

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

In the matter of the application of	)	
ENBRIDGE ENERGY, LIMITED PARTNERSHIP,	)	
for authority to replace and relocate the segment of	)	
Line 5 crossing the Straits of Mackinac into a tunnel	)	
beneath the Straits of Mackinac, if approval is	)	Case No. U-20763
required pursuant to 1929 PA 16, MCL 483.1 <i>et seq.</i> ,	)	
and Rule 447 of the Commission's Rules of Practice	)	
and Procedure, R 792.10447, or the grant of other	)	
appropriate relief.	)	
	)	

At the December 1, 2023 meeting of the Michigan Public Service Commission in Lansing,
Michigan.

PRESENT: Hon. Daniel C. Scripps, Chair
Hon. Katherine L. Peretick, Commissioner
Hon. Alessandra R. Carreon, Commissioner

ORDER

I. HISTORY OF PROCEEDINGS

On April 17, 2020, Enbridge Energy, Limited Partnership (Enbridge) filed an application (application) and supporting exhibits in this docket pursuant to Public Act 16 of 1929, MCL 483.1 *et seq.* (Act 16) and the Commission's Rules of Practice and Procedure, Mich Admin Code, R 792.10447 (Rule 447) requesting that the Commission grant Enbridge the authority for its project known as the Straits Line 5 Replacement Segment. According to Enbridge, the project involves replacing the segment of the Line 5 pipeline (Line 5) that crosses the Straits of Mackinac (Straits) in Michigan with a single, 30-inch diameter pipe and relocating the segment to a

“concrete-lined tunnel below the lakebed of the Straits” (Replacement Project). Application, p. 2. Enbridge sought *ex parte* approval of the application. In the alternative, Enbridge requested a declaratory ruling confirming that it already has the requisite authority to construct the Replacement Project pursuant to the March 31, 1953 order in Case No. D-3903-53.1 (1953 order).

On April 22, 2020, the Commission issued an order in this case seeking comments on the threshold issue presented in Enbridge’s declaratory ruling request. The Commission also decided to hold Enbridge’s application in abeyance while it considered the request for a declaratory ruling.

On June 12, 2020, Enbridge filed in this docket supplemental authority for its request for a declaratory ruling, citing a recent decision of the Michigan Court of Appeals that affirmed the constitutionality of Public Act 359 of 2018, MCL 254.324 *et seq.* (Act 359). On June 25, 2020, Bay Mills Indian Community (Bay Mills) filed supplemental authority in this docket, citing recent motions and briefs filed by the Michigan Department of Attorney General (Attorney General) in *Nessel v Enbridge Energy, Ltd Partnership*, Docket No. 19-474-CE, Ingham County Circuit Court, Michigan.

On June 30, 2020, the Commission issued an order in this case denying both *ex parte* approval of Enbridge’s application and its requested declaratory relief (June 30 order). The Commission set this matter for a contested proceeding, invited the continued submission of comments, and decided to read the record. June 30 order, p. 70.

On July 29, 2020, Enbridge filed in this docket a petition for rehearing of the June 30 order (July 29 petition for rehearing) pursuant to Mich Admin Code, R 792.10437 (Rule 437).

On August 11, 2020, Enbridge filed in this docket limited objections to the notice of intervention filed by the Attorney General and the petitions to intervene filed by Bay Mills, Grand Traverse Band of Ottawa and Chippewa Indians (GTBOC), Little Traverse Bay Bands of Odawa

Indians (LTBB), Nottawaseppi Huron Band of the Potawatomi (NHBP), the Michigan Environmental Council (MEC), Tip of the Mitt Watershed Council (TMWC), National Wildlife Federation (NWF), For Love of Water (FLOW), Environmental Law & Policy Center (ELPC), and Michigan Climate Action Network (MiCAN). On August 12, 2020, NHBP and FLOW each filed in this docket a reply to Enbridge's limited objections to the petitions to intervene. Also on August 12, 2020, a prehearing conference was held before Administrative Law Judge Dennis W. Mack (ALJ Mack), at which intervention was granted to the Attorney General; FLOW; MEC, GTBOC, TMWC, and NWF (together, the MEC Coalition); Bay Mills; ELPC and MiCAN (together, ELPC/MiCAN); LTBB; NHBP; Michigan Laborers' District Council (MLDC); Michigan Propane Gas Association (MPGA) and the National Propane Gas Association (together, the Associations); and the Mackinac Straits Corridor Authority (MSCA).¹ The Commission Staff (Staff) also participated. On August 13, 2020, ALJ Mack adopted a schedule for the case.

On August 19, 2020, the MEC Coalition, the Staff, Bay Mills, and ELPC/MiCAN each filed a response to Enbridge's July 29 petition for rehearing in this case.

On August 24, 2020, the Commission held a public hearing on the application, where the Commissioners listened to oral comments from members of the public. Written comments have been filed in this docket throughout the pendency of the case.

On September 2, 2020, Enbridge filed a motion in limine in this docket (September 2 motion in limine). On September 23, 2020, responses to the September 2 motion in limine were filed in this docket by the Staff; ELPC/MiCAN; FLOW; the Attorney General; the Associations; and

¹ ALJ Mack and the parties have used various shortened names in the documents filed in this docket. To reduce confusion, when reproducing a quote in this order, the shortened names or acronyms designated herein are used (in brackets).

MEC, Bay Mills, GTBOC, TMWC, and NWF. On September 30, 2020, ALJ Mack held a hearing on the motion.

On October 23, 2020, ALJ Mack issued a ruling in this docket granting Enbridge's September 2 motion in limine in part and denying it in part (ALJ Mack's initial ruling). On November 6, 2020, Bay Mills, the MEC Coalition, ELPC/MiCAN, FLOW, and the Attorney General² each filed in this docket an application for leave to appeal ALJ Mack's initial ruling under Mich Admin Code, R 792.10433 (Rule 433). On November 20, 2020, Enbridge, the Associations, the Staff, and MSCA each filed in this docket a response to the November 6, 2020 applications for leave to appeal.

On November 24, 2020, the MEC Coalition filed in this docket a motion for entry of a protective order to "govern the release, use, and disclosure of confidential, proprietary, or sensitive information, including information designated as Critical Energy Infrastructure Information." MEC Coalition's November 24, 2020 motion for protective order, filing #U-20763-0451, p. 1. On November 25, 2020, Enbridge filed in this docket a motion to compel answers to requests for admission from the Attorney General.

On December 4, 2020, the Staff filed in this docket a response supporting the MEC Coalition's motion for entry of a protective order. On that same date, Enbridge filed in this docket an answer to the MEC Coalition's motion for entry of a protective order, a brief in support, and a proposal for its own protective order. In addition, on December 4, 2020, MSCA filed in this docket a statement partially concurring with Enbridge's answer to the MEC Coalition's motion for protective order. Also on December 4, 2020, the Attorney General filed in this docket a response

² The Attorney General did not file her own application but filed a notice that she joins in the other four filed applications.

to Enbridge's November 25, 2020 motion to compel. On December 7, 2020, the MEC Coalition and Bay Mills jointly filed in this docket objections to the protective order requested by Enbridge in its December 4, 2020 answer.

On December 8, 2020, ALJ Mack held a hearing on the MEC Coalition's and Enbridge's motions for entry of a protective order and Enbridge's motion to compel. At the close of the hearing, ALJ Mack took the motions for entry of a protective order under advisement and denied Enbridge's motion to compel.

On December 9, 2020, the Commission issued an order in this case (December 9 order) remanding Enbridge's September 2 motion in limine to ALJ Mack in light of Governor Gretchen Whitmer's November 13, 2020 issuance of a notice of revocation of Enbridge's existing Line 5 easement in the Straits (Notice), which was issued during the briefing on the applications for leave to appeal ALJ Mack's initial ruling.

On December 10, 2020, ALJ Mack issued a ruling granting the MEC Coalition's motion for entry of a protective order in this case and denying Enbridge's proposed modifications. ALJ Mack set a revised schedule for the case on December 21, 2020.

On December 23, 2020, Enbridge filed a motion in this docket requesting approval to file supplemental direct testimony and exhibits (December 23 motion), and on that same date, filed the proposed supplemental direct testimony and exhibits. On January 8, 2021, the Staff filed a response in this docket in support of Enbridge's December 23 motion. On January 11, 2021, ALJ Mack granted Enbridge's December 23 motion, and the supplemental direct testimony and exhibits appear in the docket as filing #U-20763-0509.

Initial briefs on the remanded September 2 motion in limine were filed in this docket on January 15, 2021, and reply briefs were filed on January 29, 2021.³ ALJ Mack held a hearing on the remanded motion on February 5, 2021. On February 5 and 8, 2021, Enbridge filed in this docket a supplemental filing of Enbridge's Michigan Department of Environment, Great Lakes, and Energy (EGLE) permits and responsiveness summaries, respectively.

On February 23, 2021, ALJ Mack issued a ruling in this docket granting the remanded September 2 motion in limine in part and denying it in part, consistent with his initial ruling (ALJ Mack's ruling on remand). On March 9, 2021, ELPC/MiCAN; FLOW; the MEC Coalition;⁴ and Bay Mills, GTBOC, LTBB, and NHBP⁵ each filed in this docket an application for leave to appeal ALJ Mack's ruling on remand pursuant to Rule 433. On March 23, 2021, MLDC, Enbridge, the Associations, the Staff, and MSCA each filed in this docket a response to the applications for leave to appeal ALJ Mack's ruling on remand.

On April 21, 2021, the Commission issued an order in this case (April 21 order) addressing both sets of appeals. The Commission granted the applications for leave to appeal and granted the requested relief in part and denied it in part.

On May 5, 2021, ALJ Mack set a revised schedule for the case.

On May 21, 2021, the Tribal Intervenors filed in this docket a joint petition for rehearing of the April 21 order pursuant to Rule 437 (May 21 petition for rehearing). On June 11, 2021, Enbridge and the Associations each filed in this docket a response to the Tribal Intervenors'

³ At the time of the briefing on remand of the September 2 motion in limine, the alignment of certain parties changed. At the time of the filing of the second round of applications for leave to appeal, the alignment of certain parties changed again, as described below.

⁴ At this stage of the proceeding, the MEC Coalition is comprised of MEC, TMWC, and NWF.

⁵ Collectively, Tribal Intervenors for purposes of this application.

May 21 petition for rehearing. On that same date, the Staff filed a letter in this docket stating that it would not be filing a response to the Tribal Intervenors' May 21 petition for rehearing but "reserve[s] the right to address any issue and argument raised in the petition if they arise again throughout the course of this proceeding, related proceeding, or in any subsequent appeals." Staff's letter in response to the Tribal Intervenors' petition for rehearing, p. 1.

On September 14, 2021, direct testimony and exhibits were filed in this docket by LTBB, the Staff, MSCA, NHBP, Bay Mills, and ELPC/MiCAN. On September 15, 2021, ELPC/MiCAN filed in this docket additional direct testimony and exhibits, and MSCA filed the corrected testimony of Dr. Michael A. Mooney.

On December 14, 2021, rebuttal testimony and exhibits were filed in this docket by Enbridge, the Staff, the Associations, Bay Mills, and ELPC/MiCAN.

On December 21, 2021, Enbridge filed in this docket motions to strike portions of the direct testimony of Dr. Charles E. Cleland, Peter A. Erickson, and Jacques LeBlanc, Jr.; portions of the direct testimony and exhibits of Frank Ettawageshik, Whitney B. Gravelle, Dr. Peter Howard, and John Rodwan; and portions of the direct and rebuttal testimony of Dr. Elizabeth A. Stanton. On that same date, Enbridge filed in this docket a motion to strike portions of the rebuttal testimony of Richard Kuprewicz. On January 11, 2022, NHBP, the Staff, Bay Mills, the Associations, and ELPC/MiCAN each filed in this docket a response to Enbridge's motions to strike. On that same date, Enbridge filed in this docket revised Exhibits A-4 and A-21.1.

On January 13, 2022, ALJ Mack issued a ruling on the motions to strike in this case (ALJ Mack's January 13 ruling), finding that: (1) Enbridge's motion to strike portions of Dr. Cleland's direct testimony and Exhibit BMC-35 is granted; (2) Enbridge's motion to strike portions of Mr. Kuprewicz's rebuttal testimony is denied, but Enbridge's requested alternative relief to file

surrebuttal is granted; (3) Enbridge's motion to strike portions of Mr. LeBlanc's direct testimony is granted; (4) Enbridge's motion to strike portions of Ms. Gravelle's testimony and Exhibits BMC-1 through BMC-5 is granted; (5) Enbridge's motion to strike portions of Mr. Ettawageshik's direct testimony and Exhibits BMC-17 through BMC-30 is granted; (6) Enbridge's motion to strike Dr. Howard's direct testimony, in its entirety, and Exhibits ELP-8 through ELP-10 is denied; (7) Enbridge's motion to strike portions of Mr. Erickson's direct testimony is granted; (8) Enbridge's motion to strike portions of Dr. Stanton's direct and rebuttal testimony is denied; and (9) Enbridge's motion to strike portions of Mr. Rodwan's direct testimony and Exhibit NHBP-3 is granted. *See*, ALJ Mack's January 13 ruling, pp. 16-18. On January 14, 2022, Enbridge filed in this docket the surrebuttal testimony of Aaron Dennis, and NHBP filed the revised testimony of Mr. Rodwan. On January 17, 2022, Enbridge filed in this docket Exhibits A-13.1 and A-14.1, which are updates to Exhibits A-13 and A-14. On January 18, 2022, ELPC/MiCAN filed the revised direct testimony of Mr. Erickson in this docket.

