but it is more dangerous, which invalidates the original safety study.
- Project should have third-party monitoring, inspections, and audits of all Enbridge pipeline work and relevant activities. Such work should be financed by Enbridge.
- The design should feature automatic, computer-activated pipeline isolation valves.
- Consider how the new pipeline and system upgrades could lead to higher flows and heavier commodity flows through Line 5.
- Concerns about the “extreme” slope of the V-shaped tunnel design.
- Consider the pipeline installation methods planned for inside the tunnel including the construction method and position of the pipeline permanently installed inside tunnel.
- The proposed tunnel size and location does not allow access for maintenance and repair. Burying pipeline in lakebed would make maintenance difficult.
- Enbridge is paying for construction of the tunnel, but the costs will get placed on the end user.
- The 99-year contract for the tunnel requires use of the tunnel for 99 years resulting gin continued risks.
- Liderroll Pipeline Engineering Solutions sent Enbridge a 136-page letter with consulting content, at no cost to Enbridge, with several issues identified in the two presentations from the Michigan State Employees Association meeting on October 13, 2021. These issues include the use of a T-shaped concrete floor; proposed installation of pipeline on tunnel wall; the likelihood that there is a natural differential settlement between several pipeline support points, causing grave dents or cracks (damages) in the exact supports which will uphold the exponential loads; and the potential use of an inadequate Tunnel Service Vehicle. Based on the suggested changes in the Liderroll letter, Enbridge has already made changes, such as the use of rail; the elimination of a completely unsafe transport vehicle; and the disposal of the T-shaped precast concrete floors.
- Regarding the Dynamic Risk study commissioned by the state of Michigan, the risk assessment did not assess the risks associated with the “open annulus” design that Enbridge has proposed. The open annulus design comes with far greater risks, including tunnel collapse, water infiltration into the completed tunnel, and a much higher explosivity risk as the tunnel would contain a hazardous liquids pipeline, electricity, oxygen, and space for water to infiltrate.
- Once filled with oil, the pipeline will be fully pressurized and behave dynamically every day; be it in dilatation efforts, contraction, lateral, and vertical buckling. A poorly planned and or executed pipeline installation with non-adequate design,

construction, and installation errors can cause serious environmental consequences by oil leakage.

- Enbridge has sufficient resources to achieve a project of this scale.
- Tunnels are not a new technology. For example, there is an existing tunnel from Detroit to Windsor that does not have issues. The tunnel design is sophisticated and safe.
- In the future, the tunnel can be repurposed for other utilities.
- The tunnel design would contain a potential rupture of the pipeline.
- The EIS must also critically examine the long-term structural stability of the proposed tunnel. This analysis should be conducted by third-party experts with no current or prior relationship to the oil and gas industry. All data and modeling used in this analysis must be publicly available for independent review. In addition, the EIS should analyze all available tunnel construction techniques so that an assessment of the least environmentally damaging practical alternative can be made. Finally, tunnel stability in the event of an explosion must be part of the analysis.
- Consider that design of the project as not just the tunnel itself, but rather a complex system including the pipeline.
- Based on followings with the U.S. Securities and Exchange Commission and Enbridge investor communications, there is no evidence that the board of Enbridge has approved the tunnel.
- The history of underwater tunnels in Boston and Seattle tells us that such projects are never timely done, overruns are huge, there is adverse environmental damage, and it is much worse than pre-bill estimates.

5.4.12 Comments on the Project Construction

Comments suggested the following:

- The boring distances are inadequate.
- It will take too long to build the tunnel.
- There is risk of rupture of the existing Line 5 dual pipelines during construction.
- There is potential for damage to the structural integrity of the Mackinac Bridge from construction blasting in such close proximity.
- Construction feasibility for the tunnel was not included in the EGLE or MPSC reviews of this project.
- Consider the various chemical used during construction. Evaluate the water treatment additives used during construction including chemicals used, where and for what purpose each will be added, how they will be removed, spill prevention, etc. The USACE will need to determine the composition of the chemicals and additives and the risk posed by the use of all of the chemicals used for drilling.

- Consider the risk of explosion during construction. Such as the explosion risk from methane pockets during tunnel drilling. If drilling causes a sinkhole, caverns with natural gas storage could be encountered and result in an explosion.
- USACE should require that Enbridge identify the specific type of TBM proposed for the project and all risks of failure that may harm the environment. In addition, the scope of the EIS must consider the risks of the TBM and analyze the environmental impacts of the TBM failing beneath the Straits.
- Address the confined space hazards during construction.
- Evaluate the potential for frac-outs while tunneling under the Straits.
- Enbridge has proposed using a slurry-balanced TBM to complete this tunnel. Slurry-balanced TBMs are not optimal for mixed-face tunneling (tunneling through both bedrock and softer ground, like soil), which should be anticipated given the poor rock quality, lack of information about the complete hydrogeological profile of the tunnel, and high probability for water infiltration. A slurry-balanced TBM must be correctly pressurized to meet the pressure of the surrounding rock. An incorrectly pressurized slurry-balanced TBM could cause either a blow-in or blow-out. Slurry-balanced TBMs also commonly encounter tunneling issues and get stuck while in operation.
- The scope of the EIS must also analyze the environmental risks posed by bentonite slurry, a material that is used to stabilize the excavation and reduce groundwater inflow into the tunneling process. The bentonite slurry system is a "*closed loop*" system: Slurry is mixed in a treatment plan, cycled through the excavation face, and returned to the treatment plant where the spoils are separated out for disposal.
- The slurry will be injected at high pressure into the front chamber of the TBM to balance earth and water pressures, and the slurry circulation system carries the excavated material back to the surface. Because of the very high earth and water pressures that will be encountered under the Straits, the slurry will have to be injected at roughly the same pressure to prevent an uncontrolled inflow of rock, soil and water into the TBM and the tunnel. An uncontrolled over-excavation of solids (rock and sediments) can lead to the development of large voids and possibly large sinkholes above the tunnel which could seriously damage the existing Line 5 pipeline, especially the west leg which is closest to the proposed tunnel alignment. Over-pressurization of the bentonite slurry can lead to conditions where the slurry is displaced well beyond the immediate vicinity of the TBM and can breach through the bedrock and overlying sediments. In a worst-case scenario, the bentonite slurry would erupt through the lake bottom surface (mudline), possibly damaging an existing Line 5 pipeline, and be released into the water column and cover the bottom of the Straits which would be devastating to the environment and ecosystem.
- Bentonite slurry risks are also associated with the design, construction, and operation of on-land facilities to treat the bentonite mixture once it enters the treatment facility and/or maintained in storage tanks. The EIS must include a

review of the design, construction, and operation of the on-land facilities to ensure adequate containment and secondary containment capabilities. In the event the bentonite mixture leaked into the environment it could cause a catastrophic disaster on land, in the wetlands, and at the surface of the water.

- Detail potential abnormal situations, such as if the TBM gets stuck or breaks. Examples of the TBM Bertha stuck in Seattle, Washington for 4 years and City Hall in Milwaukee, Wisconsin. Enbridge has not provided a plan for how to remove a stuck TBM from the tunnel during construction. TBMs are not equipped with a reverse gear so evaluate how the TBM would be removed if an issue occurs. Would it be disassembled resulting in additional time and money. Who will pay for additional construction costs?
- TBMs are massive pieces of machinery that are typically constructed at the jobsite because they are so large, they cannot be transported via roadways or trains.
- In January 2021, EGLE approved Enbridge Energy's application for certain permits required to build a utility tunnel under the Straits of Mackinac.
- New technologies and materials make construction safer. The new technology that Enbridge proposes for this project will far surpass in means of safety, any other means of transportation available. The welding methodology was validated under representative conditions. Also, the weld inspection methods are validated. Pipelines and welds go through extensive testing including x-rays and pressure testing.
- Enbridge has committed to using skilled labor to build the safest pipelines possible. Teamsters Local 406 provides qualified labor that knows how to protect the environment.
- Sophisticated trenching machines can be employed to create a trench for the pipeline's path through lacustrine clays or glacial till overlying the lake floor bedrock. After the pipeline is laid, backfill can be carefully placed over the pipeline to serve as protective cover. A clay cover or some other type of low permeability membrane could be placed over the fill path to reduce the chance of significant petroleum release during a pipeline spill event.
- Risks associated with the potential release of drilling fluids must be analyzed in the EIS. Drilling fluids consist of a proprietary mix of compounds. The effects of these proprietary mixes cannot be fully analyzed without knowing their constituents. Therefore, the ACE should demand a list of the constituents and complete a thorough analysis of potential impacts to environmental and human health should any of these compounds be released.
- Consider the release of radon gas from construction and digging.

5.4.13 Comments on the Project Operations

Comments suggested the following:

- It is difficult to support the claims of long-term viability without comparable projects. There is a low amount of engineering research relating to offshore pipelines and tunnels.
- Concerns about transport of various product types through the pipeline, such as NGLs 20 percent of the time. Diluted bitumen transported in Line 5 is chemically and physically different from crude oil and it puts greater stress on pipeline during transport and operation.
- Concerns about the 99-year contract and plan to decommission the tunnel in 99 years.
- Address operational safety and emergency response measures including 24/7 monitoring with routine state and federal safety and performance assessments. Enbridge should have multiple skimmer boats with inflatable booms moored nearby with capability of being deployed immediately.
- The EIS must include specific project details including the lifespan of the tunnel and new pipeline, the exact materials and amounts that will be transported, the real and potential impacts to water, land, cultural resources, archeological sites, Tribal Treaty Rights and lifeways, and the Straits TCL, as determined eligible for listing for the purposes of the Section 106 review by USACE.
- USACE must obtain more information on Enbridge's proposed methods and procedures to be used to maintain the pipeline right-of-way. The NOI does not discuss the maintenance of permanent rights-of-way and contains no information regarding plans or methods to maintain those areas.
- The EIS must include analysis of the PHMSA identified risks associated with operating and maintaining a pipeline within a tunnel.
- Once completed, using funding entirely provided by Enbridge, the tunnel would be overseen over its lifespan by the independent Mackinac Straits Corridor Authority, adding a further layer of security and accountability to the operation.
- If the pipe is enlarged under the Straits, consider if that would put more pressure on the old line that nobody has ever mentioned about checking, repairing, investigating.

5.4.14 Comments on Greenhouse Gas Emissions and Climate Change

Comments suggested the following:

- The Line 5 Tunnel project contributes to global climate change.
- The U.S. is the second biggest emitter of CO_2 globally.
- Consider the existing global effects of climate change including droughts in the mid-western U.S., wildfires, changes in weather patterns, glaciers are retreating, snow cover is decreasing, ice sheets are melting, and increases in extreme

weather events. Broader climate change impacts are also crucial to consider, including effects on agricultural production, human physical and mental health, and ecosystem-wide impacts.

- Consider existing effects of climate change to local and regional communities. The Great Lakes area is already under stress due to climate change. Numerous reports detail impacts in the local area such as coastal erosion, warming of inland waterways, and more frequent and intense storms. The Midwest will be last livable place in the U.S. since the coasts are going underwater and the south is having heat waves. With the inland lakes, Michigan will be one of last few habitable places due to climate change.
- Climate scientists and the United Nations indicate we have only seven years to drastically cut our GHG emissions to keep our planet habitable.
- Climate change is a national priority. The DoD has reported climate change is a threat to national security. The Project does not align with the current administration's climate goals and is undermining the state of Michigan's climate goals. The President has issued two Executive Orders (E.O.) regarding climate change: E.O. 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*; and E.O. 14008, *Tackling the Climate Crisis at Home and Abroad*. Also consider how 40 CFR 1508.1 states to include "direct, indirect, and cumulative effects of project on climate change." The E.O. targets the U.S. to hit net zero GHGs by 2050. Michigan Governor Whitmer has plans for development of renewable energy sources in the state. The Project is detrimental to the goals of the Paris Agreement and makes it impossible for the U.S. to reach its net zero goals.
- Concerns about the project's contribution of GHG emissions. Commenters provided GHG emissions projections for the project including the following. Construction of the tunnel alone would result in 87,000 metric tons of CO_2-equivalent emissions. Operation of the tunnel would result in 520 metric tons of CO_2-equivalent annually. The tunnel would contribute the equivalent of 10 coal power plants per year in regional pollution. In addition, burning the fossil fuels transported by the pipeline would result in an estimated 27 million metric tons of CO_2 annually. Extending the lifespan of Line 5 would add an estimated 71 million metric tons per year of CO_2. The project would result in $41 billion in net climate impacts.
- Regarding the contribution to GHG emissions, consider the potency of those emissions on our fragile life support systems, the heat-trapping features of methane and CO_2 and their persistence in the atmosphere over months and years.
- Assess both the direct climate impacts from construction, but also the indirect climate impacts—the gross and net GHG emissions from upstream tar sands extraction, midstream transport and refining, and downstream consumption of the refined petroleum products from the crude oil.
- The climate impacts resulting from the project's GHG emissions should be described qualitatively.

- Use social cost of GHG estimates to disclose and consider the climate damages from net changes in direct and indirect emissions of CO_2 and other GHGs resulting from the proposed project.
- The analysis should also include a detailed discussion of the project's reasonably foreseeable direct and indirect GHG emissions in the context of compatibility with the Administration's and the USACE's climate plans and guidance as well as actions necessary to achieve Michigan's policies and GHG emission reduction goals over the anticipated project lifetime, including the U.S. 2030 Paris target and 2050 net-zero policy.
- The EIS should consider the potential impact of changing conditions caused by climate change (e.g., increased and exaggerated weather events) and how these events will affect the proposed Project.
- The USACE must conduct its own independent analysis of the long-term climate impacts from Enbridge 's total GHG and tunnel construction, as well as the operation and maintenance of a tunnel serving multiple purposes. The potential for some uses to malfunction could be at cross-purposes with other planned uses of the tunnel and must be cumulatively analyzed in this EIS before any commitment of irreversible and irretrievable resources is made which could result in a stranded asset.
- The Canadian government will not build refineries on their own territory because of the resulting pollution. Canada is projected to surpass its Paris Agreement goals. Line 5 minimizes Canada's use of other transportation methods for petroleum and refined products, paving the way for Canada to meet its goals of net zero oil and gas sector by 2050.
- The EIS should address the social cost of GHG metric currently used by the U.S. federal government. Given that fossil fuel extraction in the Alberta Tar Sands has an exceptionally high carbon impact, related to both the damage to the boreal forest as well as the extensive energy inputs of refining the tar sands, addressing the social cost of this carbon is imperative. Further compounding the social cost of tar sands extraction is the increasing cost of climate-related disasters in the U.S., which must also be considered in the EIS. The U.S. was hit by 20 separate billion-dollar disasters in 2021. Address how the project contributes to the increasing cost of climate-related disasters in the U.S.
- The U.S. Securities and Exchange Commission is proposing a rule on Climate Disclosures to protect investors and the economy.
- Describe changing climate conditions (i.e., temperatures, frequency and severity of storm events, variations in the water levels of the Great Lakes and corresponding erosion) and assess how such changes could impact the proposed project and the environmental impacts of the proposed project and alternatives. This would include the risks of pipeline exposure and damage, potentially increasing spill risks, as well as other project impacts that USACE determines could be affected by climate change. Pipelines along inland waterways are at particular risk of increased flood events and "*unplanned discharges of oil into*

waterways." Erosion along the Great Lakes may make the portions of the pipeline that go into and come out of the proposed tunnel on either side of the Straits more vulnerable.