On January 19, 2022, Bay Mills filed in this docket the revised direct testimony of Dr. Cleland, Ms. Gravelle, Mr. Ettawageshik, and Mr. LeBlanc. On that same date, Bay Mills filed a motion in this case to file the sur-surrebuttal testimony of Mr. Kuprewicz (Bay Mills' January 19 motion) or, "in the alternative to take official notice under Rule 428, [Mich Admin Code,] R. 792.10428, of a Joint Industry Report titled *Enhanced Girth Weld Performance for Newly Constructed Grade X70 Pipeline* [Joint Industry Report]—the exact grade of pipeline to be used in the Tunnel Project—and which was reviewed, approved, and signed by an Enbridge representative during the pendency of this contested case." Bay Mills' January 19 motion, p. 2. Also on January 19, 2022, Bay Mills filed Exhibit BMC-42C under seal. On January 20, 2022, ALJ Mack granted Bay Mills' motion to bind in the rebuttal and sur-surrebuttal testimony of

Mr. Kuprewicz, and ALJ Mack admitted Exhibits BMC-37 and BMC-43. On that same date, Bay Mills filed in this docket the sur-surrebuttal testimony of Mr. Kuprewicz and filed the revised direct testimony of Dr. Cleland under seal. On January 24, 2022, MSCA filed in this docket a motion to file the sur-sur-surrebuttal testimony of Daniel M. Cooper. On that same date, ALJ Mack granted MSCA's motion to bind in the sur-sur-surrebuttal testimony of Mr. Cooper.

Direct and cross-examination was conducted on January 14, 18-21, and 24, 2022.

On February 18, 2022, Bay Mills, GTBOC, LTBB, and NHBP;⁶ ELPC/MiCAN; Enbridge; FLOW; MLDC; MSCA; and the Staff each filed an initial brief in this docket. On that same date, in its initial brief, Bay Mills filed an application for leave to appeal ALJ Mack's January 13 ruling. On February 22, 2022, the Associations filed an initial brief in this docket. On March 11, 2022, the Tribal Nations, ELPC/MiCAN, Enbridge, FLOW, the MEC Coalition, the Staff, and the Associations each filed a reply brief in this docket.

On March 14, 2022, ALJ Mack filed a notice in this docket that the record in this case closed on January 24, 2022, and that the case was to be transmitted to the Commission for its consideration.

On April 6, 2022, the Staff filed a Fee Exhibit in this docket pursuant to the requirements of MCL 460.119 and the December 19, 2019 order in Case No. U-20634. *See*, Case No. U-20763, filing #U-20763-1142. On May 16, 2022, the Commission's Executive Secretary filed a memorandum in the docket acknowledging that Enbridge fulfilled its payment obligations. *See*, Case No. U-20763, filing #U-20763-1190.

⁶ For this stage of the proceeding, Bay Mills was joined by the GTBOC, LTBB, and the NHBP, and they refer to themselves as the Tribal Nations in their initial brief.

On July 7, 2022, the Commission issued an order in this case (July 7 order) reopening the record to receive additional testimony, exhibits, and rebuttal. In the July 7 order, the Commission found that additional evidence is necessary for the Commission to complete its Act 16 analysis of whether the Replacement Project is designed and routed in a reasonable manner and whether it meets or exceeds current safety and engineering standards. However, the Commission stated that briefing by the parties on the reopened record would not be permitted. On July 22, 2022, ALJ Mack set a revised schedule for the case.

On August 5, 2022, Enbridge, the Associations, and MLDC filed a joint petition for rehearing of the July 7 order (August 5 joint petition for rehearing) requesting that the Commission permit the parties to “advocat[e] their positions in briefing related to the reopened evidentiary record.” August 5 joint petition for rehearing, p. 3. On August 22, 2022, MSCA and Bay Mills each filed a response to the August 5 joint petition for rehearing stating that they do not object to the relief sought in the petition. On September 8, 2022, the Commission issued an order in this docket (September 8 order) finding that the request by Enbridge, the Associations, and MLDC to file additional briefing is reasonable and should be granted. Thus, the Commission stated that “initial briefs of no more than 30 pages addressing the evidence presented in the supplemental record developed April 4-7, 2023, may be filed no later than May 5, 2023, and reply briefs of no more than 25 pages addressing the evidence presented in the supplemental record developed April 4-7, 2023, may be filed no later than May 19, 2023.”⁷ September 8 order, p. 5.

On September 14, 2022, this case was reassigned to Administrative Law Judge Christopher S. Saunders (ALJ Saunders).

⁷ The hearing schedule was revised at a motion hearing on January 12, 2023, and the cross-examination scheduled for April 4-7, 2023, was rescheduled for April 11-14, 2023.

On October 21, 2022, Enbridge filed in this docket the direct testimony on reopening of Ashley Rentz and John Godfrey and Exhibits A-28 and A-29. On December 12, 2022, Bay Mills filed a motion in this docket to strike Appendix B to Exhibit A-29 (December 12 motion to strike). On December 20 and 21, 2022, ELPC/MiCAN and the Attorney General each filed a response in this docket, respectively, supporting Bay Mills' December 12 motion to strike. On December 21, 2022, the Staff filed in this docket a response in partial support of Bay Mills' December 12 motion to strike, and Enbridge filed in this docket a response opposing Bay Mills' December 12 motion to strike. On December 28, 2022, the Associations filed a response in this docket to Bay Mills' December 12 motion to strike, supporting Enbridge's response to the motion.

On January 11, 2023, ALJ Saunders held a hearing on Bay Mills' December 12 motion to strike. On January 12, 2023, ALJ Saunders issued a ruling in this docket on Bay Mills' December 12 motion to strike (ALJ Saunders' January 12 ruling), agreeing with Bay Mills, the Staff, the Attorney General, and ELPC/MiCAN that "Appendix B has not been offered in an admissible form and should be stricken." ALJ Saunders' January 12 ruling, p. 4. However, because the information in Appendix B was specifically requested by the Commission in the July 7 order, ALJ Saunders stated that Enbridge should be provided the opportunity to resubmit the information in an admissible form. ALJ Saunders directed Enbridge to "cure the evidentiary defects in the submission of Appendix B" and to submit the necessary testimony by January 17, 2023. ALJ Saunders' January 12 ruling, p. 5. ALJ Saunders thereafter set a revised schedule for the case.

On January 17, 2023, Enbridge filed in this docket the direct testimony on reopening of Ray Philipenko, the supplemental direct testimony on reopening of Mr. Dennis, the direct testimony on reopening of Steven Bott, and Exhibits A-30 through A-32. On January 18, 2023, Enbridge filed

in this docket the corrected direct testimony on reopening of Mr. Bott and Exhibit A-32. On that same date, Enbridge filed in this docket the amended corrected direct testimony on reopening of Mr. Bott, with Schedule 1 and Exhibit A-29.

On February 3, 2023, the Staff filed in this docket the direct testimony on reopening of Travis Warner and Exhibits S-31 through S-36. On that same date, Bay Mills filed in this docket the direct testimony on reopening of Mr. Kuprewicz, Brian O'Mara, and Ms. Gravelle, and Exhibits BMC-50 through BMC-63. Also, on February 3, 2023, MSCA filed in this docket a statement noting that it would not be filing additional testimony but reserved the right to file any rebuttal testimony as necessary and appropriate.

On February 23, 2023, Bay Mills filed in this docket a motion for leave to file the supplemental direct testimony on reopening of Mr. Kuprewicz based on newly publicized information (February 23 motion). On March 1, 2023, Enbridge filed in this docket a response and limited non-objection to Bay Mills' February 23 motion (March 1 response). Enbridge stated that it does not object to Bay Mills filing the supplemental direct testimony on reopening of Mr. Kuprewicz but "reserves all of its other rights including, but not limited to, filing a motion to strike the supplemental direct testimony" Enbridge's March 1 response, p. 3. On March 2, 2023, the Staff filed a letter in this docket stating that it would not be filing a response to Bay Mills' February 23 motion. On March 7, 2023, ALJ Saunders granted Bay Mills' February 23 motion. On that same date, Bay Mills filed in this docket the supplemental direct testimony on reopening of Mr. Kuprewicz and Exhibit BMC-64.

On March 10, 2023, Enbridge, the Staff, Bay Mills, and MSCA each filed in this docket rebuttal testimony on reopening and exhibits.

On March 29, 2023, Enbridge filed in this docket a motion to strike the rebuttal testimony on reopening and exhibits of Ms. Gravelle, asserting that it is not proper rebuttal, is outside the scope of the proceeding, is hearsay, and seeks to introduce information that was struck by ALJ Mack. On that same date, Bay Mills filed a motion in this docket to strike portions of Mr. Cooper's rebuttal testimony on reopening, asserting that it is not proper rebuttal, is irrelevant, and is outside the scope of the directives contained in the July 7 order. Also on March 29, 2023, Bay Mills filed a motion in this docket to strike portions of Paul Eberth's rebuttal testimony on reopening and Exhibit A-33 in its entirety. Further, on that same date, Bay Mills filed a motion in this docket to strike the direct testimony on reopening of Mr. Philipenko and Exhibit A-30, the supplemental direct testimony on reopening of Mr. Dennis and Exhibit A-31, and the amended corrected direct testimony on reopening of Mr. Bott and Exhibit A-32. In addition, on March 29, 2023, Bay Mills filed a motion in this docket to strike: (1) the direct testimony on reopening of Mr. Godfrey and Exhibit A-29; (2) the direct testimony on reopening of Gabriele Ferrara, Ph.D., and Exhibit A-35; (3) the March 10, 2023 rebuttal testimony on reopening of Mr. Dennis; and (4) the March 10, 2023 rebuttal testimony on reopening of Mr. Bott and Exhibit A-34. On April 7, 2023, Enbridge, the Staff, and MSCA filed in this docket responses opposing Bay Mills' March 29, 2023 motions to strike. On that same date, the Associations filed in this docket a brief in support of Enbridge's response opposing Bay Mills' March 29, 2023 motions to strike, and MLDC filed in this docket a concurrence with Enbridge's motion to strike and Enbridge's response opposing Bay Mills' March 29, 2023 motions to strike.

At a hearing conducted on April 11, 2023, Bay Mills orally made a motion and filed a motion in this docket requesting leave to file the surrebuttal testimony on reopening of Mr. O'Mara in response to Dr. Ferrara's direct testimony on reopening and exhibit. On that same date, ALJ

Saunders: (1) granted Enbridge's motion to strike the rebuttal testimony on reopening and exhibits of Ms. Gravelle; (2) granted Bay Mills' motion to strike portions of Mr. Cooper's rebuttal testimony on reopening; (3) denied Bay Mills' motion to strike the direct testimony on reopening of Dr. Ferrara and Exhibit A-35; (4) granted in part and denied in part Bay Mills' motion to strike the rebuttal testimony on reopening of Mr. Bott and Exhibit A-34; (5) granted Bay Mills' motion to strike portions of Mr. Eberth's rebuttal testimony on reopening and Exhibit A-33 in its entirety; (6) denied Bay Mills' motion to strike the direct testimony on reopening of Mr. Philipenko and Exhibit A-30, the supplemental direct testimony on reopening of Mr. Dennis and Exhibit A-31, and the amended corrected direct testimony on reopening of Mr. Bott and Exhibit A-32; and (7) denied Bay Mills' motion to strike the direct testimony on reopening of Mr. Godfrey and Exhibit A-29. 15 Tr 2056-2061.

At a hearing conducted on April 12, 2023, ALJ Saunders granted Bay Mills' motion to file the surrebuttal testimony on reopening of Mr. O'Mara. On that same date, Bay Mills filed in this docket the surrebuttal testimony on reopening of Mr. O'Mara. In addition, at the hearing conducted on April 12, 2023, Bay Mills orally renewed its motion to strike the amended corrected direct testimony on reopening of Mr. Bott and Exhibit A-32 (April 12 motion to strike). 16 Tr 2370. At the April 12, 2023 hearing, ALJ Saunders denied Bay Mills' April 12 motion to strike. 16 Tr 2374-2375.

On April 14, 2023, Bay Mills filed in this docket Exhibit BMC-70. On April 17, 2023, Enbridge, the Staff, and Bay Mills each filed in this docket official hearing exhibits.

On April 25, 2023, Bay Mills filed an application in this docket for leave to appeal ALJ Saunders' April 11 and 12, 2023 rulings admitting evidence on the record (April 25 application for leave to appeal). In the April 25 application for leave to appeal, Bay Mills objects to ALJ

Saunders' ruling that denied Bay Mills' motion to strike the direct testimony of Mr. Godfrey and Exhibit A-29 and ALJ Saunders' ruling that denied Bay Mills' motion to strike the amended corrected direct testimony on reopening of Mr. Bott and Exhibit A-32.

On April 27, 2023, Bay Mills filed in this docket corrected Exhibits BMC-50 through BMC-57. On April 28, 2023, Enbridge filed in this docket the corrected rebuttal testimony on reopening of Dr. Stanley Vitton.

On May 5, 2023, Enbridge, the Staff, Bay Mills, MLDC, and the Associations each filed in this docket an initial brief on reopening. On May 9, 2023, Enbridge filed in this docket a response to Bay Mills' April 25 application for leave to appeal and an accompanying initial brief. On May 19, 2023, Enbridge, the Staff, Bay Mills, the Associations, and MLDC each filed in this docket a reply brief on reopening.