- Enbridge should incorporate robust climate resilience and adaption considerations into (1) project design and engineering; (2) construction oversight; (3) emergency response planning; (4) commitments for protective measures related to stormwater and erosion; and (5) routine monitoring during operations. The EIS should describe how Enbridge has addressed such considerations and provide a rationale for any reasonable alternatives to enhance resilience that were not adopted or discussed in detail.
- Climate change is uniquely burdensome for the Tribal Nations because of its impact on Treaty-protected natural resources that are culturally and economically important to the Tribal Nations. GLIFWC climate change staff have conducted a vulnerability assessment of beings/species of particular interest to member Tribes, and the vulnerability assessment integrates Traditional Ecological Knowledge and Scientific Ecological Knowledge.
- Consideration on disproportionate impacts of climate change to Tribes and environmental justice communities. Climate change impacts plants and animals that are significant in Tribal cultures, ceremonies, medicines, diets, and economies. Climate change also creates more extreme weather events including flash floods which impact rural, low-laying Tribal communities. These same weather patterns cause more frequent power outages, which last longer in rural areas.
- Discuss how climate considerations could shape long term impacts/risks from the project to communities with Environmental Justice concerns and to Tribes with relevant Treaty and reserved rights.
- The MOU Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty Rights and Reserved Rights requires USACE to consider and account for the effects of its actions (such as permitting an oil pipeline) on habitats that support Treaty-protected rights and resources (such as the 1836 Treaty Territory), including via climate change.
- Identify practices Enbridge could take to reduce and mitigate GHG emissions; include commitments from Enbridge in the EIS and in permit conditions, if applicable. Work with Enbridge to consider practices in the enclosed Construction Emission Control Checklist.
- Climate Policy Program Director of the Stockholm Environment Institute, Peter Erickson, in written testimony to the MPSC on Enbridge's proposal to bury Line 5 under the Straits of Mackinac, said that shutting down Line 5 and transporting by rail or some other way could ultimately lead to fewer greenhouse gas emissions. "If the Line 5 pipeline did not re-start, global oil prices would increase and consumption and emissions would decrease," he stated. In fact, extending the lifespan of Enbridge Line 5 will add an estimated GHG Pollution of 71 million metric

tons annual CO2 (20-year global warming potentials IPCC AR5). The EIS should consider this in its analysis.

- Federal agencies considering permits for fossil fuel infrastructure have tried to avoid the issue by claiming that climate impacts are unforeseeable or trivial in the context of global emissions and climate change, by assuming "perfect substitution," i.e. that if permits are denied, the resources will simply come from somewhere else and therefore the net effect is zero, or that GHG analysis should be limited to construction and facility operation emissions, and not include the GHG impacts of the coal, oil, gas, or other fossil fuels involved. Those arguments have, for the most part, been rejected or discarded. In 2016, the CEQ issued Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (Memorandum from Christina Goldfuss, Chair, Council on Environmental Quality, to the Heads of Federal Departments and Agencies, Council on Environmental Quality at 11).
- Courts have now consistently rejected agency reliance on the "perfect substitution" assumption to avoid considering climate impacts (WildEarth Guardians v. BLM, 870 F.3d 1222 (10th Cir. 2017)). Those courts have recognized that federal approvals have market impacts on supply, demand, and price that can affect the quantity produced, transported, and consumed, and therefore cannot be presumed to have zero net effect. Over the past several years, the federal courts have more and more been willing to vacate EIS's for fossil fuel projects if upstream and downstream GHG estimates are not included (Food & Water Watch v. Federal Energy Regulatory Commission, 28 F.4th 277, 288 (D.C. Cir. 2022); Sierra Club v. Federal Energy Regulatory Commission (Sabal Trail), 867 F.3d 1357 (D.C. Cir. 2017)).
- The USACE needs to assess gross emissions to understand the broad impacts of the project. Last year, Peter Erickson, an expert retained by Michigan Climate Action Network and Environmental Law and Policy Center for the MPSC, estimated that construction would be associated with about 87,000 metric tons CO2-equivalent, and operation of the pipeline would result in about 520 metric tons of GHG emissions annually. The extraction, transport, refining, and consumption of the 450,000 bpd of crude oil and 90,000 bpd of NGLs Enbridge projects will run through the tunnel will be associated with about 87 million tons of CO2-equivalent annually. Compared to a No Action Alternative of shutting down the existing Line 5 pipeline, and not building the Tunnel, his estimate is that the increase in CO2-equivalent if the Tunnel is built will be approximately 27 million metric tons annually, because of the likely price, supply and demand impact of a possible $6 per barrel increase in transport costs. Multiplying those various figures by any reasonable social cost of GHG shows just how dramatic the impact will be, in a way that can both inform the USACE's decision making and let the public know what is at stake.
- Peter Howard, economics director at the Institute for Policy Integrity at New York University School of Law, testified that the emissions tied to the tunnel project

would generate approximately $1 billion in global social economic costs each year from 2027 to 2070, as well as "significant unmonetized climate effects and other unquantified pollution costs to human health and the environment."

- Line 5 helps lower GHG by supporting green power plants operating on natural gas, and lowers the levels of mercury in lakes and fish from burning coal.
- Job shortage is not the problem, it is a shortage of time, as demand for oil needs to be cut down quickly. Better community planning and better use of resources would reduce the need for the energy that we already produce.

5.4.15 Comments on Energy Needs and Marketing Conditions

Comments suggested the following:

- The Enbridge-prepared depreciation study states that this pipeline will be irrelevant in the future. Enbridge references several factors, considerations, and uncertainties which support the use of a December 31, 2040 truncation date including current and anticipated competition to the Enbridge Mainline, actions by state and local governments, and the uncertainty arising from the recent acceleration in the pace of federal (U.S. and Canada), state/provincial and local governments passing decarbonization legislation or adopting policies that may influence the mark demand for pipelines.
- The Depreciation Study clearly states multiple times that the Lakehead Pipeline System has an economic life lasting to December 31, 2040. One of the primary purposes of filing a Depreciation Study is to allow the pipeline operator a reasonable opportunity to recover their investments into the infrastructure before the infrastructure is retired. The whole premise for filing a Depreciation Study supports the fact that Enbridge has stated that the Lakehead Pipeline System will no longer be economically viable by 2041.
- If the project were to be approved, it is possible that the tunnel would not be completed until well into the 2030's potentially giving the tunnel an economical lifespan of 6 to 10 years. Adding to the troubling nature of this unacceptably short lifespan is that the objective of providing depreciation reports to the federal regulator is to allow petroleum companies to adjust the cost of its products in order to ensure profitability/ Enbridge has stated the goal of the depreciation policy and the establishment of oil depreciation rates is to provide the pipeline (operator) with a reasonable opportunity to recover its investment in property, plant and equipment.
- If the tunnel were to be permitted, the cost of petroleum products will increase. It would be prudent to consider the increased cost of petroleum products due to the construction of the tunnel versus the cost of petroleum products if Line 5 were to be shutdown. It is possible that constructing the tunnel will actually cost the consumers more than if Line 5 were to be retired.
- The potential short-term gains in market stability are not worth environmental risks.

- Statements that the shutdown of Line 5 would cause fuel shortages and price hikes are not true. Current capacity of Line 5 is about 540,000 barrels per day of Alberta crude oil products of which very little actually stays in Michigan. Well over 90 percent of that volume is received in Sarnia, Ontario for the Canadian market, or for export. We do not need oil from Canada going through the U.S. only to go back to Canada to be shipped overseas. An executive at MEG Energy (an Alberta company that currently uses Line 5 to move their heavy oil) said that the decommissioning of Line 5 would not have a negative impact on their capacity to move their petroleum products.
- Michigan's home state energy production is sufficient to provide secure, affordable, and reliable energy to drive our state's economy. A consumer of propane in the Upper Peninsula was notified by provider that they will be able to provide propane even without Line 5. According to State Commission, the Upper Peninsula has 86 realistic, potential sources for propane and are building storage capacity for future energy security in the Upper Peninsula.
- There are multiple sources of propane in the both the Upper Peninsula and Lower Peninsula. In addition to Line 5, propane is supplied to the Upper Peninsula, especially in the eastern Upper Peninsula from the NGL Supply Terminals facility in Kincheloe. It receives propane via direct rail car shipment from Edmonton, Alberta. In addition, some propane is supplied to the Upper Peninsula from other out-of-state sources including the Plains Midstream propane fractionator in Superior, Wisconsin. Other sources of supply for the Lower Peninsula include, but are not limited to, the Lambda Energy Resources natural gas processing plant in Kalkaska, the Marathon Oil Company Detroit refinery, and sources in neighboring states.
- A robust analysis needs to be performed on the potential community impacts from the tunnel project to address propane availability and security options, such as those developed by the state of Michigan's work group on propane energy security.
- There are conflicting interests involved in this project and pipeline. The Canadian government taking its lead from Enbridge which is putting corporate interests before that of commitments under the Boundary Waters Treaty of 1909.
- Line 5 provides low cost, reliable energy. Access to reliable energy is essential to everyday life. The proposed tunnel offers an opportunity to house other infrastructure to influence residents, businesses, and our economic prosperity as a whole.
- Closure of the pipeline would cause energy constraints in the Midwest. Line 5 provides energy to Northern Michigan and provides feedstock supply to many refineries in Michigan, Ohio, Pennsylvania, Ontario, and Quebec. According to the U.S. Energy Information Administration, the oil Line 5 sends to Detroit and Ohio refineries daily would produce about 66,614 barrels of gasoline, 36,677 barrels of diesel fuel, and about 8,035 barrels of jet fuel. Detroit and Ohio refineries served by Line 5 send about 23,000 barrels of jet fuel daily to Ontario by rail, according to a 2017 report from the U.S. Energy Information Administration. Not building the

project would compromise crude supply to 10 refineries in the region, directly affecting fuel prices. Rejecting this project would put at least 15 percent of northwest Ohio's fuel supply at risk. Line 5 crude oil reaches PBF Energy Toledo and BP-Husky Toledo and provides jet fuel to the Toledo area. Toledo Refining Company relies on Line 5 to produce 70 percent of jet fuel needed at Detroit Airport. The Toledo Refining Company contributes $5.4 billion annually to the regional economy, employs 1,200 people directly, and creates thousands of indirect jobs. Line 5 provides fuel for operating engineers and skilled workers.

- Line 5 provides 30 percent of the crude processed by Marathon Oil's Detroit facility. Line 5 is the exclusive source of NGLs to the fractionator in Rapid River, Michigan, which is the primary source of propane for heating in the Upper Peninsula of Michigan. Consider the community impacts to propane availability and security options such as those developed by the state of Michigan's Work Group on Propane Energy Security. The Upper Peninsula is isolated and low-income populations and retirees struggle with high prices of goods, gasoline, propane, and natural gas.
- Line 5 is a critical infrastructure element ensuring safe transportation of enough NGL to meet 65 percent of the Upper Peninsula's propane demand, including peak volumes in winter months that cannot be met with trucks or barges.
- Assuming no change in demand in the Upper Peninsula, it would take approximately 15 trucks per day, or 35 railcars a week, to replace all of the propane that currently runs through Line 5. In addition, Governor Whitmer's Upper Peninsula Energy Task Force Committee recommended policies both to improve the propane supply infrastructure (including possible state contracting for propane supplies) and to encourage alternative heat sources for current propane customers, such as modern electric heat pumps and air source heat pumps. To make a fair environmental assessment of any of these alternatives, or combination thereof, the USACE will need to estimate costs, economic feasibility, and market impacts. For example, if using an alternative will likely increase the costs of oil transportation for the refiners, USACE cannot just assume that current Line 5 refinery customers will continue to purchase 540,000 barrels per day. USACE should make its best efforts to predict those impacts, or a range of potential impacts, to make its assessment of environmental risks more useful.
- A 2017 Dynamic Risk Alternatives Analysis Study found that without Line 5 "propane users in the Upper Peninsula could face price increases in the range of 10- cents per-gallon to 25-cents per-gallon." A propane supply disruption during the 2013-2014 winter evidenced what this could look like, as it led to an average 86 percent spike in propane costs for families, moving the then Governor of Michigan to declare a "propane emergency." As Line 5 is also one of the largest customers for Upper Peninsula electric utilities, without it, electric costs would likely rise for many U.P. customers as well.
- Not replacing Line 5 would have severe adverse impacts in Canada. Since 1953, Canada has relied on Line 5 to transport vital fuels from producers in western Canada to users in central Canada (along with users in Michigan, Ohio, and

Pennsylvania). In central Canada, Toronto Pearson International Airport, Canada's largest airport, is heavily reliant on Line 5 for its jet fuel supplies. Line 5 supplies approximately 66 percent of Quebec's crude oil needs and about 50 percent of the feedstock used by Ontario's refineries to make gasoline and other fuels. Furthermore, it would severely disrupt the supply and increase the price consumers pay for fuel across Quebec and Ontario. Line 5 provides essential feedstock for the Sarnia-Lambton Petrochemical and Refining Complex in Ontario, which employs more than 4,900 people and indirectly generates an additional 23,500 jobs. In western Canada, the loss of Line 5 would have a devastating impact on the economy. In the context of an already full pipeline system, it would strand up to 400,000 barrels per day of oil originating from western Canada (much of it destined for the U.S.). Not building the Line 5 tunnel project would cause massive revenue losses and potentially significant job losses in the energy sector in western Canada.

- National security depends on energy and Line 5 provides essential energy security. Closure of Line 5 may force gas production overseas to countries with less responsible regulations. Consider Europe's energy crisis due to war. With Russian's invasion of Ukraine, the U.S.-Canada relationship has never been more critical to continental and global security. Rejecting the tunnel would challenge our relationship with Canada. The U.S.-Canada relationship is healthy and robust with a shared cross-border network of more than 70 oil and gas pipelines and 35 electricity transmission lines. It is risky to rely on other countries for energy imports given the geopolitically unreliable suppliers (e.g., the Russia-Ukraine conflict).
- Resources from the Upper Peninsula are critical to national growth. Lumber was used to build Chicago and Detroit. The industry needs Upper Peninsula's copper and iron ore. Now the most critical resource of all is fresh water.
- By-products from crude oil are used to make parts and components of everyday life such as gasoline, diesel fuel, and chemicals used in medicine, tires, cars, medical devices, clothing, and plastics in cell phone, computers, cars, etc.
- Sufficient infrastructure does not currently exist to support the necessary truck, rail, or barge traffic to replace the operational capacity provided by Line 5. The significant amounts of petroleum products reliably and safely transported by the Line 5 pipeline cannot possibly be carried by trucks over the Mackinac Bridge. Barge infrastructure at the Straits does not exist and would adversely impact vessel traffic transiting the Straits. Rail infrastructure between Enbridge's existing Straits facilities does not exist.
- The refineries currently served by Line 5 have considered and likely costed out any number of alternatives, or combination of alternatives, if Line 5 is shut down. If USACE's analysis concludes that these alternatives will be more expensive and will make Line 5's current refinery customers less competitive, that may in turn reduce the refineries' demand for crude oil, and thereby reduce any need for Line 5 or the Straits crossing. Likely market responses should be part of the analysis of each alternative considered in the EIS.

- Enbridge has no other current commitments to utilize the tunnel capacity and considering Line 5 is crucial to Canada mainline oil pipeline, this excess capacity can only be seen as reason for further expansion of Line 5 and transporting tar sands oil. Even with geopolitical tensions in Europe, this does not justify expansion of tar sands mining and refining.
- Evoking the 1977 Pipeline Transit Treaty sets a dangerous precedent for future of the planet. Take into account the full impact of the Canadian Government's interpretation of the 1977 Treaty. If the Line 5 shut-down order is not enforced because of the 1977 Treaty, it will give Enbridge a carte-blanche to ignore the U.S. federal government's sovereign ability to enforce environmental laws regulating oil infrastructure operating in the U.S.
- The USACE needs to determine whether current downstream consumers of refined petroleum products from the refineries served by Line 5 (or Michigan propane consumers) would be able to meet their energy needs through means other than refined petroleum products (or propane).
- The USACE needs to consider the competitiveness of the midstream refineries served by Line 5. The analysis should determine the impacts if their costs increase, (e.g., the survival of their business) the need to scale back production, or other suppliers of refined petroleum products elsewhere that will have lower costs and likely take market share during this interim period.
- Project funding should be used to improve our electrical grid for the future. Enbridge has not invested any money in the renewable energy sector.
- Industrialization of the Great Lakes region began in the early 1900s and has caused many harmful impacts that went unnoticed at the time due to general ignorance of environmental degradation by stakeholders in the region.
- The EIS should include a comprehensive third-party Needs Analysis to assess the purpose and need of the Proposed Action, including potential long-term economic impacts during the operational life of the tunnel. The NOI lacked any data regarding the short- and long-term needs for transportation of petroleum products via pipelines in general and the Line 5 pipeline more specifically. With the nation moving to a cleaner energy future, the question is raised, is the pipeline worth the risk to the public trust resource for the limited timeline we will be fossil fuel dependent? The EIS needs to address the projected fossil fuel-based energy needs in the U.S., as well as the need for transportation of petroleum and natural gas products through the state and region.
- Enbridge’s filing with the Federal Energy Regulatory Commission requesting permission to “truncate” the depreciation period to 20 years in recognition that “decarbonization” efforts by federal, state, provincial, and local governments “may influence market demand for pipelines” constitutes an explicit acknowledgment that long-term, demand-side reductions for oil will depress market demand for pipeline services.

- Consider the implications of federal (U.S. and Canada), state, and local governments passing decarbonization legislation or adopting policies that may influence the market demand for pipelines. The Individual Retirement Arrangements has just passed legislature has committed billions of dollars to transition houses, to heat pumps and electrify all the houses within the homes. Renewable clean energy is already at par with crude oil in certain cities and countries, and even parts of Puerto Rico. The nation is moving away from petrol chemicals. The demand for fossil fuels is decreasing and the need for a 99-year lease with the state of Michigan is unnecessary. Any attempt to prolong the fossil fuel habit delays the implementation of less polluting practices.
- Consider the global legislative prohibitions on the sale of light-duty vehicles utilizing gasoline and diesel fuels. Canada, and 27 countries in the European Union have committed to bans in the next 13 years. Reduced demand for transportation fuels will directly affect the future need for pipeline capacity. Many cities and metropolitan area have signed the C40 Fossil-Fuel Free Streets Declaration that mandates the use of electric buses by 2025 and prohibits the use of gasoline and diesel-powered vehicles within their jurisdictions by 2030. Cars could also be running on hemp.
- Petroleum industry economists, such as British Petroleum's chief economist, are warning that peak oil demand is near or may have already arrived, and are undertaking a restructuring of their business model to invest in zero-carbon energy sources. Major automobile industry manufacturers such as General Motors and Ford have committed to all-electric vehicle goals in the next few decades. Analysis by the world's 8th largest bank, BNP Paribas, indicates that "the economics of oil for gasoline and diesel vehicles versus wind-and solar-powered electric vehicles are now in relentless and irreversible decline, with far-reaching implications for both policymakers and the oil majors. The adoption of electric vehicles has already reduced oil demand by 1.5 millions of barrels of oil per day. According to Wood MacKenzie, if the U.S. were to attain a reduction in greenhouse gas emissions sufficient to meet the goal of stabilizing global temperature at or below 2 degrees Celsius, oil demand for transportation fuels would be reduced by 70 percent (35 million barrels per day).
- Ontario and Quebec, two main regions served by Line 5, do not need this pipeline to meet crude oil and natural gas needs. Line 78 has a greater capacity to recoup from a shortfall caused by Line 5 closure and many upgrades can be done to accommodate necessary product. An additional one to three rail trains a day would be needed.
- Substantial reduction in the use of transportation fuels will result from the trend, now accelerating, by governmental entities (e.g., California, New York) enacting prohibitions on the sale and use of vehicles with internal combustion engines.
- Governor Whitmer released a Michigan Propane Security Plan to ensure resilience without Line 5. It is a comprehensive five-step plan, many already underway, to ensure that Michigan residents who heat their homes with propane will have a secure energy supply when Line 5 shuts down. This includes optimizing and

enhancing propane storage capacity, reducing propane consumption through energy efficiency measures, and investments in rail infrastructure.

- According to Neil Earnest, an expert witness on behalf of Enbridge in a federal lawsuit against the Bad River Reservation, “the estimated impact of a Line 5 shutdown on Wisconsin and Michigan gasoline, jet fuel, and diesel prices in an increase of 0.5 cents per gallon.” The rebuttal studies further illustrate the myriad oil transport options that could be ready in short order, including utilization of existing capacity within the Lakehead pipeline system. Further studies conducted by Canadian energy experts on behalf of Environmental Defense show the impacts of a Line 5 shutdown to Canadian energy markets are overstated and could be mitigated through a planned decommissioning process.
- Line 5 carries about 540,000 barrels (22.7 million gallons) per day of product, consisting of about 432,000 barrels of crude oil and 108,000 barrels of NGLs, which include propane. Of those 432,000 barrels of oil, about 70 percent or 302,400 barrels — along with nearly all of the gas liquids — go straight through Michigan and across the St. Clair River to Sarnia, Ontario, Enbridge confirmed. Only about 129,600 barrels of crude oil daily is piped to refineries in Detroit and northern Ohio. For each barrel of crude oil that enters a refinery, only about 86 percent is converted into transportation fuels.
- The renewable energy market is futile. Even if U.S. shifts towards clean energy and away from gasoline, other continents and countries are still driving gas vehicles. If they do not get gas from the U.S., they will get gas from other markets where refineries are not as clean and regulated.
- There is no reliable alternative for heat or good alternative for a combustion engine. State-level representatives have not had concrete answers for how they will replace fuel and natural gas and propane transportation to the Upper Peninsula.
- Look at the Bakken oil boom from 2010 to 2015 as an example for relying on rail and truck to transport oil. There were high energy costs due to high rail and trucking fees, and no pipeline. Oil and refining is not just gasoline and jet fuel, it is medical supplies, electronics, clothing, hand sanitizer, and other everyday items.

5.4.16 Comments on Cumulative Impacts

Comments suggested the following:

- Energy and pipeline companies purposely segment projects so that regulators only consider a portion of potential environmental effects. The USACE should not treat Enbridge's multiple pending Line 5 proposals as separately segmented reviews, but as a whole system. To consider only a portion of pipeline at a time when it can only function as a whole is folly and allows potential impacts to be dissected to levels considered "minor". Since Line 5 needs systematic upgrades to keep operating for another 99 years, the project should not be segmented and evaluated in isolation from operation of the entire pipeline. The segments do not and will not exist in isolation and the cumulative impacts must be considered.

- Provide information on: (1) how long a pipeline built in 1953 is expected to safely function; (2) which portions of Line 5 have already been replaced, and why; (3) which portions are planned to be replaced or not, why, and when.
- Discuss expected changes to the structural integrity of the 1953 pipeline over time.
- Construction of a new, larger pipeline contained within a tunnel implies a commitment to the indefinite, long-term operation of Line 5. The replacement of the pipeline into the Tunnel would expand the life of one stretch of the Line 5 pipeline but fails to address the many other weaknesses along the entirety of the pipeline. The need for upgrades to and rebuilds of the rest of 70-year-old portions of Line 5 may be causally connected and necessary for the proposed tunnel to remain in operation. The EIS should discuss these other projects that may be permitted for Enbridge in the future after the tunnel is built and consider the cumulative impacts of these projects to avoid historical piecemealing of projects.
- The cumulative and indirect effects of the EIS must be thoroughly explored for each alternative including but not limited to the impact of vibrations, noise, traffic, dust, light, operational effects (e.g., seepage), viewsheds to cultural resources, archaeological sites, waters, ecosystems, and landscapes. Also, the indirect and cumulative affects analysis area must be sufficient to adequately study and model these effects. The loss of access to land and waters and disruption to the ability to exercise cultural lifeways and Treaty rights resulting from each alternative should be described in the EIS.
- The continued operation of the entire Line 5 is not only “related” to the Line 5 Tunnel Project; it is dependent on it (40 CFR 1508.4, 1508.25). Connected actions should be discussed in the same impact statement (40 CFR 1501.9(e)(1)).
- Ensure that the EIS discusses reasonably foreseeable projects along other portions of the Line 5 pipeline that would be undertaken only if this proposed project is permitted. This includes other actions along Line 5 that require federal approval, including the Line 5 Segment Relocation Project that is being considered by special use permits currently and/or imminently pending before the U.S. National Forest. The project is dependent on the approval of the proposed Relocation Project and the reauthorization of multiple Forest Service special use permits.
- Evaluate Line 5 beyond just the Straits including other proposed Line 5 projects (e.g., the Wisconsin Line 5 re-route) and how Line 5 connects to other pipelines and locations. Without the other proposed Line 5 projects and the Tunnel, Enbridge cannot continue operating the pipeline. Since increased flow through the pipeline would involve the entire line, the EIS must consider potential impacts to the regions along the entire Line 5 route. There is an indirect increased risk to pipeline leaks along the entire route of Line 5 pipeline. If sections of Line 5 fall outside of USACE jurisdiction, then the project should halt for lack of regulatory oversight until a solution is created.
- Evaluate the impacts of the Enbridge Wisconsin Line 5 re-route/re-location project. It would cause erosion and sedimentation. Impacts would occur to the Bad River

Watershed, the Kakagon Sloughs, and a wetland of international importance with wild rice beds. Wisconsin Department of Natural Resource's Preliminary EIS for Line 5 re-route was incomplete and inaccurate.

- Evaluate the upstream impacts of drilling oil, downstream impacts of refining it, the total impact of keeping the pipeline operational including building new infrastructure versus moving petroleum products utilizing the existing Enbridge pipeline network or other transport options, such as trains or trucks, which would limit the consequences of any accidents due to a smaller amount of spilled petroleum.
- The EIS should evaluate the effects of tar sands mining and refining. Line 5 will transport diluted tar sands bitumen or synthetic oil made from tar sands. Oil sands emissions are 4 to 5 times greater than emissions attributable to the production of conventional oil and continued use is disastrous to the planet. The refining of oil and NGLs from Line 5 includes significant GHG impacts and public health and environmental justice impacts borne by communities bordering the refineries should be considered in the EIS. Account for the unfunded cost of dealing with the toxic waste of tar sands mining. The project as proposed feeds the oil industry and constitutes a blank-check endorsement of the mining and refining of Canadian tar sands. Pipeline capacity is currently the only constraint on tar sands oil production. Consider how tar sands in Alberta will eventually dry up. We need to phase out tar sand oil/ bitumen products by 2030. The project does not solve the larger problem of decreasing oil reserves.
- Recognizing that Albertan oil sands have the highest cost of production and will be the first to be curtailed with future reduced demand, seven international oil companies – Statoil, Koch Industries, Imperial Oil, ConocoPhillips, ExxonMobil, Marathon, and Royal Dutch Shell – have divested their interests in Albertan oil sands and will not need Enbridge's future pipeline services. Canada's carbon tax will further weaken market prospects for crude oil derived from oil sands over the near term. The current carbon tax of $50 (Canadian dollars) per ton will reach $170 per ton by 2030, adding $25 per barrel to the cost of Albertan crude. Alberta's challenge to the imposition of the carbon tax failed as the Canadian Constitutional Court upheld the imposition of the tax.
- Scope should include current expected and future potential effects of (1) total volume and rate of growth of tar sands mining, (2) the types of mining and refining methods used and their impact on Canadian boreal forests, (3) on the total volume of GHG emissions in CO_2-equivalent terms and by specific gasses, (4) on the volume of mining tailings and their toxic content and effect, (5) the effect of these combined factors on climate risks, (6) the resulting impact on Indigenous peoples living in mining regions, (7) the effect on persons living in North America, and (8) the effects on the world.
- The U.S. District Court of Appeals for the D.C. Circuit has held that an analysis of the "downstream" emissions impacts of a pipeline is required if the downstream emissions are "reasonably foreseeable." USACE should heed the suggestion of

the D.C. Circuit that an EIS determine where oil and gas running through Line 5 is extracted from and the potential downstream impacts.

- Line 5 has already lived beyond its projected 50-year lifespan, causing local damage. Consider the effects of aging fossil fuel infrastructure and the effects of new fossil fuel infrastructure, especially on Indian Tribes located near the Great Lakes. A credible analysis of cumulative impacts should also consider the resulting social and public health costs associated with the increased GHG emissions from extending the lifespan of this pipeline.
- The world's fossil fuel assets could become worthless by 2036, with financial analysts warning of an $11 trillion fossil fuel asset crash causing a 2008-style financial crisis. This must be included in the analysis of climate impacts and/or cumulative impacts. Studies have shown Line 5 could well become a stranded asset by 2041, less than 15 years past its projected completion date. Evaluate the demand projections for the oil that Enbridge proposes to transport through the new segment resulting from the Project. Demand for transportation from western Canada may fall in the coming months and years because of a decline in overall market demand and because of energy conservation measures, growth in renewable energy capacity, and/or economic downturn. The Project would be committing to another two to three generations influenced by Line 5. If oil markets collapse in next 10 to 20 years, the stranded tunnel would become a maintenance burden, further compromising the Straits.
- Include a clear discussion of the relationship between short-term environmental uses and longer-term environmental health and productivity is essential.
- The USACE needs to determine how energy needs are likely to change over time, as the U.S. and Canada transition away from fossil fuels.
- Examine the potential social, economic, eco-justice, and human health effects due to a potential aquifer breach, the effects of transient workforce including "man camps" and their connection with missing and murdered Indigenous women, increased traffic and other demands on local infrastructure, and disruption of fishing access.
- Michigan does not benefit from project but assumes all risk. About 80 percent of crude oil gets sold to China to manufacture plastic which fuels the climate crisis. Line 5 starts in Superior, Wisconsin and crosses northern Wisconsin and includes Douglas County, Bayfield County, Ashland County, Bad River Indian Reservation, Iron County, up to the Upper Peninsula of Michigan, crossing near the Mackinac Bridge and turning southward to Port Huron, Michigan and ending in Sarnia, Canada. Whether it is the 12 miles proposed of Line 5 that cuts right through the Bad River Band of the Lake Superior Tribe of Chippewa Indians, or the proposed reroute of 41 miles of its existing pipeline with a new segment through Ashland, Bayfield and Iron Counties, any spill would be devastating to the area. Regardless of its scope, the EIS must consider all indirect and cumulative impacts and avoid segmentation of other pending proposals to modify Line 5, including, but not limited to, the proposed reroute of Line 5 through northern Wisconsin. Allowing Enbridge to improperly segment could prevent a thorough review of the cumulative impacts

and potential environmental and climate damages of an unnecessary pipeline expansion through a critical and fragile ecosystem.

- Michigan has an opportunity to grow and be a major player in the green energy industry, but existing infrastructure using fossil fuels, and available energy, is necessary to do that. To advance green energy technology and make it more affordable, people need to have heated homes and schools that function properly, and supplies that are affordable which are often made using fossil fuels. Having a functioning society that can solve the problems of tomorrow requires having buildings, and available and affordable energy. Without necessary resources, there will be no progress.
- The analysis of cumulative impacts should be a complete and thorough examination of direct and indirect potential effects on ecosystem integrity, aquatic life, human health, and social and economic costs.
- The EIS should consider the operational life extension of a nearly 70-year-old pipeline (with a 50-year life expectancy) that would result from the completion of the proposed tunnel project. Construction of the tunnel would extend the life of the pipeline and demand that other reconstruction or improvements along additional segments of the existing line be undertaken. The cumulative impacts of the tunnel and the concomitant impacts of the additional oil transport infrastructure and replacement projects must be taken into consideration.
- Economic impacts of fossil fuel infrastructure include the expectation that they will become stranded assets. Projections that half the world's fossil fuel assets could become worthless by 2036, with financial analysts warning of an $11 trillion fossil fuel asset crash causing a 2008-style financial crisis must be included in the analysis of climate impacts and/or with cumulative impacts. Studies have shown Line 5 could well become a stranded asset by 2041, less than 15 years past its projected completion date.
- Evaluate how the tunnel project would impact the remainder of the pipeline infrastructure, which crosses nearly 400 water bodies in Michigan, many of which are tributaries to Lakes Michigan and Huron or are Waters of the U.S. U.S. Coast Guard personnel and emergency managers both point to the stretch of the pipeline along U.S. Highway 2 near Lake Michigan's northern shore as their worst-case scenario. Concerns revolve around a combination of less robust technology such as pipeline wall thickness and monitoring equipment, as well as higher vulnerability to an errant strike and potential access problems for containment and cleanup equipment, in addition to difficult terrain and environment for cleanup activities.
- The proposed 'temporary disturbance area' is not temporary. The impacts will last forever.