On May 22, 2023, ALJ Saunders filed a notice in this docket that the reopened record closed on April 14, 2023, and that the case was to be transmitted to the Commission for its consideration.

On June 14, 2023, the Staff filed a Reopened Record Fee Exhibit in this docket pursuant to the requirements of MCL 460.119 and the December 19, 2019 order in Case No. U-20634. *See*, Case No. U-20763, filing #U-20763-1450. On July 19, 2023, the Commission's Executive Secretary filed a memorandum in the docket acknowledging that Enbridge fulfilled its payment obligations. *See*, Case No. U-20763, filing #U-20763-1451.

II. BACKGROUND

In its application, Enbridge explained that Line 5 was constructed by Lakehead Pipe Line Company (Lakehead)⁸ in 1953 and that it is a 645-mile interstate pipeline that traverses Michigan's Upper and Lower Peninsulas, originating in Superior, Wisconsin, and terminating near Sarnia, Ontario, Canada. Application, p. 5. Enbridge stated that Line 5 was built to transport light crude oils and natural gas liquids (NGLs). While the vast majority of product shipped through Line 5 travels through Michigan to Canada, Enbridge asserted that Line 5 delivers NGLs to a propane production facility in Rapid River, Michigan, and delivers light crude oil to facilities that interconnect with other pipelines in Lewiston and Marysville, Michigan. Application, pp. 5-6. Line 5 has an annual average capacity of 540,000 barrels per day (bpd), and Enbridge stated that the Replacement Project will not impact its annual average capacity or the nature of the service provided by Line 5. Application, pp. 5, 8, 13.⁹

Enbridge explained that where Line 5 crosses the Straits, it currently consists of two, 20-inch-diameter pipes, four miles in length, referred to as the dual pipelines. Enbridge stated that pursuant to the Replacement Project, the four-mile segment of the dual pipelines will be replaced

⁸ Enbridge states that, in 1991, Lakehead transferred Line 5 to Lakehead Pipe Line Company, Limited Partnership, which changed its name to Enbridge Energy, Limited Partnership, in 2002. Enbridge's reply comments, p. 4. *See also*, November 8, 1991 order in Case No. U-9980.

⁹ Enbridge witness Marlon Samuel states that, for the past 10 years, Line 5 has operated at about 90% of its annual average capacity of up to 540,000 bpd. 7 Tr 757. Ninety percent of average capacity is about 486,000 bpd, or 20,400,000 gallons per day, of crude oil and NGLs transported through Line 5. The Upper Peninsula (U.P.) Energy Task Force estimates that the Rapid River facility produces approximately 30,660,000 gallons per year of propane. *Upper Peninsula Energy Task Force Committee Recommendations, Part I, Propane Supply*, EGLE, April 17, 2020, p. 48. *See*, https://www.michigan.gov/documents/egle/Upper_Peninsula_Energy_Task_Force_Committee_Recommendations_Part_1_Propane_Supply_with_Appendices_687642_7.pdf (accessed December 1, 2023) (U.P. Energy Task Force Report).

with a single, 30-inch-diameter pipe that will be located within a concrete-lined tunnel beneath the lakebed of the Straits (the tunnel). Application, pp. 2, 8. Enbridge asserted that the Replacement Project will provide greater protection from any release of liquid petroleum to the aquatic environment because compared to the dual pipelines that are currently situated on the top of the lakebed and vulnerable to a vessel anchor strike, the Replacement Project will relocate the Straits Line 5 segment to a concrete-lined tunnel deep beneath the lakebed. Enbridge noted that the construction of the tunnel is the subject of separate applications before other state and federal agencies, including EGLE and the United States (U.S.) Army Corps of Engineers (USACE).

Enbridge stated that beginning in 2017, it entered into a series of agreements¹⁰ with the State of Michigan relating to the relocation of the Straits Line 5 segment to the tunnel. Enbridge noted that the Michigan Legislature enacted Act 359 in December 2018, which created MSCA and delegated to MSCA the authority to enter into agreements pertaining to the construction, operation, and maintenance of the tunnel to house the replacement pipe segment.¹¹ Thus, Enbridge asserted that its request for Commission approval of the Replacement Project does not

¹⁰ See, Agreement Between the State of Michigan and Enbridge Energy, Limited Partnership and Enbridge Energy Company, Inc. (First Agreement) (Exhibit A-8); Second Agreement Between the State of Michigan, Michigan Department of Environmental Quality, and Michigan Department of Natural Resources and Enbridge Energy, Limited Partnership, Enbridge Energy Company, Inc. and Enbridge Energy Partners, L.P. (Second Agreement) (Exhibit A-10); Third Agreement Between the State of Michigan, Michigan Department of Environmental Quality, and Michigan Department of Natural Resources and Enbridge Energy, Limited Partnership, Enbridge Energy Company, Inc. and Enbridge Energy Partners, L.P. (Third Agreement) (Exhibit A-1); and Tunnel Agreement (Tunnel Agreement) (Exhibit A-5). Required terms of the Tunnel Agreement are contained in MCL 254.324d(4). In this order, the First, Second, Third, and Tunnel Agreements are referred to collectively as the Agreements.

¹¹ On October 31, 2019, the Michigan Court of Claims held that Act 359 is constitutional and confirmed the validity and enforceability of the Agreements. *Enbridge Energy, LP v Michigan*, Case No. 19-000090-MZ (Oct. 31, 2019). The Michigan Court of Appeals affirmed the Michigan Court of Claims' order in *Enbridge Energy, LP v Michigan*, 332 Mich App 540; 957 NW2d 53 (2020). That order was not appealed.

include “authorization to design, construct, or operate the tunnel” because “[t]he tunnel will be designed, constructed, and maintained pursuant to the ‘Tunnel Agreement’ entered between the MSCA and Enbridge pursuant to Act 359.” Application, p. 3.

Enbridge explained that, pursuant to the Tunnel Agreement, the tunnel will be constructed in the subsurface lands beneath the lakebed of the Straits within the easement issued by the Michigan Department of Natural Resources (DNR) to MSCA in 2018 (2018 easement) and pursuant to the assignment of certain rights under that easement by MSCA to Enbridge. Enbridge stated that the tunnel will be constructed in accordance with all required governmental permits and approvals. Enbridge averred that it will enter into a 99-year lease with MSCA for the use of the tunnel to operate and maintain the Straits Line 5 replacement pipe segment. Application, pp. 13-14.

In its application, Enbridge seeks Commission approval to operate and maintain the replacement pipe segment located within the tunnel as part of Line 5 under Act 16. Enbridge stated that once the new four-mile pipe segment is placed into service within the tunnel, service on the dual pipelines will be discontinued. Application, p. 3.

III. PETITIONS, EASEMENT REVOCATION, PERMITS, AND APPLICATIONS FOR LEAVE TO APPEAL

A. Enbridge Energy, Limited Partnership’s Petition for Rehearing

On July 29, 2020, Enbridge filed a petition for rehearing of the June 30 order in this case. In the July 29 petition for rehearing, Enbridge argued that its petition should be granted because “the Commission’s June 30, 2020 Order is based on an erroneous conclusion of law: that Enbridge is not a utility. This erroneous conclusion resulted in a misinterpretation and misapplication of Rule 447 (R 792.10447), and a faulty determination that Enbridge was required to file an application seeking approval for the [Replacement] Project.” July 29 petition for rehearing,

pp. 1-2 (emphasis in original) (footnote omitted). Enbridge reiterated the arguments set forth in its initial comments filed in response to the April 22 order, specifically asserting that Enbridge *is* a utility pursuant to Act 16, that Rule 447 only applies to new construction of a utility pipeline and not to construction that relocates a portion of an existing pipeline, and that, pursuant to the 1953 order, the company already has the requisite authority to construct the Replacement Project. As a result, Enbridge contended that it was not required to file a new application with the Commission for approval of the Replacement Project. Finally, in the petition, Enbridge requested that the Commission rule on the petition for rehearing “at the time of the final order in the contested case hearing on its application, and only in the event that the Commission denies the application.” Enbridge’s July 29 petition for rehearing, p. 2, n. 2.

On August 19, 2020, the Staff, the MEC Coalition, Bay Mills, and ELPC/MiCAN each filed a response to Enbridge’s July 29 petition for rehearing (August 19 responses). In the August 19 responses, the parties argued that Enbridge’s July 29 petition for rehearing does not meet the Commission’s rehearing standards because Enbridge merely reiterates the arguments set forth in previous filings, which have been addressed and rejected by the Commission. Additionally, in Bay Mills’ August 19 response to Enbridge’s July 29 petition for rehearing, Bay Mills asserted that if the Commission grants Enbridge’s requested relief, it will “violate the State’s obligation to confer with Bay Mills and to consider the impact of the Tunnel Project on Bay Mills’ treaty rights.” Bay Mills’ August 19 response, p. 3. Furthermore, in ELPC/MiCAN’s August 19 response to Bay Mills’ July 29 petition for rehearing, ELPC/MiCAN requested that Enbridge’s “proposal that the Commission rule on this petition for rehearing at the time of the final order in

the contested case hearing, and only in the event that the Commission denies the application, should be denied.” ELPC/MiCAN’s August 19 response, p. 1.¹²

For the reasons set forth in section VII of this order, the Commission finds that Enbridge’s July 29 petition for rehearing is moot.

B. Enbridge Energy, Limited Partnership’s Motion in Limine

In its September 2 motion in limine, Enbridge requested that ALJ Mack limit the scope of this Act 16 proceeding by excluding evidence that Enbridge characterizes as irrelevant: “(1) the construction of the utility tunnel, (2) the environmental impact of the tunnel construction, (3) the public need for and continued operation of Line 5, (4) the current operational safety of Line 5, (5) whether Line 5 has an adverse impact on climate change, and (6) the intervening parties’ climate change agendas.” September 2 motion in limine, pp. 1-2. In addition, Enbridge contended that the scope of the proceeding should be restricted to the following issues: “(A) is there a public need to replace the existing Line 5 crossing of the Straits with a pipe segment relocated in a utility tunnel beneath the Straits, (B) is the replacement pipe segment designed and routed in a reasonable manner, and (C) will the construction of the replacement pipe segment meet or exceed current safety and engineering standards?” *Id.*, p. 2.

In his initial ruling, ALJ Mack noted that Enbridge argues that the tunnel “is a standalone structure that is being constructed under Act 359 to accommodate a host of utility infrastructure, one of which is its relocated pipeline.” ALJ Mack’s initial ruling, p. 8. In addition, ALJ Mack stated that according to Enbridge, the tunnel should not be included in the Commission’s Act 16 review because “it cannot be deemed a fixture under [MCL 483.1(2)], a facility under Rule 447, or

¹² Because ELPC/MiCAN’s August 19 response is not paginated, the Commission clarifies that page 1 starts in natural order with the first page of the response.

a consideration in quantifying the physical and economic impact from the construction [of the] pipeline under [MCL 483.2b].” ALJ Mack’s initial ruling, p. 8. ALJ Mack disagreed with Enbridge. Although other utility infrastructure may be relocated to the newly constructed tunnel, ALJ Mack noted that this other utility infrastructure is not the reason Enbridge is proposing to construct the tunnel; rather, the relocation of the Straits Line 5 segment “is the entire reason Enbridge is undertaking the project. The argument that the Utility Tunnel and relocated pipeline are unrelated disregard the fact that those components are, for the reasons discussed, inextricably connected.” *Id.*, p. 8.

ALJ Mack also found that, pursuant to Act 16, the Commission must:

ensure that pipelines are designed, routed, constructed, and operated in a safe and economical manner. . . . The only way to make that determination is for the Commission to have a record that contains all relevant information concerning the proposal to relocate the existing pipelines into the Utility Tunnel. That necessarily requires the development of a record on the design, construction, and operational aspects of both the pipeline and Utility Tunnel. Counsel for [MSCA] indicated during Oral Argument [that] the plans for the Utility Tunnel will be completed while this case is pending and will be offered as evidence in this case. 2 TR 205-207. To exclude that evidence under Enbridge’s Motion would effectively preclude the Commission from performing its statutorily mandated review of a project under Act 16.

ALJ Mack’s initial ruling, p. 9 (footnote omitted). Moreover, ALJ Mack found that, as set forth in Act 16, the tunnel is a fixture and, pursuant to Rule 447, the tunnel is a facility. Therefore, he asserted that the tunnel’s “design, construction and operation are relevant in considering Enbridge’s Application to relocate the existing [dual] pipelines.” ALJ Mack’s initial ruling, p. 10.

Next, ALJ Mack noted that according to Enbridge, “any issue pertaining to the operation of Line 5 in its entirety, including the public need for that pipeline and its continued operation, are outside the scope of this case.” *Id.*, pp. 10-11. He found Enbridge’s argument persuasive and granted the company’s September 2 motion in limine regarding the current operational aspects of

Line 5. ALJ Mack stated that Enbridge’s proposed relocation of the Straits Line 5 segment, as set forth in the application, does not warrant “a review of the operation of Line 5 in its entirety.”

ALJ Mack’s initial ruling, p. 15 (footnote omitted).

Finally, ALJ Mack noted that Enbridge claims that the Michigan Environmental Protection Act, MCL 324.1701 *et seq.* (MEPA), does not apply to the tunnel, and that MEPA does not allow the Commission to consider climate change when reviewing the application for replacement of the Straits Line 5 segment. ALJ Mack disagreed, stating that:

given the conclusion the Utility Tunnel is a “fixture” under [MCL 483.1(2)], a “facility” under Rule 447, and a necessary component of the determination under [MCL 483.2b] on whether a good-faith effort is made to minimize the physical impact and economic damage from the construction of the pipeline, [Enbridge’s] contention cannot be sustained. Because the Utility Tunnel must be considered in determining whether the project can be approved under Act 16, it is necessarily part of the “conduct” in a licensing proceeding subject to review under MEPA.