5.4.17 Comments on the Air Quality

Comments suggested the following:

- Concern regarding air quality and dust suppression. If USACE must approve the application, methods to minimize impacts to air quality in the biological assessment

should be included and regulated in the permit. USACE should require regular monitoring of air quality to ensure these methods are in proper operation.

- Consider the local CO_2 outputs due to using truck and train transport which utilizes and expands existing infrastructure which can be cross-utilized for other freight transport. These risks seem more acceptable given the expected long-term decrease in demand for fossil fuels and expected continuing need for overland transportation.
- For all project alternatives analyzed in the EIS, disclose all sources of air pollution and quantify annual anticipated (1) construction and (2) operational air emissions. Rely on general emission factors for construction equipment that Enbridge will use. Include emissions from burning of cleared materials, if applicable, and material hauling. Also include emissions from electricity used by the TBM and GHGs from materials such as cement and steel used to construct the tunnel. This information is needed to understand the extent and nature of anticipated air pollution.
- For action alternatives, consider, quantify, and analyze potential air quality impacts from both expected maintenance activities and also for responses to spills/major incidents.
- Disclose the anticipated duration (in months, days, etc.) of construction air quality impacts.
- Include commitments from Enbridge to use specific practices to lower construction emissions, including those listed in the enclosed Construction Emissions Control Checklist.
- Provide a quantitative estimate of the amount of nitrogen that would be released during commissioning of the new pipeline and decommissioning of the dual pipelines. Discuss opportunities to avoid or minimize releases.
- Consideration of construction-related dust and its impacts on adjacent biota.
- The release of gases or other pollutants in the event of an explosion during operation.

5.4.18 Comments on the Biological Resources (Vegetation, Wildlife, Aquatic Resources, T&E Species)

Comments suggested the following:

- Impacts to species must be part of the EIS analysis as direct, indirect, and cumulative effects. Impacts to be addressed in the EIS are those from construction and operation of the project and alternatives, including impacts to species that have occurred or will occur during pre-construction work such as the archaeological surveys that Enbridge is carrying out.
- The scope of the EIS cannot be limited to endangered and threatened species. Impacts to species that members of Tribal Nations fish, harvest, hunt, or have other cultural, spiritual, or economic relationships with are also direct, indirect, and cumulative impacts of this project and will be an important consideration for the

EIS. These species include, but are by no means limited to, lake whitefish, walleye, sturgeon, loons, sugar maple, northern white cedar, wild rice, wild cranberry, migratory birds, deer, moose, and wolves.

- Development and land clearing, such as would occur during project construction, create opportunities for invasive species to move in and compromise the ability of other native species to grow and these environmental effects should be addressed within the EIS.
- Oil is toxic to aquatic and terrestrial organisms. Freshwater fish, an important piece of this ecosystem and a major source of income for subsistence fishers, are seriously affected by oil releases. Fish can be affected through a variety of pathways across life stages. Effects of oil spills on fish include fish mortality, a decline in abundance and diversity of fish, and fish consumption advisories affecting the ability of community members to fish for consumption. While dead fish may be observed immediately after the spill, sublethal effects have been observed two months following a spill, while increases in fish deformities have been observed two years after a spill.
- Inventories of fisheries and wildlife communities within and adjacent to the Line 5 corridor should be conducted early in the EIS process to establish the existing condition and so that any resources at risk can be considered in the EIS. Establishing baseline biological inventory data is also critical to analyzing the impacts of construction and risk of spills. These inventories should include fisheries and biotic integrity analyses for all stream crossings. Freshwater mussel surveys are needed in all stream crossing locations.
- The area supports a vast and seemingly endless nexus to living organisms of many forms ranging from simple to complex, including but not limited to fish and other aquatic species, riparian, benthic, avian, plant and animal of both aquatic and terrestrial types, and of course human life. The area includes multiple islands, endless miles of shoreline, various marshes, and Lakes Michigan and Huron which must be studied with particular attention, given their unique ecological and cultural roles in the region. Wildlife is important for observation and enjoyment, scientific study, hunting and fishing, etc.
- Consider the sensitive, fragile, and diverse ecosystem in the area. Concerns about impacts to biodiversity, habitats, endangered ecosystems (fish or wildlife), the benthic environment, Beaver Island Archipelago (habitat and coastlines), migratory birds (federally endangered piping plover), lake sturgeon, pollinators (monarch butterfly), wetland insects (Hine's emerald dragonfly), and the complex forests that provide medicines.
- The Project is within the migratory route of many species of birds as they cross the Straits on both northerly and southerly migrations. The shape of the lower peninsula with the tip of the Mitt (of Michigan) funnels birds to the shortest distance across to the upper peninsula which is the Straits. The Straits of Mackinac are also continentally important for waterbird migration, with tens to hundreds of thousands of individuals passing through the area each spring and fall. These species include types of waterfowl, grebes, loons, and cormorants. Waterbirds, including waterfowl

game species, provide ecosystem services that directly or indirectly benefit humans. These include provisioning (e.g., meat, feathers, eggs), cultural services for western and indigenous societies, and as predators, herbivores, and vectors of seeds and nutrients. Many of these migrating birds rest and feed in large numbers in the Straits near the Mackinac Bridge and the Line 5 pipeline area. In addition, over 50,000 raptors, including Bald and Golden Eagles migrate over the Straits region each year, hunting and scavenging during their passage.

- The Great Lakes ecosystem is already threatened by industrial pollution, invasive species, agricultural runoff, coastal development, and climate change. Consider the destruction of boreal forests in the U.S. and Canada. The proposed project and potential spills would worsen these conditions. Impact could be significant considering the already shrinking area of wilderness (wetlands, sand dunes, and forests). Address the impacts to the surrounding airshed, and the broader expanse of the ecosystems and ranges of animals present in the proposed Project area.
- Fishing grounds could be covered by silt-laden water moved due to currents during construction. Fish would be decimated by bentonite drilling slurry.
- In the event of a spill due to any kind of failure of the pipeline during construction, maintenance, and operation, the effects on the regional ecosystem, aquatic and shoreline flora and fauna could be catastrophic. The EIS should include a thorough analysis of the potential impacts on the aquatic and shoreline resources. All levels of the aquatic food chain would be impacted by any kind of a spill from Line 5, from plankton, aquatic insects to fish eating birds and mammals. Bentonite coats fish gills and results in large fish kills. Determine if there are any criminal penalties for killing off species.
- The USACE has yet to perform an adequate Endangered Species Act (ESA) consultation. The most recent draft Biological Assessment (BA) for this project, dated July 9, 2021, is inadequate to satisfy the ESA or NEPA; it must be revised and completed before the USACE initiate formal consultation with the USFWS.
- The draft BA takes an inappropriately narrow view of the project activities and makes a false assumption that all activities will go as planned by omitting any discussion of the risks of an oil spill, pipeline or tunnel explosion, overtopping or other failure of stormwater ponds, or any other project risks.
- The draft BA is artificially narrow and should not be used to determine the geographic scope for species reviewed as part of the EIS. The draft BA is based on an "*Action Area*" of tunnel construction and 100-foot buffer. But a properly defined action area is "*not merely the immediate area involved in the action.*" The action area should include "*waterbodies that may be impacted by the project*," including the Straits and Great Lakes basin.
- The discussion of piping plovers is inadequate. After noting that there is suitable plover habitat within and near to Enbridge's preferred Action Area, the draft BA notes that "*eBird data indicate no records within or immediately adjacent to the Action Area.*" Relying only on eBird data to determine whether plovers will be

impacted and only looking at records "*within or immediately adjacent to the Action Area*" is insufficient.

- The discussion of the endangered northern long-eared bat is inadequate. Enbridge conducted a bat survey in 2021; however, USFWS revised bat survey guidelines in March 2022 which now include species-specific guidelines for the northern long-eared bat.
- Utilize the USFWS's project planning tool (IPAC – Information for Planning and Conservation) to determine all federally listed endangered or threatened species that may be, or are, present within the boundaries of all project alternatives.
- Ensure that the EIS contains the assessments and conclusions from the USFWS, the Michigan Department of Natural Resources, and the Michigan Natural Features Inventory (MNFI) regarding the potential for impacts to state and federally-listed species that would result from each project alternative.
- Summarize USACE and Enbridge's coordination with USFWS and Michigan Department of Natural Resources (MDNR)/MNFI related to listed species and include any correspondence from the agencies related to threatened, endangered, and candidate species in an appendix. Disclosing USFWS's, MDNR's and MNFI's recommendations and findings would clarify the scope of impacts. This includes quantifying and disclosing the amount of incidental and direct take regarding ESA-listed and resident species due to the impacts of this proposed project.
- Include commitments by Enbridge to adhere to all USFWS and MDNR recommendations to protect species, including, but not limited to, seasonal restrictions on tree clearing and in-water work.
- Include evaluations for state listed fish stocks of concern.
- Investigate the presence of numerous bat species that are listed as endangered and potential disturbance of grey wolf habitat within this environment.
- Require use of pollinator-promoting plants and/or native plant seed mixtures for restoration of disturbed areas associated with project construction activities.
- Identify ecologically sensitive areas in or near the pipeline corridor so that those areas can be avoided, or appropriate protective measures can be implemented. Some species and ecological systems are more sensitive than others to ground disturbance during construction or to oil spills. Those species and systems need to be identified. The draft BA noted that dwarf lake iris and Houghton's goldenrod were found within coastal fen, limestone bedrock glade, and limestone cobble shore and that 8.3 acres of these natural community types would be cleared. The impacts of this clearing must be addressed in the EIS.
- Identify direct, indirect, and cumulative impacts to the rare natural community types. Natural community types that will be affected include but are not limited to, limestone bedrock glade (alvar glade), coastal fen, limestone cobble shore, wooded dune and swale complex, and rich conifer swamp.

- There is high likelihood of the spread of invasive species through both the construction process and maintenance of the rights-of-way to allow continued pipeline access. Both construction and maintenance activities in and along the pipeline will fragment wetlands and plant communities and risk an increase in invasive species spread from lake to lake.
- Detail the potential impacts on aquatic life (direct and indirect through changes in water quality or other disturbances to habitat). Concerns about the fish populations (Asian Carp, Red crawfish, croppy), fisheries, fish hatcheries, and the Lake Michigan and Huron reefs. The reefs in the Straits make up 60 percent of the lower lakes fish breeding grounds, according to environmental experts with the Sault Tribe of Chippewa. Losing that fishery would be catastrophic.
- Concerns about impact to commercial fishery in the region (Lake white fish, smelt, walleye, and perch) due to the project. Commercial fishing has been declining for many decades due to over-fishing, water pollution by human-caused toxic wastes, habitat destruction, and the introduction of invasive species.
- Evaluate the potential effects that heavy machinery noise, lights, and blasting could have on the habitat of both migrating and nesting species. Address how will the impact on wildlife be monitored before, during, and after the tunnel project.
- Consider potential impacts during construction vibration, such as disruption to fish migration patterns, ability to fish as food source, and tremors/small earthquakes could disrupt water species and hurt Tribes and their economy.
- Determine if there any studies about impacts on wildlife and fish species due to past spills (e.g., 2010 Kalamazoo, 1991 Grand Rapids MN, Exxon Valdez spill).
- Concerns about potential impacts to sensitive plant species. Evaluate the irreparable damage that will happen to plant life due to the proposed project including within the project area and along the whole pipeline.
- Lake Michigan, as well as the other Great Lakes are home to various and unique wetlands, marshes, dunes, and beaches. The difficulty and likelihood of success of plant revegetation and relocation efforts along the proposed project area should be considered. Specifically, relocation proposed for threatened and endangered (T&E) plant species. Certain plants such as Dwarf Lake Iris and Houghton's Goldenrod grow every year. Picking and transplanting them results in them dying and not growing back in the proper way. The same is true for leeks. If you pull out a leek as a bulb it will never grow back in the same spot again. Many species in Michigan are like this.
- The EIS should consider, in coordination with GLIFWC and the Anishinaabe people, other Treaty-protected plants and Tribal medicines that may be impacted. Also consider impacts to wild rice fields.
- Even 1 mile of roadwork will significantly change the area and disrupt/destroy large areas of seasonal wildflowers that attract pollinators and other fauna.

- The EIS should consider the potential success of proposed restoration methods, such as restoration to the native oak prairie, re-wilding, tree-planting, and sustainable extraction. Billions of dollars have been spent in restoration work; with every $1 spent on restoration they have seen $3-$4 in return on investment.
- The Government of Canada supports the project as a way to further enhance the protection of the Great Lakes, in line with the Great Lakes Protection Initiative Program, to target the prevention of toxic and nuisance algae, reducing harmful chemicals, and improving the health of coastal wetlands.
- The proposed project is in conflict with federal law, given the Great Lakes Restoration Act Section 1268 (c) (2) species "antidegradation policies," in which waters shall not be lowered in quality unless it is determined that such lowering will not become injurious to livestock, wild animals, or plants or their growth or propagation, and will not destroy or impair the value of game, fish, and wildlife. Guidance shall specify numerical limits on pollutants in ambient Great Lakes waters to protect human health, aquatic life, and wildlife, and shall provide guidance to the Great Lakes states on minimum water quality standards, antidegradation policies, and implementation procedures for the Great Lakes System.
- Based on a 2019 survey, approximately 3,777 Houghton's goldenrod plants and 7,757 dwarf lake iris plants will be impacted by the project. This was not the right time to conduct surveys of either plant because of high water, but either or both of these plants are probably capable of persisting as rhizomes even though they may not produce abundant above-ground or above-water vegetation for easy identification. In its sterile state, dwarf lake iris resembles *Tofieldia glutinosa*, so it could be misidentified when partially submerged unless rhizomes were dug, which is not recommended for T&E species. Assess if the 2019 survey for T&E species was appropriate due to high water conditions, and if the mitigation plan of relocating only 50 percent of the plants is sufficient or can be improved.
- Enbridge proposes to relocate only 50 percent of dwarf lake iris and Houghton's goldenrod plants to mitigate the loss. This is not mitigating to the "extent possible" and is insufficient given the importance and status of the species.
- Evaluate impacts of the project on other T&E species, notably the Hungerford's crawling water beetle found on Black River. Line 5 crosses a tributary to the Black River. This area is considered to be an unusually sensitive environmental area under 49 CFR 195.6, as it is an area containing a critically imperiled species and is a multi-species assemblage area. This tiny aquatic beetle is one of Michigan's rarest species, designated as a critically imperiled species, G1, on The Nature Conservancy's Global Conservation Status Rank.

5.4.19 Comments on the Environmental Justice

Comments suggested the following:

- The EIS must consider the environmental justice implications for all residents near and around the project area. Residents both in Michigan and on the islands may

not be able to move to avoid the whole range of potential harms and impacts outlined in these and other comments. These reasons could include economic, health, and other limitations.