ALJ Mack’s initial ruling, p. 17. However, ALJ Mack noted that EGLE and USACE will review the construction of the tunnel, and he stated that the Commission may “rely on the expertise of those agencies as part of its MEPA review, and [it] avoids the potential for conflicting results between the agency decisions.” *Id.*

ALJ Mack noted that Bay Mills, ELPC/MiCAN, FLOW, and the MEC Coalition argue that consumer consumption of the fuels shipped on Line 5 results in greenhouse gas (GHG) emissions and harmful effects to the environment and that these GHG emissions may be reviewed by the Commission under MEPA. He stated that:

MEPA requires an examination of the “conduct” to determine its effect on the natural resources. The conduct in this case is the activity proposed in the Application and subject to the Commission’s jurisdiction under [the] Act: the replacement of the existing pipelines on the bottomlands with a pipeline in a Utility Tunnel. In effect, the Parties opposing the exclusion of evidence concerning greenhouse gases and climate change are advancing a quite broad interpretation of the “conduct” that is subject to review under MEPA. Specifically, consideration of the environmental effect of the oil transported on the pipeline after it is refined and

placed in the market for consumption would also extend the conduct to the extraction and refinement processes. While the Parties opposing the Motion provide a great deal of argument on the deleterious effect on the environment from greenhouse gases and climate change, they do not provide any substantive legal basis to support such a broad construction of the term “conduct” in MEPA.

ALJ Mack’s initial ruling, p. 18. ALJ Mack concluded that, “consistent with Act 16 and as it pertains to MEPA, the conduct at issue in this case does not include the environmental effects from the extraction, refinement, or consumption of the oil transported on Line 5. Therefore, any evidence in that regard, including the environmental effect of greenhouse gas emissions and climate change, is irrelevant.” ALJ Mack’s initial ruling, p. 19. Thus, ALJ Mack granted Enbridge’s September 2 motion in limine on this issue.

On November 6, 2020, Bay Mills, ELPC/MiCAN, and FLOW each filed an application for leave to appeal ALJ Mack’s initial ruling (November 6 applications for leave to appeal). On that same date, the Attorney General filed a letter of support for and joinder in the November 6 applications for leave to appeal. Enbridge, the Associations, MSCA, and the Staff each filed a response to the applications for leave to appeal on November 20, 2020. On April 21, 2021, the Commission issued an order in this case addressing the November 6 applications for leave to appeal, which is discussed *infra*.

C. State of Michigan’s Notice of Revocation and Termination of Easement

Seven days after Bay Mills, ELPC/MiCAN, and FLOW filed the November 6 applications for leave to appeal, Governor Whitmer and the DNR revoked and terminated the easement for the dual pipelines that was granted on April 23, 1953, by the State of Michigan to Enbridge’s predecessor, Lakehead. The November 13, 2020 Notice of Revocation and Termination of Easement (Notice) states that:

the State of Michigan hereby provides formal notice to Enbridge . . . that the State is revoking and terminating the 1953 Easement The revocation and

termination each take legal effect 180 days after the date of this Notice to provide notice to affected parties and to allow for an orderly transition to ensure Michigan's energy needs are met. Enbridge must cease operation of the Straits Pipelines 180 days after the date of this Notice.

Notice, p. 1.^{13, 14}

D. Remand and Rehearing of Enbridge Energy, Limited Partnership's Motion in Limine

Following the issuance of the November 13, 2020 Notice, the Commission issued the December 9 order. In the order, the Commission noted that at the outset of these proceedings, it recommended that:

the administrative law judge (ALJ) set a schedule that would conclude the evidentiary portion of the proceeding and briefing approximately 10 months from the date of the prehearing conference. In providing this guidance, the Commission

¹³ See, https://content.govdelivery.com/attachments/MIEOG/2020/11/13/file_attachments/1600920/Notice%20of%20%20Revocation%20and%20Termination%20of%20%20Easement%20%2811.13.20%29.pdf (accessed December 1, 2023).

¹⁴ On November 13, 2020, the Attorney General filed an action in the Ingham County Circuit Court on behalf of the State of Michigan, Governor Whitmer, and the DNR, seeking declaratory and injunctive relief to acknowledge and enforce the revocation (Case No. 20-646-CE). On November 24, 2020, Enbridge filed an action against the State of Michigan in the U.S. District Court for the Western District of Michigan (U.S. District Court) in Case No. 1:20-CV-1141 for declaratory and injunctive relief seeking a determination that the revocation is not lawful. Subsequently, the Attorney General filed a motion in Case No. 1:20-CV-1141 to remand the case to state court pursuant to 28 USC 1447(c). On November 16, 2021, the U.S. District Court issued an opinion and order in Case No. 1:20-CV-1142 (November 16 opinion and order), finding that the proceeding is properly in federal court: "The State Parties' claims 'arise under' federal law because the scope of the property rights the State Parties assert necessarily turns on the interpretation of federal law that burdens those rights, and this Court is an appropriate forum for deciding these disputed and substantial federal issues." *Mich v Enbridge Energy*, 571 F Supp 3d 851, 862 (WD Mich, 2021) (quoting 28 USC 1331).

On November 30, 2021, the Attorney General filed a notice requesting that the case pending before the U.S. District Court be voluntarily dismissed. However, in a press release dated March 3, 2023, the Attorney General noted that although she voluntarily dismissed the case in U.S. District Court, she is continuing to pursue litigation against Enbridge in state court. See, <https://www.michigan.gov/ag/news/press-releases/2023/03/03/attorney-general-nessel-asks-court-of-appeals-to-move-enbridge-case-back-to-michigan> (accessed December 1, 2023).

recognizes that significant developments may arise that could affect the schedule and scope of the proceeding and, therefore, looks to the ALJ to work with the parties to make appropriate adjustments to this general timeframe without seeking approval from the Commission.

December 9 order, p. 5 (quoting June 30 order, p. 70). In the December 9 order, the Commission found that the Notice, which revoked and terminated the 1953 easement, is a “significant development” and remanded Enbridge’s September 2 motion in limine to ALJ Mack for rehearing.

Id. The Commission stated that the rehearing would:

give the parties the opportunity to brief the question of whether, and, if so, to what extent Governor Whitmer’s action to revoke and terminate the 1953 easement changes the scope of review in this proceeding and how that change, if any, effects the issues presented in the motion in limine, including the issues of public need for the Line 5 Project and the required environmental review of the Line 5 Project.

December 9 order, p. 6.

Accordingly, on December 21, 2020, ALJ Mack provided an amended case schedule to allow briefing on remand and, if applicable, appeals of ALJ Mack’s ruling on Enbridge’s remanded September 2 motion in limine. On January 15, 2021, Enbridge, Bay Mills and the MEC Coalition, FLOW, the Associations, MSCA, and the Staff each filed an initial brief on remand in this docket. On that same date, ELPC/MiCAN filed in this docket a supplemental response to Enbridge’s September 2 motion in limine. In addition, on that same date, the Attorney General filed in this docket a letter supporting the relief requested in the initial briefs on remand filed by ELPC/MiCAN and Bay Mills and the MEC Coalition. *See*, Attorney General’s support for relief requested in initial briefs on remand filed by Tribal and environmental intervenors, p. 1.

In their initial briefs on remand, Enbridge, the Staff, and the Associations each asserted that the Notice does not affect the disposition of the September 2 motion in limine and does not alter the scope of review in this case. *See*, Enbridge’s initial brief on remand regarding the September 2 motion in limine, p. 1; Staff’s initial brief on remand of ALJ Mack’s ruling on Enbridge’s

September 2 motion in limine, p. 2; Associations' initial brief on remand regarding Enbridge's September 2 motion in limine, p. 2. In its initial brief on remand, MSCA stated that it supports the conclusions set forth in Enbridge's and the Staff's initial briefs on remand. MSCA's initial brief in support of ALJ Mack's ruling on Enbridge's September 2 motion in limine, p. 1.

In their initial brief on remand, Bay Mills and the MEC Coalition contended that the purpose of the Replacement Project is to extend the lifespan of Line 5 and to provide Enbridge with additional years of revenue from the shipment of product on Line 5. According to Bay Mills and the MEC Coalition, as a result of the revocation and termination of the 1953 easement and the possible shutdown of the dual pipelines, Enbridge must construct a tunnel in the Straits in order to continue the operation of Line 5 as a whole. Thus, Bay Mills and the MEC Coalition argued that the construction of the tunnel, the Replacement Project, and the continued operation of Line 5 are inextricably linked and the Commission must consider "whether there is a public need to secure and extend the operating life of Line 5 in this manner." Bay Mills' and the MEC Coalition's initial brief on remand regarding Enbridge's September 2 motion in limine, p. 9.

In addition, Bay Mills and the MEC Coalition noted that, according to Enbridge, the Replacement Project will significantly reduce the risk of an oil spill from the Straits Line 5 segment into the Great Lakes and better protect the environment. However, Bay Mills and the MEC Coalition asserted that the Notice, if enforced, will eliminate the risk of an oil spill from the dual pipelines and, thus, "the objective Enbridge claimed the [Replacement] Project would attain may be attained by other means. Moreover, it is possible that the evidence could show that the [Replacement] Project would reinstate the risk of an oil spill to the Great Lakes, and inland waters, when compared to the status quo under revocation and termination." *Id.*, p. 21. Finally, Bay Mills and the MEC Coalition averred that, "[i]n light of the revocation and termination, it is even more

apparent that greenhouse gas emissions related to the transportation of hydrocarbons through Line 5 after Project completion should be considered emissions that may not occur in the absence of this Project.” Bay Mills and the MEC Coalition’s initial brief on remand regarding Enbridge’s September 2 motion in limine, p. 29.

In its supplemental response to Enbridge’s September 2 motion in limine, ELPC/MiCAN argued that because the Notice revokes the 1953 easement and directs the shut-down of the dual pipelines, the Replacement Project has become new construction of a pipeline in a new easement for the purpose of restarting a decommissioned pipeline. As a result, ELPC/MiCAN asserted that MEPA requires a comparison of the direct and indirect GHG emissions from a decommissioned pipeline with the direct and indirect GHG emissions from a restarted pipeline. Additionally, ELPC/MiCAN contended that the “MEPA analysis of Enbridge’s request to restart a decommissioned Line 5 cannot be undertaken without considering all GHG emissions that will result from construction of the Proposed Project.” ELPC/MiCAN’s supplemental response to Enbridge’s September 2 motion in limine, pp. 14-15 (footnote omitted). Finally, ELPC/MiCAN argued that a wholesale exclusion of evidence regarding GHG emissions is contrary to Michigan law.

In its initial brief on remand, FLOW asserted that the remand should focus on four issues. First, because the Commission is an agency of the State of Michigan, FLOW argued that the Commission “must ensure that its decisions conform to requirements of public trust law. This is particularly important in the present matter, because of the scope of the Commission’s obligation to determine whether the tunnel and tunnel pipeline is based on the public interest, necessary [sic], and siting or locating the project in or under public trust bottomlands of the Great Lakes.” FLOW’s initial brief on remand regarding Enbridge’s September 2 motion in limine, p. 2. Second,

FLOW stated that “an agency of the State cannot fulfill its sworn duty under the public trust doctrine without considering the evidence regarding all aspects of the public trust and paramount public uses connected with all of Line 5.” *Id.*, p. 3. Third, FLOW contended that Enbridge no longer has the right to operate the dual pipelines pursuant to the Notice, and Enbridge’s claimed interests in public trust bottomlands through the 2018 easement “have not been authorized under and [as] required by the Great Lakes Submerged Lands Act (‘GLSLA’), and are, therefore, void and/or have no legal effect; as a result, Enbridge cannot proceed under Act 16 unless and until it has obtained authorization for these claimed rights” FLOW’s initial brief on remand regarding Enbridge’s September 2 motion in limine, p. 4 (footnote omitted). Lastly, FLOW argued that ALJ Mack’s initial ruling improperly narrowed the scope of the review required under Act 16 and MEPA.

On January 29, 2021, Enbridge, the Attorney General, Bay Mills and the MEC Coalition, ELPC/MiCAN, MLDC, the Associations, and the Staff each filed a reply brief on remand. MLDC asserted that it concurs with the Staff’s initial brief on remand. *See*, MLDC’s reply brief on remand in support of Enbridge’s motion in limine, p. 2. In their reply brief on remand, the Associations asserted that the “Intervenors’ arguments should be rejected and the Ruling affirmed. The Notice does not affect the issues presented in Enbridge’s motion in limine, and no substantive changes to the Ruling establishing the scope of review in this proceeding are necessary.” Associations’ response brief on remand regarding Enbridge’s September 2 motion in limine, p. 3.

In its reply brief on remand, Enbridge disagreed with Bay Mills and the MEC Coalition, asserting that the Notice does not alter Enbridge’s activity as set forth in the application, it does not impact the Commission’s Act 16 jurisdiction, and it does not change the Commission’s MEPA review. In addition, Enbridge stated that Bay Mills and the MEC Coalition, ELPC/MiCAN, and

FLOW “fail to present any argument that justifies expanding the scope of this proceeding on the basis of the Notice.” Enbridge’s reply brief on remand regarding the September 2 motion in limine, p. 1. Enbridge asserted that the Notice does not revoke the Commission’s 1953 order that provides Enbridge the authority to construct, operate, and maintain Line 5.