- The EIS must evaluate health inequities of populations closest to fossil fuel infrastructure since they disproportionately bear the health risks of pipeline failure and infrastructure disruption of construction putting water supply at risk.
- To accomplish E.O. 12898 and E.O. 13985, the USACE must reach out to overburdened communities impacted by Enbridge's dismal safety record of unauthorized discharges, leaks, spills, and aquifer breaches.
- E.O. 14008, "Tackling the Climate Crisis at Home and Abroad," directs federal agencies to promote environmental justice by "[d]eveloping programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."
- E.O. 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis," recognizes the importance of ensuring access to clean air and water, limiting exposure to dangerous chemicals and pesticides, and holding polluters accountable.
- The government must hold polluters accountable, including those who disproportionately harm communities of color and low-income communities.
- The proposed project would uniquely impact Native Americans with Treaty and reserved rights or cultural resources in the project area. The impacts of construction, operation, and maintenance of the proposed project would impact Tribal residents and may provide project benefits that would only accrue elsewhere.
- USACE should promote environmental justice through enhancing its public participation processes and evaluating the disproportionate impacts of the Line 5 tunnel project. As explained by CEQ, "[t]he participation of diverse groups in the scoping process is necessary for full consideration of the potential environmental impacts of a proposed agency action and any alternatives." Specifically to Tribes, the EIS should consider a full range of the potential environmental justice impacts including, but not limited to, the following:
    - Threats to Tribal fisheries.
    - Impairment of Tribal members' ability to harvest natural resources for food, medicine, and ceremony along the route of the pipeline.
    - Harm to resources of cultural, economic, and spiritual importance to Tribes.
    - Frustration of spiritual activities such as ceremonies in and around the Straits.
    - Social, economic, and health impacts for Tribal communities.
- This project further exacerbating the historic oppression of Tribes. Indigenous and impoverished communities would be most at-risk from project. Potential harms to

the Great Lakes area and the Tribes of the Anishinaabe people Treaty reserved rights must also be considered through the lens of environmental justice. The ongoing danger this project presents to the waters, animals, vegetation, and natural and cultural resources for the Anishinaabe people, puts them and other citizens ecologically, economically, nutritionally, culturally, and spiritually at risk of harm.

- The EIS should evaluate the project's potential role in murdered and missing Indigenous women and girls. The project creates human trafficking concerns. There are cases of sex trafficking have been linked to the camps that house pipeline construction workers. Aggravated assault goes up by 70 percent, homicide, manslaughter, rape, sexual assault, robbery and aggravated assault increase by at least 30 percent, violent sedition by strangers increases by 53 percent and women experience a 54 percent increase in unlawful sexual contact. As Tribes, the state, and the federal government have all recognized the murdered and missing Indigenous women and girls epidemic and prioritized taking action to address it, the EIS should consider how the project might affect and contradict these governmental priorities.
- Concerns about "man camps" which house temporary employees and crime that is associated with them. There are great threats of safety to Indigenous women at the hands of pipeline workers (examples of Line 3 and Anishinaabe members going missing, with some pipeline workers being arrested for harming members of the Fond du Lac Reservation). Address the impact of violence perpetrated by workers based not only on previously documented cases but also as an investigation as part of the EIS, inviting testimony from Anishinaabe and Dakota inhabitants.
- Potentially destructive infrastructure has been placed where Indigenous people have lived for thousands of years for benefit of corporations. Indigenous people will not reap any benefits from pipeline but instead the negative impacts of more disease, poverty, and displacement.
- The EIS must account for the impact on Indigenous Nations in Canada and North America.
- There is historic violation of human rights of Tribal citizens including genocide, reservations, poverty, "Indian" schools, stripping of culture, etc.
- Consider the impacts of using the Precautionary Principle and the framework as described in the Fox Decision to study the environmental and social impacts. The Precautionary Principle requires taking preventive action in the face of uncertainty. The Precautionary Principle shifts the burden of proof to Enbridge to prove that Line 5 would never compromise U.S. Treaty obligations.
- Indigenous people have fundamental human rights that are being ignored. The Ethics of Person affirms that persons are special, precious, and have a dignity that demands respect. No one is to be reduced to a mere means to others' ends. Social relations require fairness, justice, and equality. Human and civil rights are essential too: they secure the space in which each person is recognized and can flourish.

- Segmentation of permitting is a tactic that deploys as environmental racism.
- The increased cost of energy will increase environmental justice populations. Cost of living increases for low-income populations will be significant, as these people cannot afford any increase of energy cost to heat their homes, cook their food, or heat their water for showers.

5.4.20 Comments on the Geological Resources

Comments suggested the following:

- The geotechnical studies are inadequate and do not meet industry standards. They only cover 10 percent of the industry standard required research for a tunnel of this kind. The geotechnical report does not make any recommendations because the report authors do not have enough information to take legal liability for their work.
- The geotechnical studies include insufficient sediment and rock borings. According to the drilling logs, core samples were taken every 900 feet. The recommended spacing for the adverse conditions (identified in the geotechnical data report by the same drilling company) is 100 to 200 feet for hard rock tunnels and 50 to 100 feet for mixed face tunnels. The closest spacing is 300 feet apart and the maximum spacing between borings approached 1,800 feet or nine times (900 percent) farther than recommended. Only 10 borings reached the proposed tunnel depth, resulting in an average spacing of approximately 2,100 feet.
- The boring data does not support the claim that tunnel will be entirely through bedrock. The USACE should require that sufficient boring data be collected by Enbridge before submitting a Draft EIS and provide that data to the public for review and comment. Analysis of the rock coring logs and the rock core photographs reveals extremely poor rock quality. The bedrock is described as “fractured” more than 700 times and “extremely fractured” 366 times in the geotechnical data report. The bedrock is described as “extremely weathered” or “highly weathered” more than 200 times in the geotechnical data report. Based upon the Rock Classification Systems for Engineering Purposes (ASTM STP984-EB984), more than 75 percent of the rock cores collected beneath the Straits have “Very Poor” or “Poor” rock quality. The scope of the EIS must address the risks of tunneling through poor rock conditions and the environmental impacts that may result.
- USACE must thoroughly review the complex geological hydrological conditions that exist in the Straits that could preclude the feasibility of safely building a tunnel in this location. The Straits were formed at the end of the last ice age when melting glaciers created what we now know as the Great Lakes. This unknown poses a risk to the Straits as, it is critical during the design of open water tunnels that engineers consider the nature of the ground, or geology, along the alignment, the limitations of the site investigation program in characterizing the ground, and the anticipated range of ground behavior under the proposed excavation technique. One short section of tunnel where a geologic condition was not identified, or not prepared for, can result in a costly and potentially disastrous situation.

- USACE should require that sufficient boring data be collected by Enbridge, and provide that data to the public for comment, before continuing forward with the EIS process. Specifically, to better understand and analyze the risks associated with Enbridge's open water tunnel design, USACE should require that sufficient geological data on the Straits is collected, and that Enbridge produce a comprehensive Geotechnical Baseline Report so that it—and members of the public—can analyze the geology of the Straits and risk of environmental impacts during tunneling during the EIS process. Although Enbridge prepared a Geotechnical Data Report, the data within the 3,000-page report, which was lacking in many respects, does not include conclusions, recommendations, or interpretations of the findings. As a result, it is largely inaccessible for public review.
- The aquifer test report confirms that the drilling medium is highly fractured and is closer to the porosity of sand than it is to bedrock. This means that a large amount of water infiltration into the tunnel during construction could be anticipated. There is limited research involving methane in groundwater above reportable limits, which is an explosion risk during construction.
- The project area has unconsolidated sediment, poor quality bedrock with fault zones, and Karst topography with sinkholes, saves, and voids in the bedrock). The drilling substrate is not pure bedrock, but a complex and challenging array of different mediums and geological features. Concerns about tunnel collapse due to unconsolidated soils and the fragility of boring through lime sediment. Salt caverns stretch miles across Michigan. Address what would happen if a sinkhole were encountered during drilling, and it connects to a cavern. It would drain the Great Lakes. Address impacts to subterranean salt caves, like the one storing fracked gas near St. Mary, including analysis of where every cavern is located and its makeup.
- Consider the potential for slumping, erosion, sedimentation, and general instability of the Clayey Till, Silty and Clayey Lacustrine deposits, Dune Sands, and Silurian Dolomite that is present in and around the proposed project area. The likely response of these soils to construction impacts and the potential for ongoing damage of these soils around the pipeline should be included in the EIS. The EIS should also assess what techniques are needed to prevent erosion or slumping of these soil types, prevent growth of nick points within and downstream of the project area, and to protect aquatic habitats from sediment.
- Earthquakes occur in Michigan. Over time the Earth is not stationary. Pressure changes and rock compositions change over hundreds of years. Drilling vibration could cause future earthquakes, especially since drilling through bedrock would last for 5 to 7 years. Address how an earthquake would affect a tunnel, the Mackinac Bridge, and the Great Lakes and how they would be repaired in the event of seismic activity.
- The rock that Enbridge is talking about is not solid bedrock. That is shells that have accumulated over millions of years. When they start drilling towards the sand over on the south side of the Straits of Mackinac, they run the risk of sinkholes. Build

this tunnel right underneath the existing Line 5, which could cause a sinkhole, which could break Line 5. Building the tunnel under the existing Line 5 is a potential double disaster due to geology and vibration during the drilling process.

- There are existing examples of other pipelines traversing through geologically unstable areas, for example the natural gas pipeline under the Straits that has been operational since 1957.
- The bottom of the Straits is not flat but rather, it is hilly. Initial installation of pipelines in 1953 involved dredged trenches through the tops of hills so that as the pipes passed over the hills and across the valleys would not be bent more than a 1,700-foot radius and so that unsupported spans would be no more than 75 feet. Over the years, the lake bottom has washed away in places and some of the unsupported spans have grown to be much more than 75 feet, and the weight of the pipes has bent them downward resulting in increased bending over the hills and across the valleys. Enbridge has put in a number of pipe supports, but these supports do not correct the excessive bending, nor do they prevent lateral bending of the long-unsupported spans. Eventually, the bending combined with the loss of strength because of internal abrasion and external corrosion will result in a rupture, spilling millions of gallons of oil into our Great Lakes.

5.4.21 Comments on the Land Use

Comments suggested the following:

- The Great Lakes and the surrounding areas are known for tourism and recreation including kayaking, fishing, swimming, canoeing, walking on beach, sailing, other sports, camping, etc. Address the potential impacts the project would have on the local tourism and recreation.
- The Straits is a busy shipping channel and ship passageway of strategic importance. It provides shipping of raw materials and products economically to the rest of the world through their connection with the St. Lawrence Seaway. Consider the potential impacts of a spill on the Great Lakes ship traffic and associated costs. For example, if a spill occurs, shipping will be significantly disrupted and possibly re-routed altogether during cleanup efforts. Safety of travel for watercraft could be affected, both commercial and recreational.
- Address the potential impacts to nearby farms.
- Investigate Enbridge's questionable land acquisition practices to obtain land for the proposed project.

5.4.22 Comments on the Mitigation

Comments suggested the following:

- Enbridge profits should be used for mitigation efforts.
- Consider mitigation measures such as the use of double walls with nitrogen or air in the void, arranged to detect leaks of either wall to decrease risk. Also, periodic

placement of automatic isolation valves such that ruptures cause closure of the valve to limit leakage. Wildlife underpasses should be built where useful.

- Study to ensure that cleaning pipeline inspection gauges are also capable of fault detection duty.
- The EIS must address Enbridge's poor track record of spills, ruptures, and equipment failures, most notably that the permit application fails to demonstrate that Enbridge has a mitigation plan for spill mitigation in the event of a rupture during ice cover or during a storm event. Mitigation efforts in winter would be long, costly and they would be incapable.
- The quality control procedures for weld strength, pipeline adequacy, and corrosion resistance should be established by evidence and not by the procurement department.
- Address how Enbridge will check for crack growth and corrosion in the pre-cast concrete.
- Evaluate how the project alternatives would avoid or minimize impacts to Tribal hunting, fishing, and gathering, consistent with Tribal Treaty and reserved rights. Explore whether Tribal representatives have ideas or suggestions to avoid, minimize, or mitigate temporary and permanent impacts to Tribal Treaty and reserved rights and TCR. Include all findings and Enbridge's protective commitments in the EIS.
- Invite impacted Tribes and the GLIFWC to advise USACE and Enbridge on natural and cultural resource management and monitoring considerations during and after the NEPA process. This should include government-to-government consultation, consistent with the December 2021 MOU Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty Rights and Reserved Rights, to which the DoD is a signatory.
- The Tunnel Agreement between the state of Michigan and various Enbridge entities called for the maintenance of liability insurance until the dual pipelines are decommissioned, Enbridge entities involved in the proposed project either did not exist at the time or did not exist in their present form. Cleanup and remediation of an oil spill requires a lot of time and money. The EIS should describe, in detail, the types of financial assurance that Enbridge has or can be required to provide to ensure that the public is not burdened with cleanup and remediation costs. This should include measures to mitigate and remediate the impacts to cultural resources in the event of an oil leakage from the existing Line 5 dual pipeline as well as incorporating actual and perceived damages that the Tribal commercial fishery would suffer from releases of oil, drilling sludge, and any other pipeline related material

5.4.23 Comments on the Noise and Vibration

Comments suggested the following:

- Discuss the potential for vibrations from the drilling operation to adversely impact the Mackinac Bridge, nearby structures, foundations of homes, foundations of the bridge, historical and cultural sites, the existing pipeline, underground water systems, migration patterns, and aquatic life within the Straits. Drilling running nonstop for years will have an effect.
- Concern that vibrations from drilling will adversely affect all living beings for a decade. We need to understand the predictable impacts, as well as recognize that there may be unanticipated long-term impacts such as to the fertility of various species.
- Address the potential environmental and cultural impacts to the capped "Lake Inferior" which could be impacted by vibrations and a potential explosion.
- Concerned about vibration impacts to the sediment and ground of Straits where it is holding plant species.
- Address the potential impact of drilling vibration on wildlife who depend on sound for their existence. Sound travels eight times further in the water than the air.
- Noise will cause fish to leave the area.
- Disclose the anticipated maximum noise level at the project site.
- Analyze temporary and long-term (i.e., maintenance) noise impacts for all noise-sensitive receptors. Include residences, areas where cultural events or Tribal gatherings occur, schools, day care centers, senior housing, community centers, and medical facilities, as well as noise disruptions to the exercise of Tribal treaty and reserved rights. Disclose and compare noise impacts at specific noise sensitive locations for all project alternatives.
- Include maps with noise contours to delineate the anticipated temporary and long-term noise impacts for all project alternatives. Indicate all sensitive receptors that may be impacted.
- Describe the types of maintenance activities that would generate noise and well as the anticipated noise level and duration.
- Describe what measures will be made to ensure the impacts from noise will be mitigated. Including request that Enbridge work with Tribes and other stakeholders to (1) time maintenance activities to minimize disruption to cultural events, and (2) provide people who would be impacted with appropriate advance notification and a phone number to report concerns.
- Ensure third-party analysis of the potential effects of noise relating from the proposed project area on nearby historic properties and cultural landscapes, particularly those that are currently actively utilized (e.g., Headlands Dark Sky Park, McGulpin Point Lighthouse, the waters of the Straits, established National

Historic Landmarks, and National Register of Historic Places listed or eligible sites, and local historic districts).

- Ensure third-party analysis of traffic and noise along the transportation routes to fill disposal sites. Particular attention should be paid to where these routes intersect with National Register of Historic Places eligible or listed sites, as well as established National Historic Landmarks.
- Ensure that the planned Ethnographic study will assess how noise may impact traditional use of the Straits as a cultural landscape and possible TCP.