In its reply brief on remand, the Staff disagreed with Bay Mills and the MEC Coalition, ELPC/MiCAN, and FLOW, stating that:

[t]hey explicitly or implicitly assume that the Notice will lead to the revocation and termination of Enbridge’s 1953 Easement to operate the existing dual pipelines on the Straits’ lakebed. Staff does not dispute the validity of the Notice, but given the uncertainty surrounding ongoing litigation, Staff does not assume that Line 5 will be shut down. And even if Line 5 is temporarily decommissioned until the pipeline can be relocated in the proposed tunnel—assuming Enbridge acquires all necessary regulatory approvals—the parties have not pointed to any caselaw or Commission precedent that a temporary decommissioning would automatically terminate the prior Act 16 authorization for Line 5 or require it to be reevaluated.

Staff’s reply brief on remand of ALJ Mack’s ruling on Enbridge’s September 2 motion in limine, p. 2. In addition, the Staff averred that the public trust doctrine and MEPA do not change the scope of the case.

Bay Mills and the MEC Coalition contended that Enbridge, the Associations, and the Staff “erroneously downplay the import of that revocation and termination.” Bay Mills’ and the MEC Coalition’s reply brief on remand, p. 1. Additionally, Bay Mills and the MEC Coalition asserted that the Staff’s arguments in its initial brief on remand are inconsistent with the Michigan Rules of Evidence (MRE), Commission precedent, and MEPA. Finally, Bay Mills and the MEC Coalition argued that Enbridge, the Associations, and the Staff recommend a limited review of the operational risks of Line 5, which improperly omits an analysis of GHG emissions that is required by MEPA.

In her reply brief on remand, the Attorney General disagreed with Enbridge’s characterization of the revocation and termination of the 1953 easement, asserting that the Notice changed the status quo on the issues of public need for the Replacement Project and the Commission’s MEPA review. She stated that “[t]he fact remains that the Notice was issued by the grantor of the 1953 Easement—the State of Michigan—and that in the absence of a valid and effective easement, the continued presence and operation of the Enbridge pipelines on state-owned bottomlands is unlawful.” Attorney General’s response brief on remand involving Enbridge’s September 2 motion in limine, p. 3. According to the Attorney General, Enbridge presumptively cannot continue operation of the dual pipelines and, therefore, the scope of the case should be broadened to reevaluate the issue of the public need for Line 5 and to include a review of the environmental effects of the Replacement Project.

ELPC/MiCAN asserted that “[t]he cases and Michigan Rules of Evidence [the] Staff references in support of its conclusion that the Notice does not impact the scope of this case are not relevant here.” ELPC/MiCAN’s reply to initial briefs on remand, p. 1.

On February 23, 2021, ALJ Mack issued a ruling on the remanded September 2 motion in limine (February 23 ruling). He noted that the initial ruling:

held that under Act 16 the proper inquiry for a proposal involving a segment of an existing pipeline is on that segment, as opposed to the entire pipeline system. Case No. U-20763, October 23, 2020, Ruling, pg. 15. Therefore, any evidence concerning the entirety of Line 5 is irrelevant. *Id.*, pgs. 15-16. The holding [in the initial ruling] remains before the Commission under the pending Appeals, but under the Order of Remand is to be reconsidered in light of the subsequent issuance of the Notice.

February 23 ruling, p. 13.

ALJ Mack stated that Bay Mills and the MEC Coalition, ELPC/MiCAN, the Attorney General, and FLOW argued that the Notice terminated Enbridge’s authority to operate Line 5 in

the Straits and, consequently, the Commission should reexamine the public need for the entire pipeline. However, he noted that “the 1953 Order issued under Act 16 establish[ed] that Line 5 serves a public need and is in the public interest.” February 23 ruling, p. 16. In addition, because the 1953 order does not have an expiration date or require renewal, ALJ Mack found that Enbridge’s authority to operate the other 641 miles of Line 5 remains in effect. Furthermore, ALJ Mack noted that the Commission has not executed proceedings pursuant to MCL 24.205(a) and MCL 24.292(1) to suspend, revoke, or cancel Enbridge’s Act 16 license to operate Line 5 that was issued in the 1953 order. Thus, ALJ Mack determined that the Notice did not extinguish Enbridge’s authority to operate the other 641 miles of Line 5 and it does not require a reexamination of the public need for the entire system.

Regarding the Commission’s MEPA review of the application, ALJ Mack stated that the initial ruling:

held [that] the conduct subject to review under MEPA is the proposal to relocate the dual pipelines into a Utility Tunnel. Concomitantly, the Initial Ruling granted the Motion as it pertained to the environmental effects of both the Line 5 system, and the extraction, refinement and ultimate consumption of the oil shipped on that system as being beyond the scope of the Commission’s MEPA review.

February 23 ruling, p. 19. He noted that Bay Mills and the MEC Coalition, ELPC/MiCAN, the Attorney General, and FLOW assert that the Notice broadens the MEPA review, thus allowing the Commission to consider the environmental effects of the oil transported on the system through the entirety of Line 5. ALJ Mack disagreed, stating that “[t]he Notice does not change the activity proposed in the Application, i.e., the conduct as that term is used in MEPA, the Commission’s jurisdiction over that proposal, or the legal authority underlying the Initial Ruling’s conclusion concerning the MEPA review.” February 23 ruling, p. 20 (footnote omitted).

Accordingly, ALJ Mack concluded that “the Notice is relevant under the proper Act 16 review of the project: whether a public need exists to replace the existing dual pipelines on Great Lakes bottomlands in the Straits of Mackinac with a single pipeline in a proposed Utility Tunnel.” February 23 ruling, p. 21. Additionally, he found that the Notice does not broaden the scope of the Commission’s MEPA review to consider the “environmental effects from the production, refinement, and consumption of oil transported on Line 5.” *Id.*

E. Permits Relating to the Construction of the Utility Tunnel

On January 29, 2021, EGLE granted Enbridge a set of permits relating to the construction of the utility tunnel, which were filed in this docket on February 5, 2021, as filing #U-20763-0574. Specifically, EGLE approved Enbridge’s applications for a National Pollutant Discharge Elimination System (NPDES) wastewater permit, a Natural Resources and Environmental Protection Act (NREPA) Part 303 wetlands protection permit, and a NREPA Part 325 Great Lakes submerged lands permit. On February 8, 2021, Enbridge filed in this docket a supplemental filing containing the responsiveness summaries for the NPDES permit and the NREPA Parts 303 and 325 permits.

F. Applications for Leave to Appeal Administrative Law Judge Dennis W. Mack’s Ruling Regarding the Remanded September 2, 2020 Motion in Limine and the April 21, 2021 Order

On March 9, 2021, Bay Mills, the MEC Coalition, ELPC/MiCAN, and FLOW each filed an application for leave to appeal ALJ Mack’s February 23 ruling. In its application for leave to appeal, Bay Mills asserted that:

[t]he Remand Ruling failed to address the bases upon which the Tribal Intervenors opposed Enbridge’s Motion in Limine and excludes from the contested case evidence concerning significant and relevant issues of deep importance to the Tribal Intervenors. If the Remand Ruling stands, the Tribal Intervenors will be deprived of the opportunity to present evidence of how the Project threatens their Treaty-protected rights.

Bay Mills' application for leave to appeal the February 23 ruling, p. 12. Specifically, Bay Mills argued that the February 23 ruling improperly excluded the following evidence that is relevant to the Commission's review of Enbridge's application: (1) the public need for Line 5, (2) the environmental effects of continuing to operate Line 5, and (3) the GHG emissions related to Line 5 and the Replacement Project. *Id.*, p. 14. Bay Mills contended that by excluding this relevant evidence, ALJ Mack has impermissibly narrowed the scope of the case, which is an error of law. In its application for leave to appeal, the MEC Coalition presented substantially similar arguments. *See*, MEC Coalition's application for leave to appeal the February 23 ruling, pp. 4-6.

ELPC/MiCAN argued that "the primary function of the [initial and February 23] Rulings is to limit discovery, and as a result limit the information presented to the Commission for consideration." ELPC/MiCAN's application for leave to appeal the October 23 and February 23 rulings, p. 2.¹⁵ ELPC/MiCAN asserted that ALJ Mack's initial and February 23 rulings are contrary to public interest and will have a negative impact on the environment. Accordingly, ELPC/MiCAN requested that the Commission reverse the initial and February 23 rulings, permit the admission of evidence pertaining to GHG emissions and the climate impacts from the Replacement Project, and perform the required MEPA review.

FLOW contended that the Commission should deny "Enbridge's thinly disguised effort through its motion in limine to severely constrict and prevent a comprehensive review of a fully developed record under Act 16, MEPA, and public trust law through its motion in limine and arguments on remand, which were adopted by the ALJ in its rulings." FLOW's application for

¹⁵ Because ELPC/MiCAN's application for leave to appeal is not paginated, the Commission clarifies that page 1 starts in natural order with the first page of the application.

leave to appeal the February 23 ruling, p. 13.¹⁶ In addition, FLOW reiterated that, pursuant to the GLSLA, Section 2129 of NREPA, and public trust law, Enbridge has not received the required authorization from EGLE for the 2018 easement, the 2018 easement assignment, or the 99-year lease for the Replacement Project. Furthermore, FLOW disputed Enbridge's claim that the 1953 order constitutes a "determination of public need or necessity for purposes of any easement, assignment, or 99-year lease for the Tunnel Project," and contended that the 1953 order cannot limit the Commission's consideration of the public need for Line 5 under Act 16. *Id.*, p. 21. Finally, FLOW argued that, pursuant to MEPA, the Commission must consider evidence relating to the impact of the tunnel and the continued operation of Line 5 on climate and the environment. In conclusion, FLOW requested that ALJ Mack's initial and February 23 rulings be reversed and remanded for a fully contested case regarding the public need for Line 5, an analysis of the alternatives to the Replacement Project, and a review of the environmental impacts of the Replacement Project.

In response, Enbridge disagreed with Bay Mills, the MEC Coalition, ELPC/MiCAN, and FLOW that ALJ Mack's initial and February 23 rulings impermissibly narrow the scope of the case. Enbridge asserted that the actual issues to be "presented in this Act 16 proceeding are straightforward," and "issues such as: the need for Line 5, the operation and safety of Line 5 in its entirety, the impact of greenhouse gases associated with products shipped on Line 5, the Marshall incident along Line 6B, [the] need for fossil fuels given the rise of electric vehicles, the public trust doctrine, and their overall general opposition to the fossil fuel industry" are "clearly outside the scope of an Act 16 proceeding." Enbridge's response to the applications for leave to appeal

¹⁶ Because FLOW's application for leave to appeal is not paginated, the Commission clarifies that page 1 starts in natural order with the first page of the application.

the February 23 ruling, p. 10. Enbridge requested that the Commission deny the applications for leave to appeal the February 23 ruling or, in the alternative, deny the relief requested in the applications.

The Staff responded that:

the ALJ properly considered all material relevant to the Commission’s review under MCL 483.1, *et seq*[.] (“Act 16”), the Michigan Environmental Protection Act (“MEPA”), applicable administrative rules, and Commission and court precedent to reach his decision. Staff acknowledges the significant public interest generated by the proposed project; however, public interest alone cannot provide blanket authorization to expand the statutory scope of this proceeding or allow consideration of extraneous and irrelevant material.

Staff’s response brief in opposition to joint appellant’s applications for leave to appeal the February 23 ruling, p. 2. In addition, the Staff disputed the claim by Bay Mills, the MEC Coalition, ELPC/MiCAN, and FLOW that the 1953 order failed to consider the public need for Line 5 and disagreed that the public need should be reexamined in this case. Furthermore, the Staff “agree[d] with the ALJ that the appropriate MEPA analysis for this case is limited by the activity proposed in the application and the Commission’s Act 16 jurisdiction” and that the scope of the Commission’s MEPA review may not be broadened to include Line 5 in its entirety. *Id.*, p. 23. Accordingly, the Staff requested that, in the event the Commission grants the applications for leave to appeal the February 23 ruling, the Commission affirm ALJ Mack’s initial and February 23 rulings.

MSCA contended that the Commission should deny the applications for leave to appeal the February 23 ruling “because Judge Mack properly concluded that the Governor and the [DNR]’s November 13, 2020 Notice of Revocation and Termination of Easement (the “Notice”) does not allow for a reexamination of Line 5’s need or its operational and safety aspects because this

Commission already considered those issues when it approved Line 5's construction in the 1953 Order." MSCA's response to the applications for leave to appeal the February 23 ruling, pp. 1-2.

Similarly, the Associations asserted that:

The ALJ correctly found that in determining whether there is a public need for the Line 5 Project, the question is whether there is a public need for the four-mile replacement pipeline, and the Notice provides no basis for expanding that review. And in reviewing the Line 5 Project under MEPA, the Remand Ruling correctly found that the focus is on the conduct under agency review, and the Notice does not change the activity proposed in Enbridge's application.

Associations' response to the applications for leave to appeal the February 23 ruling, pp. 6-7.

Additionally, MLDC asserted that the Notice does not affect Enbridge's application to relocate the dual pipelines into a tunnel beneath the Straits or alter the Commission's jurisdiction over Enbridge's proposed activities under Act 16. *See*, MLDC's response to the applications for leave to appeal the February 23 ruling, pp. 3-4. MSCA, the Associations, and MLDC requested that if the Commission grants Bay Mills', the MEC Coalition's, ELPC/MiCAN's, or FLOW's application for leave to appeal the February 23 ruling, the requested relief should be denied.

In the April 21 order, the Commission noted that "FLOW, the MEC Coalition, Bay Mills, and ELPC/MiCAN argue that the Commission should grant the applications [for leave to appeal] because a decision on the initial ruling and ruling on remand before submission of the full case to the Commission will materially advance a timely resolution of the proceeding and will prevent substantial harm to each appellant and to the public." April 21 order, pp. 53-54. The Commission agreed and granted the applications for leave to appeal. *Id.*, pp. 54, 72.

To determine whether ALJ Mack's initial and February 23 rulings impermissibly narrowed the scope of this case as alleged in the applications for leave to appeal, the Commission first examined the statutory requirements for reviewing the Act 16 application filed in this case. Pursuant to the requirements in Section 3(1) of Act 16, MCL 483.3(1), the Commission has developed and applied

a three-part test to determine whether to grant an Act 16 application: “(1) the applicant has demonstrated a public need for the proposed pipeline, (2) the proposed pipeline is designed and routed in a reasonable manner, and (3) the construction of the pipeline will meet or exceed current safety and engineering standards.” April 21 order, p. 55; *see also*, March 7, 2001 order in Case No. U-12334, pp. 13-17; July 23, 2002 order in Case No. U-13225 (July 23 order), pp. 4-5; January 31, 2013 order in Case No. U-17020, p. 5. In addition, pursuant to MCL 324.1705, the Commission must perform a MEPA review in pipeline siting cases. *See, State Hwy Comm v Vanderkloot*, 392 Mich 159, 189-190; 220 NW2d 416 (1974); *Buggs v Mich Pub Serv Comm*, unpublished per curiam opinion of the Court of Appeals, issued January 13, 2015 (Docket Nos. 315058 and 315064) (*Buggs I*), p. 9. However, the Commission stated that “courts have repeatedly found that these MEPA obligations are supplementary to other statutes and regulations and should be read *in pari materia* with other laws. *See, Mich Oil Co v Natural Resources Comm*, 406 Mich 1, 32-33; 276 NW2d 411 (1979).” April 21 order, p. 56.

The Commission also noted that Section 14b of Act 359, MCL 254.324b, created MSCA and that Section 14d(1) of Act 359, MCL 254.324d(1), transferred from the Mackinac Bridge Authority to MSCA “[a]ll liabilities, duties, responsibilities, authorities, and powers related to a utility tunnel as provided in section 14a and any money in the straits protection fund shall transfer to the corridor authority board upon the appointment of the members of the corridor authority board under section 14b(2).” April 21 order, p. 58 (quoting MCL 254.324d(1)). Next, the Commission noted that Section 14d(4)(a)-(b) of Act 359, MCL 254.324d(4)(a)-(b), directed MSCA to “enter into an agreement or a series of agreements for the construction, maintenance, operation, and decommissioning of a utility tunnel” no later than December 31, 2018, so long as: (1) MSCA finds that the governor has provided a proposed tunnel agreement by that date and

(2) the agreement “allows for the use of the utility tunnel by multiple utilities, provides an option to better connect the Upper and Lower Peninsulas of this state, and provides a route to allow utilities to be laid without future disturbance to the bottomlands of the Straits of Mackinac.” April 21 order, p. 59 (quoting MCL 254.324d(4)). The Commission asserted that “[t]he Agreements referenced in MCL 254.324d(4) have been duly entered into and affirmed by the courts. . . . Under Act 359, the 2018 tunnel easement has been assigned to Enbridge by MSCA. Exhibit A-6; Application, p. 13.” April 21 order, p. 59. Accordingly, in the April 21 order, the Commission found that:

[i]n its application, consistent with the Agreements executed with the State of Michigan and the easement it has been assigned by MSCA, Enbridge proposes to construct a replacement segment of Line 5 that crosses the Straits, to be housed in the utility tunnel. In its June 30 order, the Commission previously described the Replacement Project as the “replacement of the Dual Pipelines with a new, 30-inch-diameter, single pipeline to be relocated within a new concrete-lined tunnel.” June 30 order, p. 68. As such, the Commission must consider how both the three-part test under Act 16 and the requirements of MEPA apply to the Replacement Project. However, as described more fully below, the application of these provisions do not extend to the remainder of the line approved in the 1953 order.

April 21 order, p. 59.

After reviewing the statutory requirements, the Commission responded to FLOW’s, the MEC Coalition’s, and Bay Mills’ argument that ALJ Mack’s initial and February 23 rulings improperly exclude relevant evidence about the public need for Line 5. The Commission agreed with ALJ Mack that:

the scope of this case is dictated by two factors: (1) the activity proposed in the application, namely replacement of the existing 4-miles of dual pipelines located on the bottomlands with a pipeline located in a tunnel, as contemplated in Act 359 and various agreements with the State; and (2) the Commission’s jurisdiction over that proposal under Act 16, the administrative rules promulgated under its authority, and MEPA (initial ruling, p. 14), and that “the standards of Act 16 are well established and must be applied in this case.” [Initial ruling], p. 15.

April 21 order, p. 60.

Next, the Commission explained that the 1953 order approved the construction, maintenance, and operation of Line 5 in its entirety. In the April 21 order, the Commission noted that, in 1953, it was determined that:

Line 5 was fit for the purpose of carrying and transporting crude oil and petroleum as a common carrier in interstate and foreign commerce. In the 1953 order the Commission stated “[i]t appears to this Commission that in times of national emergency delivery of crude oil for joint defense purposes would be greatly enhanced by operation of the proposed pipe line.” 1953 order, p. 4. Denmark Township moved for denial of the application on grounds that the pipeline was not in the public interest. The Commission found the motion to be without merit, and it was denied. [1953 order], p. 8.

April 21 order, p. 60. Additionally, the Commission stated that, in 1954, the Michigan Supreme Court found that the construction and operation of Line 5 was “for a public use benefiting the people of the State of Michigan.” April 21 order, p. 61 (quoting *Lakehead Pipe Line Co v Dehn*, 340 Mich 25, 37; 64 NW2d 903 (1954) (*Lakehead*)).

In the April 21 order, the Commission asserted that the 1953 order did not set an expiration date for Enbridge’s authority to operate the Line 5 system, and no party is disputing Enbridge’s authority to operate the other 641 miles of Line 5 not included in the application. Furthermore, the Commission stated, “[n]either Act 16, nor Rule 447, nor Commission precedent require the Commission to make findings with respect to the length of time that an approved pipeline may operate, and such findings are not made in this order.” April 21 order, p. 61. Rather, the Commission averred, the proper scope of the proceeding is for the Commission to examine whether there is a public need for the Replacement Project as set forth in the application.

Additionally, the Commission agreed with ALJ Mack that “the Tribal treaty-reserved rights asserted by Bay Mills do not serve to expand the scope of the Commission’s Act 16 jurisdiction. The treaty-reserved rights do not confer on the Commission the ability to review the authority to own and operate the segments of an approved pipeline system that are not the subject of the Act 16

application before the agency.” April 21 order, p. 63. Therefore, the Commission denied Bay Mills’, the MEC Coalition’s, ELPC/MiCAN’s, and FLOW’s request to reverse ALJ Mack’s initial and February 23 rulings on this issue and it affirmed ALJ Mack’s conclusion that the legal scope of this case may not include a reexamination of the public need for the entirety of Line 5 and the environmental risks associated with the operation of the entire Line 5 system. April 21 order, p. 63.

Turning to the issue of the Commission’s MEPA review in this case, the Commission noted that Section 5(1) of MEPA states that the Commission may permit the attorney general or other person to intervene in a proceeding to challenge “conduct that has, or is likely to have, the effect of polluting, impairing, or destroying the air, water, or other natural resources or the public trust in these resources.” MCL 324.1705(1). Additionally, the Commission noted that Section 5(2) of MEPA states that, in the proceeding, the Commission shall determine “the alleged pollution, impairment, or destruction of the air, water, or other natural resources” and “conduct shall not be authorized or approved that has or is likely to have such an effect if there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare.” April 21 order, p. 65; MCL 324.1705(2). Accordingly, the Commission found that “[s]everal parties have intervened in this proceeding and have made assertions about the conduct at issue and its likelihood to have the effect of polluting, impairing, or destroying natural resources in their petitions to intervene, the briefs on this motion, and the offers of proof. The Commission must evaluate these assertions as provided under Section 5(2).” April 21 order, p. 65. However, the Commission found that its MEPA review only applies to the Replacement Project and cannot be broadened to include the entirety of the Line 5 system.

The Commission asserted that GHG emissions are “widely recognized as pollutants,” that they “fit within the statutory language of Section 5 of MEPA, and therefore must be reviewed in this case.” *Id.*, p. 66. The Commission stated that:

[i]t defies both well accepted principles of statutory interpretation as well as common sense to apply MEPA to a pipeline but not to the products being transported through it. As the Commission finds that conduct at issue in constructing the Replacement Project is indistinguishable from the purpose behind it or its result, the Commission’s obligations under MEPA must also extend to the products being shipped through the Replacement Project.

April 21 order, p. 64. Therefore, the Commission found that the parties may provide evidence of GHG emissions and any pollution, impairment, or destruction resulting from the Replacement Project as set forth in Enbridge’s application.

In addition, the Commission noted that there is a possibility that the Notice would be enforced and Enbridge would cease operation of the dual pipelines. The Commission stated that:

should the Commission at this point in the proceeding exclude evidence simply on the basis of the uncertainty surrounding the validity of the Notice, it would lose the ability to consider evidence related to the loss of the use of the 4-mile dual pipeline segment in the Straits should the State ultimately prevail. As such, the Commission is unwilling to exclude evidence under MEPA that compares the pollution, impairment, or destruction attributable to an operating 4-mile pipeline segment in the Straits with non-operational 4-mile dual pipeline segments.

Id., p. 67.

The Commission also noted that MEPA requires a determination of “feasible and prudent alternatives” to the Replacement Project and “a determination of whether the project ‘is consistent with the promotion of the public health, safety and welfare in light of the state’s paramount concern for the protection of its natural resources from pollution, impairment or destruction.’” MCL 324.1705; *State Hwy Comm*, 392 Mich at 159; *Buggs I*, p. 9.” April 21 order, p. 68. The Commission found that this proceeding is in the early stage and, therefore, it would be inappropriate to disallow arguments and evidence regarding:

whether there is any pollution, impairment, or destruction as a result of the Replacement Project – including in comparison to the possible closure of the dual pipeline segments currently in the Straits if the Notice is enforced; whether any pollution, impairment, or destruction is consistent with the protection of Michigan’s natural resources; and whether there are feasible and prudent alternatives to any pollution, impairment, or destruction that is found as a result of the Replacement Project. Given the many considerations involved in the production, transportation, and ultimate refining and consumption of the products being transported, evidence addressing how to account for GHG pollutant impacts attributable to the proposed Replacement Project, where the proper boundaries of GHG pollutants should be drawn, and the correct alternative(s) for comparison would be helpful to the Commission in making this determination.

April 21 order, p. 69. Therefore, the Commission partially granted the relief requested by Bay Mills, the MEC Coalition, ELPC/MiCAN, and FLOW in their applications for leave to appeal ALJ Mack’s initial and February 23 rulings on this issue. April 29 order, p. 69.

Next, the Commission agreed with ALJ Mack that the litigation involving the Notice will not affect the approvals granted in the 1953 order. The Commission stated that it “is expressly not seeking to re-examine or reconsider the approvals granted in that case, nor is it taking steps toward the possible ‘suspension, revocation, annulment, withdrawal, recall, cancellation or amendment of a license’ under MCL 24.292(1), MCL 24.205(a), and *Rogers* [*Rogers v Mich State Bd of Cosmetology*, 68 Mich App 751; 244 NW2d 20 (1976)].” April 21 order, p. 71.

Finally, the Commission noted that several parties requested permission to offer proofs of “the economics of fossil fuel pipelines, the risk of stranded costs, and the safety issues arising from leaks on any part of the pipeline system.” *Id.* The Commission found that those are not issues that may be considered in this case. *Id.*

G. Bay Mills Indian Community's, Grand Traverse Band of Ottawa and Chippewa Indians', Little Traverse Bay Bands of Odawa Indians', and Nottawaseppi Huron Band of the Potawatomi's Joint Petition for Rehearing of the April 21, 2021 Order

On May 21, 2021, Bay Mills, GTBOC, LTBB, and NHBP¹⁷ filed a joint petition for rehearing of the April 21 order in this docket (May 21 joint petition for rehearing). On June 11, 2021, Enbridge and the Associations each filed in this docket a response to the May 21 joint petition for rehearing. On that same date, the Staff filed a letter in this docket stating that it was not filing a response to the May 21 joint petition for rehearing.

In the May 21 joint petition for rehearing, the Tribal Intervenors stated that, in the April 21 order, the Commission correctly decided to include in its MEPA review consideration of any pollution, impairment, or destruction arising from the products being transported through the Replacement Project, including GHG pollution. However, the Tribal Intervenors disputed the Commission's finding that "[i]ssues raised by Bay Mills and other intervenors on potential pollution, impairment, and destruction of Michigan's natural resources resulting from existing sections of Line 5 are . . . outside the scope of the Commission's MEPA review as it relates to the Replacement Project." Tribal Intervenors' May 21 joint petition for rehearing, pp. 1-2 (quoting April 21 order, p. 64) (footnote omitted). The Tribal Intervenors argued that the Commission "improperly excluded from its [MEPA] review the effects of the products shipped through the [Replacement] Project in the form of an oil spill or leak from the existing sections of pipeline." Tribal Intervenors' May 21 joint petition for rehearing, p. 1. The Tribal Intervenors asserted that the Commission's decision is an error of law, leads to unintended consequences, and should be reversed on rehearing pursuant to Rule 437.