5.4.24 Comments on the Regulations

Comments suggested the following:

- Enbridge is operating Line 5 without valid easement and with eight known violations. They are in violation of the Bad River Band of Chippewa Indians' eviction in Wisconsin. Enbridge is acting illegally and the USACE and other state/federal agencies must consider legal and financial accountability and criminal enforcement.
- The judge in Bad River Band case will not submit an injunction because the continued existence of Line 5 is seen as a greater need to society than Tribal rights.
- Concerns about the inability of state of Michigan to regulate a transboundary pollution scenario.
- Concerns about no responsible party since the state/federal government, and tunnel authorities could allow the tunnel to proceed without a large bond and environmental insurance.
- Has the USACE ever denied a permit for some type of infrastructure or to an oil company? And if so, what were the reasons for that denial? And then when the company found out that they were denied a permit as a result of an environmental impact study, what was the result of that?
- There is a federal Treaty in place for the international pipeline and other environmental permits for the Tunnel have been issued from Michigan EGLE.
- On January 29, 2021, EGLE issued Permit No. MI0060278 to Enbridge, authorizing Enbridge to discharge wastewater under the National Pollutant Discharge Elimination System from the proposed tunnel project to Lake Michigan. This permit took effect on February 1, 2021 and expires on October 1, 2025. On the same date, EGLE also issued a draft permit for countersignature pursuant to Part 303, Wetlands Protection, and Part 325, Great Lakes Submerged Lands, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, allowing Enbridge to work within protected wetlands to facilitate tunnel construction.
- USACE stated that the project will be evaluated based on the "public interest," "energy needs," the "needs and welfare of the people," and a variety of environmental concerns. The state of Michigan has already taken action against

Enbridge for violating Michigan's Public Trust Doctrine. This threat was made clear when Enbridge refused to share the full extent of damage to Line 5 with the state of Michigan. Tribes have repeatedly shown that the Line 5 Tunnel and current operation of Line 5 threaten the well-being of our communities, our sovereignty, and all our relatives that rely on water for life. This is as true for those of us alive today as it is for the next seven generations. The EIS should assess if, and if determine to be how, the Line 5 Tunnel is in the public interest. Such an explanation should also explain how the corresponding attack on Tribal Sovereignty is in the public interest.

- The U.S. Constitution states that "Treaties ... shall be the supreme law of the land." Tribes have a responsibility to steward these lands and waters and act as a good relative, which the L5 Tunnel threatens. The U.S. of America signed treaties with Tribes to seek recognition as a Sovereign and later as cession agreements. These treaties, which contributed to the formation of the U.S. of America as it is known today should supersede agreements made later. Canada has invoked 1977 Transit Pipeline Agreement (hereafter “1977 Agreement") to keep Line 5 operating in the Straits and in the Bad River Watershed. The EIS should examine the implications of the U.S. prioritizing the 1977 Agreement over treaties with Sovereign Tribal Nations. This should include how Tribal Sovereignty, Treaty Rights, and Nation-to-Nation relations would be impacted by such a decision. The EIS should assess how upholding Tribal sovereignty is in the public interest. This assessment should consider President Biden's commitment to prioritizing "Tribal sovereignty and self-governance, commitment to fulfilling federal trust and treaty responsibilities to Tribal Nations" as well as the U.S. 2019 reaffirmation of United Nation Declaration on the Rights of Indigenous Peoples.
- The defeat of legal efforts to shut down the dual pipelines is a foreseeable outcome, given legal outcomes to date. Michigan’s law authorizing the Tunnel Agreement was found constitutional. Although the Attorney General had issued an opinion stating that the Michigan law regarding the tunnel was unconstitutional, no state court judge who heard the resulting case agreed. In June 2020, the Michigan Court of Appeals unanimously affirmed the Michigan Court of Claims’ decision finding the statute creating the Mackinac Straits Corridor Authority and the associated agreement with Michigan regarding construction of the tunnel to be constitutional. Enbridge Energy, LP v. State, 957 N.W.2d 53; 332 Mich. App. 540 (2020). That ruling is final and binding.
- A temporary restraining order was dissolved, and the case settled, after PHMSA determined that the dual pipelines meet federal safety requirements. In June of 2020, the Attorney General briefly prevailed in an attempt to shut down the dual pipelines, when a Michigan court issued a temporary restraining order following allegations of significant damage to a pipeline support (Case No. 19-474). That order was lifted and a preliminary injunction motion was denied soon after, following statements from the U.S. Department of Transportation PHMSA that the dual pipelines met federal safety standards (echoing a report PHMSA had made on May 12, 2016, Enbridge Mackinac Straits In-line Inspection Review).

- The Governor abandoned enforcement of her shutdown order rather than defend its legality. On November 13, 2020, Governor Whitmer issued an order purporting to revoke and terminate the 1953 easement for Enbridge to operate the dual pipelines, and the state of Michigan filed a complaint in state court seeking declaratory and injunctive relief. (Michigan v. Enbridge Energy, LP, No. 20-646-CE (Mich. 30th Cir. Ct.)). Enbridge, which did not comply with an order it believed to be a violation of federal and international treaty law, removed the case to federal court. In November of 2021, the U.S. District Court for the Western District of Michigan denied the state of Michigan's motion to remand the case to state court, finding the case involves disputed and substantial federal issues.
- Enbridge's case against the state's shutdown order is pending in federal court. Enbridge pursued its own case against the state that argued the Governor's shutdown order was illegal. On August 18, 2022, the U.S. District Court for the Western District of Michigan, over the state's objections, decided the case belonged in federal court due to the importance of the federal and international issues involved. (Nessel v. Enbridge Energy, LP, et al., No. 1:21-cv-1057 (W.D. Mich. Aug. 18, 2022)).
- The timeline of the legal actions gives a strong indication that the tunnel is likely to be built, until or unless the USACE denies Enbridge the requested permit to build the tunnel. The desired outcome of the state of Michigan (as reflected in state statute as well as the agreements) is to discontinue usage of the dual pipelines in favor of a pipeline in a tunnel. This goes toward a finding of public need for the project, even if alternatives are alleged to exist. See North Plains Residential Council, Inc. v Surface Transportation. Bd., 668 F3d 1067, 1094 (CA 9, 2011).
- Act 359 the Michigan Legislature recognized that Line 5 is in the best interest of the state, and the tunnel is the most logical.

5.4.25 Comments on the Socioeconomics

Comments suggested the following:

- The project will benefit Canada and does not benefit Michigan. Line 5 serves 90 percent of Canada, and therefore, Canadians should take responsibility for building secure pipelines.
- Analyze the number of temporary and long-term jobs the project will create. Detail the duration of the jobs and labor source (Michigan residents, out of state, union labor).
- In 2021, Enbridge paid approximately $66.5 million in property tax for their pipelines and related facilities in Michigan. Property taxes are significant to local municipalities, particularly in Northern Michigan and the Upper Peninsula. However, what is provided in property taxes is hardly comparable to the $1.9 billion dollar cost estimate should a spill occur in the Straits. Conduct a cost-benefit analysis that includes the cost estimate of a spill in the Straits, as well as economic strain on local communities from the influx of workers on infrastructure such as law enforcement and human services.

- The tunnel project does not provide that many long-term or union jobs. Most jobs associated with the project would be temporary jobs, to which people would travel across the state and international borders. Pipefitters and Union jobs are needed to work on water infrastructure since there are many lead pipes that need to be replaced. Skilled workers and union jobs can learn new skills in wind and solar. There is no guarantee that unions will be employed to construct the tunnel.
- Enbridge is not a significant employer in the state of Michigan. The project will not bring a significant number of jobs to Northern Michigan either. According to Enbridge, during the construction stage of the project, it is estimated that between 1.8 million and 2 million hours of labor will be required—with an estimated average workforce of 200 to 255, an estimated peak workforce of 300 to 325. It is important to note that a portion of the estimated 200 jobs will be highly specialized individuals from outside of the area to perform focused, technical skills such as operation of the TBM. These types of jobs will not be afforded to local community members, nor union members in the region.
- The economic benefits of the project are overstated. According to the Dynamic Risk Study in 2017, while tunnel construction would create 1,763 temporary jobs, the shutdown of Line 5 would create 2,200 jobs which shows that decommissioning and removing the pipeline would create jobs. The jobs would include 1,000 directly, and another 1,200 indirectly from the indirect spending on materials and services by supply contractors to the project, and induced spending by employees of the project and its suppliers. Total employment earnings associated with operations are in the order of $104 million for all of Michigan. Total output from the abandonment construction expense would be $362 million, for a total value added of some $190 million. Detailed results show that the corridor counties could account for as many as 1,400 of the total 2,200 (full- and part-time) jobs, and for as much as $69 million of the total employment earnings. Include a comparison of job creation of the proposed project to the current jobs provided by the Great Lakes.
- Decommissioning Line 5 could be done with minimal price impacts and no shortages. Any increased cost to the U.S. caused by closing Line 5 would be compensated by the preservation of Great Lakes. In 2020, the Michigan state court ordered partial shutdown of Line 5 for 82 days and there was no impact to gasoline prices.
- An accident/spill would irreparably affect the waters, coastal areas, and connected watersheds of the nearby residents and business owners. The Great Lakes support more than 1.3 million jobs that generate $82 billion in wages annually. The three national parks and three national lakeshores located in coastal counties attracted approximately 6.5 million visitors in 2018. An accident/spill would hurt Great Lakes tourism which is one of the top three revenue sources of the state of Michigan. Also, hunting and fishing are economic drivers for the state. Sport fishing within the Great Lakes Basin contributes $4 billion to the economy. Fishing and farming livelihoods would be greatly impacted by a spill. About 65 million pounds of fish are harvested each year from the Great Lakes contributing more than $1

billion to the Great Lakes economy. Over 1.8 million recreational anglers enjoyed fishing the Great Lakes and spent nearly $2.2 billion on trip and equipment expenditures in 2016. In 2018, there were more than 4 million registered recreation vessels and 3.8 million paddle sports participants in the region. Great Lakes tourists are primarily domestic, and 75 percent of them take day trips for particular activities, such as festivals and outdoor recreation.

- Residents and businesses are not insured against the potential harm to the Great Lakes. Cleanup costs would fall largely on the state of Michigan if and when there is a spill. The citizens and taxpayers of Michigan will end up paying for maintenance and infrastructure remediation. Michigan State estimates damages would be close to $6 billion, with economic impacts $45 billion, not including loss of plant and animal life and ecosystem services. The jobs impacted by an oil spill far outweigh the jobs created to build a new pipeline. Apart from tax revenue, the costs and benefits of the project need to be evaluated by looking at impairments to recreational activity, clean-up and mitigation of spills, damage to wetlands, groundwater, cultural resources, and Lake Superior and Michigan water resources.
- The project could impact personal property rights and values including coastal property values, such as the Les Cheneaux Islands and all properties.
- Consider project funding should be financed privately and not via tax-payer dollars. Project funding via the state violates Article 5.2 of the Tunnel Agreement. Evaluate Enbridge insurance and bonding including the consequences and financially responsible party for a failed or incomplete project. Enbridge should be responsible financially for the construction and operation of the tunnel, holding the state harmless, such that Enbridge provide the state with financial assurances, not including self-insurance, that would cover cleanup of a release into the Straits. The state of Michigan requested a written agreement from Enbridge to assume the indemnity and additional financial assurance obligations of its U.S. Subsidiaries under the 1953 Easement and the Agreements. To date, this has not occurred.
- American Risk Management Resources Network found that Enbridge is not subject to the indemnity obligation or the financial assurance commitments under either the 1953 Easement or the Agreements negotiated with the Snyder Administration. based on its review of available financial information, the U.S. Subsidiaries do not have $1.878 billion in liquid assets, credit facilities and insurance to cover losses and damages arising from a rupture of Line 5.
- Line 5 is important to the livelihood of the Michigan people. Michigan residents struggle with paying bills due to lack of jobs. Low-cost energy is essential to quality of life in Canada and Midwest. The Upper Peninsula is isolated and low-income populations and retirees struggle with high prices of goods, gasoline, propane, and natural gas and shutdown of Line 5 would be detrimental to people living below the poverty line.
- Stopping the project and closing Line 5 would cause inflation. It would cost families and small businesses an extra $1.8 to $2.2 billion for gas and diesel each year.

- Shut down of Line 5 would increase gas and propane prices. Jet fuel refineries rely on Line 5 transport of product. Pipeline transport of the products is the most cost-effective method. A recent study by the Consumer Energy Alliance estimates that a Line 5 closure would result in Midwestern families and businesses spending at least $5.8 billion more per year on transportation fuels, or $29.2 billion more over five years, due to the resulting loss of production at area refineries. Increased fuel costs to the region includes Michigan, Ohio, Indiana, and Pennsylvania. Also, refinery-generated by-products and feedstocks go to the petrochemical industry to produce the products that make modern life possible (everything from medicine, make-up, building supplies, electronics, and clothing). Michigan is the 6th highest producer of the petrochemicals necessary for these products, and Ohio is the 3rd largest.
- Shutting down Line 5 would close propane terminals in Superior, Wisconsin, Rapid River, Michigan, and St. Clair, Michigan.
- The Line 5 tunnel will create jobs. Enbridge pledged to hire local and Indigenous workers for the project. And an Enbridge construction contractor has committed to ensuring Indigenous peoples comprise at least 10 percent of the total staff-hours worked. Economic Impact Analysis for Planning (IMPLAN) estimates that for every one refinery job, 16 jobs are induced. Not building project would impact more than 47,000 direct and indirect jobs, many union jobs, and millions of dollars of personal income. There is an economic benefit of the temporary jobs that the construction itself will create and the tax revenue to the state from those jobs. Temporary jobs and pipeline work provide wages and healthcare insurance benefits to construction workers and are essential to the project's completion. The project would provide subcontracting opportunities for local businesses, including lodging, fuel, food, and other ancillary services.
- Employees would work under union-negotiated collective bargaining agreements providing for high wages and fringe benefits, which would be spent in local communities. Workers who relocate to perform work would spend a significant portion of earnings locally, providing significant economic stimulus to communities through business and tax revenue.
- Enbridge has invested in Michigan's communities with donations to numerous nonprofit organizations. Millions of dollars in property tax payments for its energy infrastructure projects, are then invested in county and city schools, roads, and bridges. About $55 million dollars goes to the state of Michigan from Enbridge’s property taxes.
- The Mackinaw City Public Schools relies on business and non-homestead taxes for school funding and Enbridge accounts for 20 percent of the yearly revenue of the Mackinaw City Public Schools.
- Concerns about the economic impacts to Canada if Line 5 is shut down. There would be massive revenue loss and thousands of direct jobs (building and construction trades for maintaining current pipeline at pumping and service stations; operating, maintaining, and repairing heavy equipment; ensuring

instruments, valves, gauges, pumps, and motors operate daily; annual inspections and repairs; inspecting structural components for problems like corrosion/dents/cracks) and indirect jobs (servicing heavy industry Line 5 supports).

- Line 5 provides a connection of the Lower Peninsula and Upper Peninsula, and to one of our best trading partners, Canada. Rejecting the tunnel would challenge our relationship with Canada.
- The Upper Peninsula is forever tied the tourism from the Great Lakes, but it lacks the stable growth due to reliance on high-cost energy. People in the Upper Peninsula live in arctic conditions. Without Line 5, people would freeze and pay a lot for gas.
- States such as California that have pushed for GHG goals and reducing fossil fuels are experiencing lowered standards of living stemming from the need to reduce use of basic utilities.

5.4.26 Comments on the Soils

Comments suggested the following:

- Address the potential for coastal subsidence from groundwater pumping.
- The risk analysis plan should address the types of soils (e.g., silt and clay) related to potential tunnel failure.
- The lake bottom is not sand, it is red clay. The lake bottom has washed away in places, causing unsupported spans to grow to more than 75 feet. The weight of pipes has bent them downward, resulting in increased bending over hills and across valleys. The weight of pipes is about 55 pounds per linear foot without the added weight of the zebra mussels.