¹⁷ Collectively, Tribal Intervenors for purposes of this petition for rehearing.

Specifically, the Tribal Intervenors explained that, historically, there have been leaks and spills associated with Line 5 and that there are likely to be additional leaks and spills in the future. The Tribal Intervenors argued that it is illogical to allow the parties to introduce “evidence of the environmental impacts of the oil products shipped by the pipeline *after* they are combusted for purposes of transportation, electricity, and other industrial processes, releasing GHGs—but not allow evidence of the environmental impacts of the oil products themselves in the likely scenario that the pipeline spills or leaks.” Tribal Intervenors’ May 21 joint petition for rehearing, p. 2 (emphasis in original). In addition, the Tribal Intervenors contended that because the Replacement Project will permit Enbridge to continue to operate the Line 5 system in its entirety, any spill or leak of oil products from Line 5 “are the result of the Project, regardless of whether the spill or leak occurs from the portion of the pipeline that runs through the Straits.” *Id.*, p. 6. Therefore, the Tribal Intervenors asserted that MEPA requires the Commission to determine whether pollution, impairment, or destruction will result from oil being transported on the Line 5 system, including the Replacement Project.

The Tribal Intervenors asserted that the Notice itself recognizes that “[c]rude oil contains toxic compounds that would cause both short- and long-term harm to biota, habitat, and ecological food webs.” *Id.*, p. 5 (quoting the Notice, p. 8). The Tribal Intervenors also cited a recent report that recognizes that oil spills on Line 5 threaten natural resources.¹⁸ Furthermore, the Tribal Intervenors argued that courts routinely require agencies to consider the likelihood of oil spills in making environmental determinations, and the Tribal Intervenors pointed out that the language of

¹⁸ See, May 21 joint petition for rehearing, p. 5 (citing Michigan Technological University, *Independent Risk Analysis for the Straits Pipelines*, September 15, 2018, pp. 165-185).

Section 5(2) of MEPA provides that the alleged pollution “*shall be determined.*” Tribal Intervenor’s May 21 joint petition for rehearing, p. 6 (emphasis in original) (footnote omitted).

Accordingly, the Tribal Intervenor’s asserted that the April 21 order has the unintended consequence of treating the pollution from GHG emissions and oil spills differently. They also argued that the April 21 order stifles the Tribal Intervenor’s ability to address the effect of the Replacement Project on natural resources. Finally, the Tribal Intervenor’s contended that the April 21 order has the unintended consequence of prematurely limiting the scope of this case and preventing the development of a full record. They requested that the Commission apply the same reasoning used to allow the admission of evidence of GHG emissions related the Replacement Project and allow the admission of evidence regarding the effects of an oil spill or leak.

In their response, the Associations asserted that the Tribal Intervenor’s May 21 joint petition for rehearing is a rehash of arguments made in response to the September 2 motion in limine and should be denied on that basis. The Associations stated that the Commission already considered and rejected the Tribal Intervenor’s arguments regarding oil spills and leaks and they noted that the Commission stated that “the safety issues arising from leaks on any part of the pipeline system” are “not issues in this case.” Associations’ answer to the Tribal Intervenor’s May 21 joint petition for rehearing, p. 3 (quoting April 21 order, p. 71). The Associations contended that the allegation that a leak is likely to occur is speculative and hypothetical. They argued that GHG emissions are different from leaks, because the combustion of the oil products as an end use is the purpose of the pipeline, whereas spills or leaks are not the purpose of the pipeline and are not part of the conduct at issue in the Replacement Project. The Associations contended that nothing in MEPA requires the Commission to “consider the effect of speculative, unintended events that are

unrelated to the project being approved.” Associations’ answer to the Tribal Intervenor’s May 21 petition for rehearing, p. 7.

Enbridge also argued that the Tribal Intervenor’s arguments have been considered and rejected by the Commission. Enbridge asserted that there are differences between the consideration of GHG emissions and the consideration of pipeline safety issues. Enbridge noted that the Commission found that the purpose of Act 16 is directly tied to the transportation of hydrocarbons, whereas “the safety of the sections of the pipeline not at issue in the Application is not similarly indistinguishable from the construction of the pipeline segment at issue and the flow of product through the pipeline.” Enbridge’s answer to the Tribal Intervenor’s May 21 joint petition for rehearing, p. 3. Further, Enbridge argued, pipeline safety is within the exclusive jurisdiction of the federal Pipeline and Hazardous Materials Safety Administration (PHMSA) and, therefore, a review of the safety of the other 641 miles of Line 5 is outside the Commission’s purview. Enbridge asserted that the federal Pipeline Safety Act (PSA), specifically 49 USC 60104(c), provides PHMSA with exclusive jurisdiction to regulate the safety of already-constructed interstate pipelines, which preempts state jurisdiction. *See also*, 49 USC 60102(a)(2). Enbridge averred that if the Tribal Intervenor has complaints regarding the safety of the Line 5 system, they may take those complaints to PHMSA. Enbridge’s answer to the Tribal Intervenor’s May 21 joint petition for rehearing, p. 8, n. 20. Enbridge contended that parties may introduce evidence regarding the safety of the siting of the Replacement Project but argued that the April 21 order correctly recognizes the distinction between the Commission’s siting authority and PHMSA’s authority over the safety of operating pipelines. *See*, 49 USC 60104(c).

Enbridge further argued that the Commission’s decision regarding the review of GHG emissions under MEPA did not serve to expand the Commission’s jurisdiction over speculative

events that may occur on the entirety of the Line 5 system. Enbridge stated that the Commission's conclusion in the April 21 order "is wholly distinguishable from the claim that the Commission must also analyze the safety and integrity of the other 641-miles of Line 5" pursuant to MEPA. Enbridge's answer to the Tribal Intervenors' May 21 joint petition for rehearing, p. 10. In addition, Enbridge stated that the Tribal Intervenors:

failed to show "conduct that has, or is likely to have, the effect of polluting . . . natural resources" which is a prerequisite under MEPA. All they have done is make bald and speculative assertions relating to releases from other portions of Line 5 not before the Commission in this Application. They have not shown that any such releases are likely.

Id., p. 9, n. 22 (quoting MCL 324.1705(1)). Enbridge noted that, according to the Commission, the purpose of the four-mile Replacement Project is to transport hydrocarbons and, therefore, the resultant GHG emissions are subject to review under MEPA. Enbridge argued that the same reasoning does not apply to oil leaks and spills, which are not the purpose of the Replacement Project.

Finally, Enbridge disagreed with the Tribal Intervenors' claim that the April 21 order results in the unintended consequence of prematurely limiting the scope of the case. *See*, Mich Admin Code, R 792.10421(1)(d). Enbridge stated that "[t]he Commission's procedural rules encourage and allow for an early determination of the scope of issues in a proceeding." Enbridge's answer to the Tribal Intervenors' May 21 joint petition for rehearing, p. 11. In any event, Enbridge contended, the Tribal Intervenors were among the parties requesting an early determination of the issues. Furthermore, Enbridge noted that the April 21 order was issued a year after the application was filed, belying any argument that it was issued too early.

The Commission notes that, pursuant to Rule 437, a petition for rehearing may be based on claims of error, newly discovered evidence, facts or circumstances arising after the hearing, or

unintended consequences resulting from compliance with the order. A petition for rehearing is not merely another opportunity for a party to argue a position or to express disagreement with the Commission's decision. Unless a party can show the decision to be incorrect or improper because of errors, newly discovered evidence, or unintended consequences of the decision, the Commission will not grant a rehearing.

The Commission finds that the Tribal Intervenors' petition for rehearing repeats arguments that were made during briefing on the motion in limine and that were considered and rejected by the Commission. In the April 21 order, the Commission stated that:

Bay Mills asserts that the Commission must also examine the safety of Line 5, under obligations imposed by Tribal treaty rights, MEPA, and Act 16. Bay Mills points out that the Notice acknowledges the Tribal Nations' interests in the habitat of the Straits. Bay Mills states that "Treaty resources would be impacted by the approval of a Project that would allow Line 5 to operate well into the future." [Bay Mills' March 9, 2021 application for leave to appeal the ruling on remand], p. 24. Bay Mills argues that, under *State Hwy Comm* [*State Hwy Comm v Vanderkloot*, 392 Mich 159, 185; 220 NW2d 416 (1974)], the Commission must conduct an independent analysis of the evidence presented in this case, as well as consider the evidence embodied in other agencies' determinations. Bay Mills also contends that the Commission must consider alternatives, including:

Evidence regarding the risk of oil leaks and spills to the Great Lakes and inland waters and resources from Line 5 if the Project is constructed. The Commission should also consider the risks from either an alternative method of delivering the commodities carried by Line 5 or the existing pipeline operating for a shorter duration than if the Project is allowed and constructed (as it almost certainly will be, in light of the Revocation and Termination).

Id., p. 28. Bay Mills again argues that, under the APA [Administrative Procedures Act, MCL 24.201 *et seq.*], the parties must be allowed to rebut Enbridge's assertion that the Replacement Project will reduce the risk of an oil spill into the Great Lakes. Bay Mills wishes to present evidence regarding hydrologically connected waterways and potential environmental damage. Like the MEC Coalition, Bay Mills describes the Replacement Project as reinstating a nonoperational pipeline. Bay Mills again avers that nothing in federal law limits the Commission's authority to review Line 5's safety, stating "[b]ecause the Commission's obligations under Tribal Treaties, MEPA, Act 16, and the APA are not safety standards covered by Section 60104(c) of the PSA, none of those authorities are preempted by the PSA." *Id.*, p. 33.

April 21 order, pp. 41-42 (footnote omitted).

Addressing these arguments, the Commission found:

Similar to the analysis in applying the three-factor test on project need, whether the proposed project's design and route is reasonable, and whether it meets or exceeds current safety and engineering standards, the application of MEPA is limited to the conduct at issue in this case. As such, the Commission's MEPA review does not extend to the entirety of Line 5, including the 641 miles of Line 5 outside of the proposed Replacement Project, but only to the "replacement of the Dual Pipelines with a new, 30-inch-diameter, single pipeline to be relocated within a new concrete-lined tunnel." June 30 order, p. 68. Issues raised by Bay Mills and other intervenors on potential pollution, impairment, and destruction of Michigan's natural resources resulting from existing sections of Line 5 are therefore outside the scope of the Commission's MEPA review as it relates to the Replacement Project.

April 21 order, pp. 63-64. In the Commission's analysis applying the three-factor test, the Commission stated:

In its application, consistent with the Agreements executed with the State of Michigan and the easement it has been assigned by MSCA, Enbridge proposes to construct a replacement segment of Line 5 that crosses the Straits, to be housed in the utility tunnel. In its June 30 order, the Commission previously described the Replacement Project as the "replacement of the Dual Pipelines with a new, 30-inch-diameter, single pipeline to be relocated within a new concrete-lined tunnel." June 30 order, p. 68. As such, the Commission must consider how both the three-part test under Act 16 and the requirements of MEPA apply to the Replacement Project. However, as described more fully below, the application of these provisions do not extend to the remainder of the line approved in the 1953 order.

April 21 order, p. 59. The Commission thereafter described prior Commission cases in which it declined to re-examine the remainder of a pipeline system that interconnected with the segments proposed for work or repair targeted in a pipeline operator's application. The Commission found:

As Commission precedent under Act 16 shows, when deciding an application to construct or relocate pipeline, the Commission has never examined any portion of existing pipeline that is interconnected with the segment that is proposed in the applicant's project but not within the proposed route; nor has it examined how the proposed pipeline segment could affect the lifespan of an existing interconnected pipeline system. The Commission has similarly never considered the projected length of usage of a pipeline system in its review of the public need for the replacement or relocation of a segment of the system. For this reason, the Commission is unpersuaded by the MEC Coalition's argument that the first issue in this case is "whether there is a public need to replace the dual pipelines with a new pipeline in a tunnel so as to perpetuate Line 5 for decades to come." The MEC Coalition's application for leave to appeal the initial ruling, p. 10.

In determining public need, the Commission has instead looked at whether the applicant has explained the need for the construction or relocation of the segment or segments being proposed, and, where alleged, has considered the capacity and safety issues presented by the use of the existing pipeline segment that is proposed for improvement.

In the instant case, the Commission finds that the first issue is whether there is a public need to carry out the Replacement Project, a project to replace the dual pipelines with a new pipeline in a tunnel, and does not concern approved, existing pipeline that is merely interconnected with the segment that is the subject of the application. The public need for the existing portions of Line 5 has been determined. The public need for the Replacement Project has yet to be determined.

The alleged purpose of the Replacement Project is to improve the safety of the 4-mile segment that crosses the Straits. This is a question of fact that the parties may contest, and that is relevant to all three criteria that are considered in an Act 16 case: whether there is a public need for the Replacement Project, whether the Replacement Project is designed and routed reasonably, and whether the Replacement Project meets or exceeds current safety and engineering standards.