5.4.27 Comments on the Visual/Aesthetics

Comments suggested the following:

- Concerns about the visual impacts to the shorelines and the unique water-land interface of the Straits.
- Concerns about the view from Castle Rock. Water and forest lands with very little human interference will be replaced by construction equipment, stormwater ponds, or sub-stations which is disappointing to nature-lovers.
- Construction activities and both temporary and permanent facilities for the proposed tunnel will be operational day and night. Because of this, light pollution is a serious concern for Headlands Dark Sky Park, which was certified as an International Dark Sky Park in 2011. Light pollution is also potentially a concern for traditional uses of the Straits as an apparent cultural landscape and TCP, as well as the ability to exercise Tribal Treaty rights.

5.4.28 Comments on the Wetlands

Comments suggested the following:

- Concerns about the potential impacts and damages to wetlands. The Enbridge permit application provides insufficient information about its plan to disturb sensitive coastal wetlands.
- Across the Great Lakes, an estimated two-thirds of coastal wetlands have been dredged, drained, or converted to other uses since pre-settlement times. The remaining coastal wetlands are considered some of the most valuable ecological areas in the Great Lakes, and the proposed site is one of the most pristine, according to the Great Lakes Coastal Wetland Monitoring Program. They provide critical habitat for fish and wildlife, erosion control, water quality protection, and recreational opportunities.
- Inventory and characterize the wetlands that would be impacted during construction, maintenance, and operation of the pipeline. Include types of wetlands, acreages, their condition and functions, GPS locations, and conversion of types (e.g., forested wetland to sedge meadow or scrub-shrub).
- Provide an assessment and summary of potential impacts on coastal wetlands and fish spawning habitat for every alternative. Ensure that analyses include wetlands and fish spawning reefs in the area that would be vulnerable to spills and damage from project construction. This includes considering information about water treatment additives, including flocculants or coagulants, that Enbridge will utilize in its treatment facility, to understand the discharge's potential impact on aquatic life. Enbridge has not yet provided a detailed physical and chemical analysis of the composition of the effluent to any permitting agency. The project will result in "*an increased loading of pollutants to Lake Michigan, which will lower the water quality with respect to certain parameters.*"
- Expansion of Boulevard Drive for project construction may result in increased stormwater runoff and pollution to wetlands, especially when coupled with climate change impacts of increasing precipitation events and/or erosion in the area.
- The stormwater ponds that Enbridge plans to use during tunnel construction may overflow and pollute area wetlands – it is reasonably foreseeable that the project will further impact wetlands in the event of an overflow from the stormwater pond that Enbridge will use during construction.
- The dewatering process used to create the tunnel shaft may result in a drawdown of groundwater that could impact wetlands.
- Each wetland crossing requires a detailed functional assessment. This assessment is critical because wetland mitigation is not simply a replacement of acres, it is also a replacement of wetland function. Mitigation for wetland impacts that cannot be avoided will be required.
- Particular attention should be paid to the effectiveness of restoration efforts proposed in wetlands, including those that will be converted from forested and

shrub/scrub wetlands to emergent wetlands, as well as the success, failure, and adequacy of mitigation projects required for wetlands.

- Address the impacts along the full length of Boulevard Drive due to the widening and raising of the roadbed.
- The field along Boulevard Drive where Enbridge proposes to excavate is often waterlogged with many areas of submerged grasses. Ensure the entire area of excavation been included in their estimate of wetland affected by the project.
- There would be negligible impacts to wetlands (approximately less than a quarter acre). EGLE's own review determined that the proposed project would result in minimal impact to wetlands. EGLE estimated wetlands affected to be 0.13 acres, which is an area roughly 1/10th the size of a football field. Enbridge would be required to protect 1.3 acres of existing Great Lakes coastal wetlands, and purchase wetland credits from a state wetlands mitigation bank to address this impact. Enbridge will replace and increase wetlands that are potentially harmed by project.

5.4.29 Comments on the Waste Management

Comments suggested the following:

- Detail the plans and potential impacts of disposal of tunnel refuse. Address discharge of dredge or fill materials. Describe how the sediments removed from drilling under the lakebed will be stored temporarily and permanently. Analyze the chemical composition of the sediments for potentially toxic components. The drilling slurry could be spread all throughout the Great Lakes due to the pinnacle location of the pipeline between Lake Michigan and Lake Huron, and because of the differentiation of the water levels.
- The revised National Pollutant Discharge Elimination System information indicates the north side wastewater discharge outflow will be in 10 feet of water at a distance of little more than a football field from shore. Describe how the fluctuating lake levels impact the potential for contamination of the groundwater and wetlands.
- Evaluate how discharge will be treated before being returned to lake. Describe the treatment system that will be used to process the large amount of wastewater, including the bentonite drilling slurry. Specify where the treatment facility and containment ponds will be located. The prevailing surface current is west-southwest meaning the wastewater will be likely be discharged along the shallows of the north shore. Evaluate the turbidity that will occur in the shore water. Detail the chemicals discharged in treated water and the potential impacts on water and water recreation activities. According to hydrogeologist, Mike Wilczynski, "Enbridge wants to discharge five million gallons of wastewater into Lake Michigan every day that the tunnel is being constructed. Enbridge has not said how it will remove bentonite clay from the slurry prior to discharge. When mixed with water, bentonite will stick to everything it touches, killing off fisheries and destroying our drinking water, not to mention forming an impermeable barrier suspended on top of Lake Michigan for years to come."

- Provide a clear and complete description of what is in these retention ponds including the pollutant profile in these and the dangers.
- Describe how discharged water will be treated and what chemicals will be used.
- Disclose if there are environmental contaminants or risks associated with discharge.
- Describe what measures will be made to ensure the impacts from discharge on Indigenous resources protected by Treaty rights will be mitigated.
- The EIS should include extensive modeling on the impacts of inadvertent releases of drilling mud during Line 5 Tunnel construction, Line 5 maintenance along the pipeline, and potential construction of new segments such as the proposed Reroute around Bad River. Enbridge has stated that inadvertent releases, specifically during Horizontal Directional Drilling "*is a generally known and common risk.*" USACE and Cooperating Agencies will need a list of drilling mud additives to adequately assess the long-term impacts of an inadvertent release. Drilling mud is well known to impact spawning grounds, water turbidity, and pH levels.
- Leaving the existing Line 5 in place (abandon in place) is like superfund sites because leaves the contamination in place. Detail what is in the pipeline. Enbridge states it is proprietary and will not release the likely toxic and volatile ingredients.

5.4.30 Comments on the Water Resources

Comments suggested the following:

- The Great Lakes are valuable waters that source of 20 percent of world's fresh water and hold 95 percent of surface fresh water in the U.S. The Great Lakes contain 85 percent of fresh water in North America. The Straits is a critical confluence of waterways. Water is essential to strategic security of whole region. Water is at the heart of Michigan's health, economy, and way of life. Given the global droughts, there is no clear solution to the planet’s freshwater scarcity, but Michigan will likely have a greater role in water supply to the country in the future.
- The Line 5 pipeline crosses over 400 Great Lakes tributaries. The water crossings identified include many tributaries to Lake Michigan, Lake Huron, and the Indian River, which is part of the nearly 40-mile-long Inland Waterway that runs through Pickerel Lake, Crooked Lake, Crooked River, Burt Lake, Mullett Lake, the Cheboygan River, and Huron River. The EIS must assess the cumulative impacts across the entire length of Line 5, not just the section crossing the Straits of Mackinac. Provide a detailed description of the Great Lakes watershed, as well as specific sub-watersheds considering the unique characteristics including connecting surface waters such as, rivers and streams; lakebed soils and vegetation; high levels of sedimentation, extensive and internationally significant wetlands; groundwater in the surrounding land areas; and the ultimate receiving waters of Lakes Michigan and Huron. The Great Lakes have variable water flow directional changes. The currents in the Straits are 10 times as strong as they are in Niagara Falls.

- The USACE must enforce Section 404 of CWA. USACE's duty is to follow procedures under Section 404 of the CWA and to thereby fulfill the basic "Objective of this Act" which "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters...[including] elimination of discharge of pollutants into navigable waters." The USACE's role in protecting country's water resources continues to evolve from infrastructure development and maintenance to developing new approaches for reducing resource depletion and to eliminate pollutants and risks to our surface and groundwater, to make, mitigate, prevent, and respond to ecological problems, such as drought, fire, and oil spills.
- Concerns about impacts to water quality and drinking water. Especially since the Great Lakes provides drinking water to more than 40 million people in Canada and the U.S. Address groundwater and surface water contamination including perfluoroalkyl substances, perfluorooctane sulfonate, and bentonite, and the recent oil-water warning due to contamination of a small portion of Lake Huron. The federal government provided $1 billion this year to clean up existing contaminated sites that affect Great Lakes. Contamination of drinking water takes generations to be noticeable (e.g., Camp Lejeune). The water in the Great Lakes is only replenished by one percent annually.
- Concerns about potential damage to aquifers. Address the potential impacts to the great aquifer that spans from the Straits to Duluth. Investigate the likelihood of breaching the aquifer. Explain how aquifers will be protected against potential breaching during drilling, including loss of aquifer water and contamination of aquifer by drilling fluids. Consider past incidences such as in 2021, an aquifer was breached during construction of Line 3 in Northern Minnesota. Address the potential for disruption of the groundwater and/or intrusion into the aquifer that underlies the area of drilling the shaft. Detail the plan and policy to manage a frac-out in the aquifer including the procedures for notifying authorities and local homeowners.
- In Michigan, groundwater is the water source for 45 percent of the state's population and necessary for agriculture. Which means that 45 percent of Michiganders rely on wells which tap into aquifers for drinking water. All public and private wells with impact potential of the proposed project need to be identified and catalogued, particularly those drilled prior to 1988 for which there may not be construction information. Address the potential impacts to local wells including monitoring plans and procedures if a homeowner well is impacted due to the project.
- Since drilling vibrations generate heat and the cooling water would be returned to the watershed, determine how the heat from drilling would contribute to algae blooms in the Great Lakes. Consider other potential impacts related to toxic algal blooms and bacteria. Evaluate if drilling fluids would meet the USEPA parts per million limitations.
- Address the impact of treated water discharges during tunnel construction on the Straits' surface water quality at the treatment plant outfall near the shore at the southern tunnel portal. Concerns about Enbridge taking 5 million gallons of Lake

Michigan water every day, mix with chemicals, and putting it back into the lake. Enbridge's application to Michigan for the Discharge Permit for water effluent from Tunnel construction acknowledges that the proposed Tunnel will breach such aquifers but provides no mitigation plans

- Enbridge indicated there are no streams or rivers in the excavation area, but there is a small canal that runs from the western side of the Enbridge property into Lake Michigan. Address if there will there be monitoring of the water quality in this canal since it will pass near the proposed exit tunnel.
- Address the impact of tunnel construction on the local near-surface aquifer near Pointe La Barbe at the northern tunnel portal as well as the wider impact on the Silurian Devonian Aquifer that supplies water to a large area of northern Michigan.
- Discuss specific measures that Enbridge would be required to implement to ensure that project impacts on sedimentation and siltation would not cause significant degradation. Include site-specific erosion and sedimentation control plans, with best management practices for preserving aquatic resource integrity, not only for Lake Michigan, but for all adjacent wetlands.
- Disclose baseline water quality data to the extent possible. Identify waters for which data is not yet available and state how and when it will be collected to enable water quality comparisons before and after the proposed project. This should include establishing surface and groundwater quality for all stream and wetlands potentially impacted by the pipeline construction and operation through a robust baseline data collection program. Water quality data should be of sufficient statistical power to allow for detection of changes due to pipeline operation.
- Require a monitoring and response plan that dictates steps Enbridge would immediately take if monitoring data indicated a decline in water quality or a violation of water quality standards. USACE should review the plan and provide oversight.
- Analyze and disclose potential impacts of a spill on drinking water supplies and intake systems.
- Great Lakes waters serve important ecological functions, support the Tribal fishery, and supply drinking water. The scope of the EIS must evaluate the impacts of the project on water quality, including the water quality impacts for each alternative. The water quality assessment should pay special attention to any impacts that might affect a Great Lake. This analysis should be done in the context of the Great Lakes Water Quality Agreement between Canada and the U.S. For example, Article 6 of the Great Lakes Water Quality Agreement calls for notification of other parties to the agreement of activities that may impact the waters of the Great Lakes, including pipelines.
- USACE must also view how the proposed project and any alternatives will meet water quality standards of the state of Michigan and USEPA. USACE must provide analysis outside of the state of Michigan permit as to how the proposed project and alternatives would or would not violate water quality standards. Under Michigan's Water Quality Standards, Lake Michigan, Lake Huron, and the Straits

are designated for use as both a coldwater fishery and a warmwater fishery. The waters within the Straits are not to receive a heat load that would warm the receiving water at the edge of the mixing zone more than 3 degrees Fahrenheit above the existing natural water temperature. The EIS should identify any waters of interest that might be impacted by the project, including Outstanding Resource Waters, Exceptional Resource Waters, Wild and Scenic Rivers, Trout Streams, Blue Ribbon Trout Streams, and Water Trails.

- Address the potential lake bottom impacts of the project.
- Our water supplies are already in grave danger of being toxic due to inadequate filtering at all levels and the incredibly large amounts of toxicants and nanoparticles that have entered our water supply due to pollution by too many companies and corporations.
- The proposed project is in conflict with federal law, given the Great Lakes Restoration Act Section 1268 (c) (2) species "antidegradation policies," in which waters shall not be lowered in quality unless it is determined that such lowering will not injure livestock, wild animals, or plants or their growth or propagation, and will not destroy or impair the value of game, fish, and wildlife. Guidance shall specify numerical limits on pollutants in ambient Great Lakes waters to protect human health, aquatic life, and wildlife, and shall provide guidance to the Great Lakes states on minimum water quality standards, antidegradation policies, and implementation procedures for the Great Lakes System.

5.5 ALTERNATIVES IDENTIFIED

This section provides a summary of comments related to project alternatives received from the public, Cooperating Agencies, Tribes, the State of Michigan, and Enbridge. This includes alternatives identified outside of the EIS scoping period as indicated in Sections 5.5.3 and 5.5.4.

5.5.1 Alternatives from Public Scoping Comments

Comments received during the public scooping period included many regarding alternatives. These are summarized below, while Section 5.4.4 presents further information and the full range of comments received on this topic:

- Replace the existing Line 5 pipeline without tunneling (e.g., replace pipeline in current location or cross the Straits via a bridge instead of a tunnel)
- Reroute Line 5 to cross the water at a less-sensitive location or to avoid a water crossing altogether
- Utilize other transportation methods (e.g., rail or truck)
- Utilize other existing pipelines to transport crude oil currently conveyed by Line 5
- Consider other tunnel designs
- Consider utilizing Line 5 to transport other products (e.g., natural gas or hemp fuel)
- Decommission Line 5

- Consider alternatives that reduce use of fossil fuels and prioritize use of renewable energy sources

5.5.2 Alternatives from Cooperating Agencies

The Cooperating Agencies for this project include:

- Bay Mills Indian Community
- Grand Traverse Band of Ottawa and Chippewa Indians
- Little River Band of Ottawa Indians
- Little Traverse Bay Bands of Odawa Indians
- Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians
- Michigan State Historic Preservation Office
- Nottawaseppi Huron Band of the Potawatomi
- Sault Ste. Marie Tribe of Chippewa Indians
- U.S. Environmental Protection Agency
- U.S. Coast Guard

Comments submitted by Cooperating Agencies include those regarding the development of alternatives (see Section 5.5.2.1), the Proposed Action (see Section 5.5.2.2), the No Action Alternative (see Section 5.5.2.3), and other action alternatives (see Section 5.5.2.4).

5.5.2.1 Development of Alternatives

Additional alternatives should be considered, including:

1) alternatives that would avoid, minimize, and compensate for impacts to the environment within the proposed project footprint;

2) alternatives that would avoid, minimize, and compensate for impacts to the environment outside the footprint;

3) alternatives using alternative practices; and

4) other reasonable alternatives that will be developed through the project scoping process that that also meet the identified project purpose and need.

When developing action alternatives, USACE should:

- Discuss the source locations and types of all materials that are transported through the existing dual pipelines and those materials that could be transported through the proposed pipeline and tunnel in the future.
- Ensure that all reasonable project alternatives, including the No Action Alternative(s), receive full assessment of impacts and consideration within the EIS.

In addition to construction impacts, ensure that the document fully analyzes and discloses impacts from operations and maintenance.

5.5.2.2 Proposed Action

The EIS should discuss the logistics to construction of a tunnel underneath the lakebed of the Straits. This includes:

- How long construction of a tunnel will take, what permits will be required, and if specialized equipment (i.e., special boring equipment) will need to be manufactured and/or imported.
- Timeframes of any action alternatives in relation to existing planned or necessary projects on Line 5 that will need use of a boring machine before the tunnel project would begin.
- Discuss if construction of a new pipeline crossing the Straits will keep daily shipments at or below the current operation of up to 540,000 barrels per day, or if it would be allowed to transport more than 540,000 barrels per day through the Straits.
- If a new pipeline were to be constructed, discuss whether Enbridge could or would increase the Line 5 operating pressure. Currently, the dual pipelines operate at less than 25 percent of maximum operation pressure capacity, which Enbridge says is for “enhanced safety”. Changes made to Line 5’s dimensions and future construction at the Straits crossing may have implications for oil spill preparedness and response for the majority sections of Line 5 on either side of the current underwater dual pipelines (or tunnel if the project materializes).
- Potential increases in pressure enabled by a new pipeline in a tunnel may result in greater stresses to the 70-year-old pipe that constitutes the majority of the existing pipeline. Greater stress to those older reaches of pipe may increase the probability of a spill at different locations throughout the majority of the existing system, some of which may affect or threaten the Straits. There are numerous Line 5 crossings of inland streams and rivers that are direct tributaries to the Straits as well as to Lake Michigan and Lake Huron. In addition, increases in spill volumes that could result from higher operating pressures (that Enbridge could justify based upon a tunnel-protected Straits crossing) could result in increased threats to the Great Lakes and their tributaries throughout all of Line 5’s course.
- Discuss whether the new pipeline, if constructed, would pump a larger variety of oils, including whether it could pump heavy crude oil. Heavy crude oil poses different risks compared to what the dual pipelines ship currently.

5.5.2.3 No Action Alternative

- USACE should specify whether the No Action Alternative would involve continuing to operate the Straits portion of Line 5 in its current state or would involve changing operations or stopping operations completely. As an example, consider that the Wisconsin Department of Natural Resources’ recent EIS for the Line 5 Reroute

Project in Wisconsin included a No Action Alternative with two different scenarios. USACE should also ensure that the No Action Alternative(s) accurately represent conditions without the Proposed Action.

- The EIS should evaluate the environmental impact of leaving the existing dual pipelines in place. Currently, Enbridge proposes to decommission the existing submerged Line 5 dual pipelines crossing the Straits by purging, cleaning, and abandoning them in place. The EIS should also evaluate alternatives to abandonment in place, including impacts of removal, other alternatives, and any necessary mitigation.
- The EIS must include consideration of alternatives in which there would be no pipeline in or beneath the Straits due to the following reasoning:
    - First, there is no established need for Line 5 to operate. There is no economic or energy security need for continuing to use this pipeline, let along building and rerouting new segments of it.
    - Second, even if there were a need for fossil fuel products that Line 5 transports, there is no reason for these products to travel through the Straits. A fossil fuel pipeline has no place in waters of such immense cultural, spiritual, and economic significance to Tribal nations.
    - Third, the CWA requires USACE to presume that there are "practicable alternatives that do not involve special aquatic sites," such as the wetlands on either side of the Straits, to this project because it is not "water dependent." Transporting fuel through a pipeline is not water dependent, and Enbridge's desire to locate the pipeline in the Straits does not make this project water dependent. USACE must presume that there is a practicable alternative to the project that does not involve the proposed location for the project.
    - Fourth, alternatives where there are no pipelines in the Straits overlap with "No Action" alternatives that NEPA requires USACE to consider. "Where a choice of 'no action' by the agency would result in predicable actions by others, this consequence of the 'no action' alternative should be included in the analysis."
- Uncertainty regarding what would happen in the absence of an agency action supports the discussion of multiple No Action Alternatives:
    - Enbridge complies with or is forced to comply with the Notice of Revocation and Termination of the 1953 easement and ceases to operate the dual pipelines in the Straits;
    - A court enjoins the operation of the dual pipelines in the Straits in the ongoing litigation brought by the Michigan Attorney General;
    - Enbridge ceases to operate Line 5 (including the dual pipelines in the Straits) because it is forced to cease operating a portion of the pipeline in Wisconsin as a result of ongoing litigation; or
    - Enbridge ceases to operate the dual pipelines earlier than it would cease to operate the project, consistent with its depreciation study for the current

pipeline system (by 2040) as compared to the length of time for which it has obtained an easement to operate the project (99 years).

- The cultural and environmental benefits of eliminating the oil spill risk to the Great Lakes, benefits to advancing climate change goals, and benefits to ceded territories that would accompany Line 5 decommissioning must be quantified and displaced. The EIS should include the evaluation of future environmental impacts from decommissioning in place the current dual pipelines, including habitat for invasive species and long-term degradation of the pipeline. The EIS should explore all reasonable alternatives to abandonment-in-place of the decommissioned Line 5 dual pipeline, such as complete removal, burial in place with aggregate, or other alternatives.
- Enbridge does not have a valid easement to operate on the bottomlands. Additionally, the applicant does not have a valid easement for the portions of Line 5 crossing the Chequamegon-Nicolet National Forest and across the Bad River Reservation where the applicant is trespassing. USACE should not even consider permitting a project that does not have an easement for the proposed activity if the applicant is currently operating illegally. If USACE feels that they must move forward with the NEPA process, then they should critically examine what the No Action Alternative is. Will the No Action Alternative be to allow Line 5 to continue to operate illegally or will the No Action Alternative be to decommission Line 5 in compliance with the applicable permit requirements?

5.5.2.4 Other Action Alternatives

Section 404 of the CWA requires that a project must be the practical alternative with the least impact on the aquatic ecosystem, which is not demonstrated in Enbridge's application. With the revocation of the 1953 easement, Enbridge has failed to provide even one viable alternative. Additional alternatives identified by Cooperating Agencies, in addition to the No Action/Decommissioning alternatives include:

- Propose a connection of Enbridge's Superior, Wisconsin, and Sarnia, Ontario, terminals without crossing the Great Lakes.
- Construction of a new pipeline located outside of the Great Lakes Basin.
- Construction of a new pipeline through Canada.
- Use of existing pipeline infrastructure to transport oil should Line 5 be decommissioned, including alternative routes within the existing Lakehead System.
- Conversion of Line 5 to a natural gas only pipeline and using other existing infrastructure to transport crude oil.
- Use of a combination of rail, truck, and existing infrastructure to replace Line 5 capacity.
- Moving towards an electric grid more reliant on renewable energy.

- Examine a tunnel alternative that fully eliminates the risk of oil intrusion into the Straits in the event of an explosion or other pipeline damages.
- The proposed tunnel project indicates that the tunnel could be used by other utilities in the future. If this potential use is part of the project proposal, then all possible utility uses should be evaluated as alternatives. This evaluation must include potential hazards and increased incident response complexities associated with the co-location of different utilities in the same tunnel. In addition, the socioeconomic effects of moving utilities into the tunnel and the environmental effects of decommissioning other utility corridors should be included.

If such alternatives are not assessed in the EIS, USACE should provide a rationale for not carrying them forward. All alternatives that should and can be considered must receive full review of all impacts to human health, the environment, and the economy.

5.5.3 Alternatives from the State of Michigan

In 2017, the state of Michigan commissioned an independent analysis of alternatives to the pipelines under the Straits. Dynamic Risk Assessment Systems, Inc. finalized the report, Alternatives Analysis for the Straits Pipeline, document number SOM-2017-01-RPT-001 in October 2017. This analysis considered the following six alternatives:

- Alternative 1: Construct one or more new pipelines that do not cross the open waters of the Great Lakes and then decommission the existing Straits pipelines.
- Alternative 2: Utilize existing alternative pipeline infrastructure that does not cross the open waters of the Great Lakes and then decommission the existing Straits pipelines.
- Alternative 3: Use alternative transportation methods (e.g., rail, tanker trucks, oil tankers and barges) and then decommission the existing Straits pipelines.
- Alternative 4: Replace the existing Straits pipelines using the best available design and technology. This alternative considered two separate Straits pipeline crossing designs:
  - Alternative 4a: Conventional trenched installation.
  - Alternative 4b: Tunnel installation.
- Alternative 5: Maintain the existing Straits pipelines. This alternative serves as the “no action” and the baseline against which the other alternatives can be evaluated.
- Alternative 6: Eliminate the transportation of all petroleum products and NGLs through the Straits of Mackinac segment of Enbridge’s Line 5 and then decommission that segment. Under this alternative, it is assumed that no alternative infrastructure would transport these products and that existing pipelines would not be expanded to accommodate the volume that Line 5 currently transports. Two options were considered regarding the lamination of the Straits crossing:

- Alternative 6a: Partial abandonment, in which the remaining segments of Line 5 could function as stand-alone pipelines to serve receipt and delivery points in Michigan without crossing the Straits.
- Alternative 6b: Full abandonment, in which the entire Line 5 is abandoned.

The full report documents details of each of the above alternatives. In summary, Alternative 2 and the tanker truck and oil tanker and barge options of Alternative 3 were considered infeasible; the remaining alternatives and options presented above are considered feasible.

5.5.4 Alternatives Identified by Enbridge

In 2018, Enbridge submitted a report, *Alternatives for Replacing Enbridge's Dual Line 5 Pipelines Crossing the Straits of Mackinac*, to the state of Michigan detailing the feasibility of three alternatives for replacing the Line 5 pipelines crossing the Straits:

- Pipeline placed in an underground tunnel below the Straits. Under this alternative, a TBM would excavate a tunnel measuring just over 4 miles in length and a depth of up to 100 feet below the lakebed. The tunnel would have an outside diameter of 12 feet and inside diameter of 10 feet and contain one 30-inch pipeline.
- Pipeline installed across the Straits using an open-cut method that includes secondary containment. This alternative would feature a pipe-in-pipe system in which the 30-inch pipe that would transport the hydrocarbon products beneath the Straits would be incased in a 36-inch pipe that would provide secondary containment in the event of an accidental release. The pipeline would be trenched to 30 feet of water depth (approximately 0.5 mile offshore) and then laid on the lakebed.
- Pipeline installed below the Straits using the horizontal directional drilling method.

Enbridge determined the tunnel and open-cut installation methods were technically feasible and constructible alternatives. However, the alternative to install the pipeline using horizontal directional drilling was considered infeasible after analysis and not constructible given present-day technology. Factors that make this alternative infeasible are the required 30-inch diameter of the pipeline, the hard characteristics of the subsurface rock, and the length of the drill, which would be more than twice the length of any comparable crossing so far completed.

Of the two feasible alternatives, Enbridge determined the tunnel is estimated to have the least impactful construction process, as it would not affect the shoreline or the lakebed.

After identifying a tunnel as the preferred alternative for replacing the Line 5 dual pipelines, Enbridge submitted a Joint Permit Application in April 2020 for construction where land meets water (*Joint Permit Application for Inland lakes and Streams, Great Lakes, Wetlands, Floodplains, Dams, Environmental Areas, High Risk Erosion Areas and Critical Dune Areas*). An *Alternatives Analysis and Minimization of Impacts Report* was submitted with this application. This analysis conducted by Enbridge considered options for different components of the overall tunnel alternative, as summarized below:

- Tunnel alignment: The pipeline route between Point La Barbe in Michigan's Upper Peninsula and McGulpin Point in Michigan's Lower Peninsula is the preferred alternative. This alignment represents the shortest distance between the upper and lower peninsulas and would minimize construction, operation, and maintenance costs of the tunnel. Enbridge has existing stations in both areas, which minimizes the construction required to tie-in the new pipeline. Any other alignment would be longer and therefore more expensive and impactful to construct.
- Tunnel entrance locations: Enbridge considered alternative locations for the tunnel entrance points on the north and south sides of the proposed tunnel.
- North side. The preferred alternative is a location adjacent to the existing North Straits Facility. Choosing this site would minimize impacts to residential and commercial areas and would not require land acquisition from private landowners. Other alternatives that were considered include:
    - Locating the tunnel entrance to the northwest of the North Straits Facility. However, there are residential homes, a county road, and overhead electrical infrastructure in the area. The existing topography would require substantial grading to prepare the site for construction, but the area available for construction is limited between U.S. Highway 2 and the shoreline of Lake Michigan.
    - Locating the tunnel entrance to the north or northeast of the North Straits Facility. However, significant wetland and hydric soil features exist in this area. The presence of an existing underground natural gas pipeline also limits the area available for tunnel construction activities.
    - Locating the tunnel entrance east toward Mackinac Bridge. However, this area has significant infrastructure, including residences, commercial buildings, and areas used for tourism.
- South side. The preferred alternative is a location adjacent to the existing Mackinaw Station. Choosing this site would minimize impacts from construction and would not require land acquisition from private landowners. Other alternatives that were considered include:
    - Locating the tunnel entrance south or west of the existing station. However, this would place the entrance within the Headland International Dark Sky Park. The above ground operational facilities required for the tunnel would adversely affect the park.
    - Locating the tunnel entrance to the east of the existing station. However, there are multiple residences and associated infrastructure within this area, as well as the McGulpin Point Lighthouse.
    - Locating the tunnel entrance southeast of the existing station. Overhead electric transmission lines and underground natural gas pipelines exist in this area. Placing the tunnel entrance here would require the tunnel to extend under existing homes and would require tie-in and associated right-of-way on private property and/or within the Headlands International Dark Sky Park.

- Construction methods: A TBM would be used to excavate the proposed tunnel under the Straits. There are two approaches toward tunnel construction including a TBM:
    - Portal entry. This option would require a sloping ramp that starts and ground level and goes underground to a point where the TBM or begin excavating. This is the preferred method.
    - Shaft entry. This option would require the excavation of a vertical shaft to an underground point from which the TBM would begin excavating.
- Construction workspace: While tunnel construction techniques and sequencing are well established, Enbridge would reduce the area needed for construction by segmentally assembling the pipeline within the south side limits of disturbance (LODs). The pipeline would then be pushed or pulled into the tunnel. Existing off-site locations may be utilized for pipe storage, materials fabrication, and management offices to minimize the size of the LODs and reduce associated environmental impacts. Any other alternative construction workspace location would increase potential impacts.
- LOD siting and configuration: Enbridge conducted environmental and cultural surveys to site and configure the LODs to minimize potential impacts during construction of the tunnel.
- North Side LOD. The proposed location utilizes upland, previously disturbed areas, including the existing station, to the extent practical. No significant cultural resources have been identified within the LOD, and the proposed configuration avoids surveyed wetlands. Improvements to Boulevard Road to accommodate construction traffic would occur on the north and west side of the road to minimize potential impacts to the shoreline of Lake Michigan.
- South Side LOD. Enbridge has configured the proposed LOD to avoid private residential properties, Headlands International Dark Sky Park, and McGulpin Point Lighthouse. No wetlands, protected species, or significant cultural resources exist within the LOD.

Supplemental information provided by Enbridge to USACE in support of the permit application also summarized five considered disposal sites (two of the north side and three on the south side). All are active quarries or sand and gravel mining sites and have been permitted for use as disposal sites. In addition, Enbridge and the state of Michigan have agreed to two pipeline decommissioning options. The option Enbridge currently proposes in the USACE permit review is to abandon the dual pipelines in place. The second considered alternative includes the removal of the unburied/exposed sections of the dual pipelines.

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