Finally, the Commission also agrees with the ALJ that the Tribal treaty-reserved rights asserted by Bay Mills do not serve to expand the scope of the Commission's Act 16 jurisdiction. The treaty-reserved rights do not confer on the Commission the ability to review the authority to own and operate the segments of an approved pipeline system that are not the subject of the Act 16 application before the agency.

April 21 order, pp. 62-63. Finally, regarding the Commission's review of the other 641 miles of Line 5 (and related arguments), the Commission stated:

Notably, the Commission finds that the outcome of the litigation surrounding the Notice has no impact on the approvals granted in the 1953 order. The Commission agrees with the ALJ that the 1953 order remains in effect, and the Commission is expressly not seeking to re-examine or reconsider the approvals granted in that case, nor is it taking steps toward the possible "suspension, revocation, annulment, withdrawal, recall, cancellation or amendment of a license" under MCL 24.292(1), MCL 24.205(a), and *Rogers*. Rather, as noted by the Staff, the Notice involves not Enbridge's rights under the 1953 order, but the ongoing property interest to continue to operate in its current location under the easement granted by the predecessor to the DNR. Staff's response to the applications for leave to appeal the ruling on remand, p. 19. As such, the notice and other procedural protections provided by the APA and *Rogers* are not at issue in this case.

Finally, the other offers of proof described in the applications for leave to appeal focus on the economics of fossil fuel pipelines, the risk of stranded costs, and the safety issues arising from leaks on any part of the pipeline system. These are not issues in this case.

April 21 order, p. 71.

As these excerpts show, the Tribal Intervenors' arguments were comprehensively examined and rejected. The Commission finds that the Tribal Intervenors' May 21 petition for rehearing fails to demonstrate an error of law in the April 21 order or unintended consequences flowing from the Commission's decision. In the April 21 order, the Commission found that its obligations under MEPA extended to the products being shipped through the Replacement Project. The Commission disagrees with the Tribal Intervenors' assertion that the logical extension of this finding is to expand the Commission's obligations under MEPA to usurp the clear federal jurisdiction over the safety of existing interstate pipelines laid out in the PSA. Although the April 21 order stated that nothing in the PSA precluded the Commission's required environmental review under MEPA, the Commission did not conversely find that MEPA preempted federal authority over the safety of existing pipelines because such a finding would be an error of law. *See*, 49 USC 60104(c). The

safety review of the entirety of Line 5 sought by the Tribal Intervenors is precluded by both federal law and by the fact that those sections of the pipeline outside of the Replacement Project are not at issue in this case. *See*, April 21 order, pp. 63-64. The April 21 order intentionally drew a clear distinction between the MEPA issues associated with the Replacement Project and the safety issues associated with Line 5 and, accordingly, rejected Bay Mills' arguments.

The Commission finds that Bay Mills' joint petition for rehearing does not meet the standards of Rule 437 and should be denied.

H. Bay Mills Indian Community's, Grand Traverse Band of Ottawa and Chippewa Indians', Little Traverse Bay Bands of Odawa Indians', and Nottawaseppi Huron Band of the Potawatomi's February 18, 2022 Application for Leave to Appeal

As part of their initial brief in this case, Bay Mills, GTBOC, LTBB, and NHBP¹⁹ filed an application for leave to appeal ALJ Mack's January 13, 2022 ruling in which he granted several of Enbridge's motions to strike (January 13 ruling).²⁰ The Tribal Nations contended that ALJ Mack erred in granting the motions to strike with respect to five of the Tribal Nations' witnesses: Ms. Gravelle, Mr. LeBlanc, Mr. Ettawageshik, Mr. Rodwan, and Dr. Cleland.

In their application for leave to appeal the January 13 ruling, the Tribal Nations began by noting that the Commission has indicated the need for "comprehensive testimony and evidence, and a well-developed record" in this case. Tribal Nations' initial brief, p. 47 (quoting the June 30 order, p. 69). The Tribal Nations urged the Commission to apply a broad evidentiary standard and asserted that, due to the January 13 ruling, "the perspectives of the Tribal Nations have been

¹⁹ Collectively, Tribal Nations for purposes of this application for leave to appeal.

²⁰ The Tribal Nations may appeal directly to the Commission without seeking leave to appeal because this order is the final disposition of the proceeding. Mich Admin Code, R 792.10433(5).

stricken in this matter.” Tribal Nations’ initial brief, p. 48. The Tribal Nations stated that the testimony and exhibits that were mistakenly stricken are:

- Direct Testimony of Whitney Gravelle – President of the Bay Mills Indian Community:
 - Page 6, lines 3 through 20
 - Page 12, line 13 through page 13, line 5
 - Sponsored Exhibits BMC-1 through BMC-5
- Direct Testimony of Jacques LeBlanc – Vice President of Bay Mills Indian Community and Tribal Fisherman:
 - Page 8, line 5 through page 9, line 19
- Direct Testimony of Frank Ettawageshik – Former Chairman of Little Traverse Bay Bands of Odawa Indians and climate change expert:
 - Page 7, line 3 through page 8, line 10
 - Page 8, line 11 through page 10, line 14
 - Page 10, line 15 through page 12, line 12
 - Page 14, line 2 through page 15, line 8
 - Page 15, line 10 through page 16, line 9
 - Sponsored Exhibits BMC-17 through BMC-30
- Direct Testimony of John Rodwan – Environmental Department Director of the Nottawaseppi Huron Band of the Potawatomi:
 - Page 12, line 11 through page 13, line 4
 - Page 14, lines 12 – 13
 - Page 16 lines 9 – 18
 - Page 16, line 19 through page 17, line 2
 - Sponsored Exhibit NBHP-3
- Direct Testimony of Dr. Charles Cleland – Ethnohistorian with decades of experience studying the culture and history of tribal communities in the upper Midwest:
 - Page 7, lines 16 – 20
 - Page 14, lines 11 – 15
 - Page 15, lines 3 – 7
 - Page 17, line 15 through page 20, line 10
 - Page 23, line 16 through page 24, line 2
 - Page 24, line 19 through page 25, line 20
 - Page 28, lines 5 – 8
 - Page 32, line 15 through page 34, line 22
 - Page 35, line 8 through page 36, line 10
 - Page 37, line 11 through page 39, line 9
 - Sponsored Exhibit BMC-35

Id., pp. 48-49. The Tribal Nations contended that the testimony and exhibits listed above relate directly to Enbridge's Act 16 application and the Commission's MEPA analysis.

The Tribal Nations argued that Ms. Gravelle's testimony addresses the route of the tunnel, the risk of an oil spill, and the issue of climate change. The Tribal Nations stated that the stricken exhibits, which include two tribal resolutions, two letters to the Governor, and two official comment letters, cast doubt on the safety and reasonableness of the route. The Tribal Nations asserted that ALJ Mack erred in finding that the testimony and exhibits address "concerns over the safety and operational aspects of the entirety of Line 5." *Id.*, p. 50 (quoting the January 13 ruling, p. 7). In the Tribal Nations' opinion, the testimony repeatedly refers to the dual pipelines and the Straits, and the exhibits are explicitly about the plan to replace the dual pipelines.

The Tribal Nations averred that ALJ Mack mistakenly stated that the Staff supported Enbridge's motion. The Tribal Nations claimed that, during oral argument, the Staff revised its position and opposed striking any of Ms. Gravelle's direct testimony that addressed the risk of an oil spill in the Straits. Tribal Nations' initial brief, p. 51 (citing 6 Tr 437). The Tribal Nations contended that the "double standard is apparent. Numerous other witnesses were permitted to discuss the risk of an oil spill in the Straits, but the President of an intervening Tribal Nation was not. This is inconsistent with the dictates of the APA." Tribal Nations' initial brief, pp. 51-52 (footnote omitted) (citing MCL 24.272(3)-(4)).

The Tribal Nations also contended that the testimony of Mr. LeBlanc was mistakenly stricken. The Tribal Nations stated that Enbridge provided testimony addressing potential impairment to fisheries and, thus, the Tribal Nations should be allowed to do the same. According to the Tribal Nations, Mr. LeBlanc has been a commercial fisherman in the Straits since the age of 12, and they observe that he should be allowed to testify as to the probable effect on fishing families if the

ecosystem is damaged by the Replacement Project. Tribal Nations' initial brief, p. 53. The Tribal Nations asserted that Mr. LeBlanc's testimony is foundational to his conclusion that the route is not appropriate.

The Tribal Nations asserted that the testimony and exhibits of Mr. Ettawageshik are central to the issue of climate change. The Tribal Nations stated that Mr. Ettawageshik addressed "the nature of climate change, the severity of the problem, what has been done to address the problem, and what must be done going forward to combat the global, existential threat." Tribal Nations' initial brief, p. 54 (footnote omitted). The Tribal Nations argued that ALJ Mack erred in finding that the April 21 order limited the Commission's examination of GHG emissions to the emissions associated with the four-mile pipeline section that is the subject of the Replacement Project. *See*, January 13 ruling, p. 8. The Tribal Nations posited that to perform the MEPA analysis, the Commission needs to understand climate change, its global nature, and its impact on the Tribal Nations. For example, the Tribal Nations contended, one of the stricken exhibits illustrates how climate change has influenced negotiations with the State of Michigan over treaty-protected rights.

Next, the Tribal Nations asserted that the testimony and exhibit of Mr. Rodwan were stricken in error. In the Tribal Nations' opinion, Mr. Rodwan's testimony regarding the Line 6B oil spill will assist the Commission in performing its Act 16 analysis by providing information on "how much weight and credibility should be given to Enbridge's statements about the safety of the Proposed Project." Tribal Nations' initial brief, p. 56. The Tribal Nations averred that the Line 6B oil spill polluted many tribal natural resources, and the Tribal Nations stated that its proffered evidence addresses the issue of inadequate pipeline safety standards.

Finally, the Tribal Nations contended that the testimony and exhibit of Dr. Cleland were stricken in error. According to the Tribal Nations, Dr. Cleland's testimony is relevant to the

Commission's Act 16 analysis because it addresses the terrestrial archeological sites in and around the Replacement Project area in the Straits, the unreasonableness of the proposed route, and the importance of considering alternatives. The Tribal Nations observed that ALJ Mack failed to provide an explanation as to why he found the expert analysis of the 141 terrestrial archeological sites to be outside the scope of this case. The Tribal Nations stated that "[t]he ALJ simply stated that the testimony in question goes beyond the scope of the hearing 'by addressing operational and safety aspects of Line 5 and the dual pipelines.'" *Id.*, p. 58 (quoting the January 13 ruling, p. 3). The Tribal Nations asserted that this testimony is well within the qualifications of Dr. Cleland and provides context for the Commission's analysis under both Act 16 and MEPA. In addition, the Tribal Nations asserted that Dr. Cleland's testimony addresses the need for further study.

In Appendix A to Enbridge's reply brief in this case, the company responded to the Tribal Nations' application for leave to appeal the January 13 ruling. Enbridge agreed with ALJ Mack's finding that Ms. Gravelle's evidence "addressing concerns over the safety and operational aspects of the entirety of Line 5" is inconsistent with the scope of the case as defined in the April 21 order. Enbridge's reply brief, Appendix A, p. 2 (quoting the January 13 ruling, pp. 7-8). Thus, Enbridge contended that it was appropriate to exclude the referenced testimony and exhibits of Ms. Gravelle.

Similarly, Enbridge argued that Mr. LeBlanc's testimony, which addressed the consequences of allowing Line 5 to continue to operate in the territory ceded by the Tribal Nations and the effects of climate change on tribal territories, is irrelevant and exceeds the scope of this case as defined in the April 21 order. Enbridge's reply brief, Appendix A, p. 3 (citing the January 13 ruling, pp. 6-7). Enbridge also noted that Mr. Ettawageshik's evidence addressed the history of climate change advocacy carried out by several tribes, and the company asserted that ALJ Mack

correctly found it to be focused on “climate change on a global level,” which is outside the scope of this case as set forth in the April 21 order. Enbridge’s reply brief, Appendix A, p. 4 (quoting the January 13 ruling, p. 8). In addition, Enbridge argued that Mr. Rodwan’s evidence addressed harms associated with the continued operation of Line 5 and harms arising from the general use of fossil fuels, as well as the effects of a release from Line 6B in the Kalamazoo River in 2010. Enbridge asserted that ALJ Mack correctly found this material to be irrelevant to the company’s Act 16 application in this case and the Commission’s MEPA analysis of the Replacement Project and inconsistent with the Commission’s findings in the April 21 order.

Finally, Enbridge argued that Dr. Cleland’s evidence was correctly stricken by ALJ Mack because it addressed the harms to cultural and historical sites from the continued operation of Line 5 as a whole and because Dr. Cleland purports to opine on the damage associated with the physical act of tunneling. Enbridge noted that Dr. Cleland is an ethnohistorian and has no training in tunnel construction or engineering. Enbridge contended that ALJ Mack correctly found that the testimony addresses “operational and safety aspects of Line 5” and that Dr. Cleland “lacks any basis to opine on the actual or potential impact to the physical world from the proposed project.” Enbridge’s reply brief, Appendix A, p. 7 (quoting the January 13 ruling, pp. 3-4). Enbridge further argued that ALJ Mack appropriately found that Exhibit BMC-35 was inadmissible as hearsay within hearsay, noting that ALJ Mack found that “[a] document that a witness relies on that is authored by someone who lacks personal knowledge of the facts it contains and does not identify who made the statements or their basis, is inherently unreliable.” Enbridge’s reply brief, Appendix A, p. 8 (quoting the January 13 ruling, p. 4).

On pages 50-58 of its reply brief in this case, the Staff responded to the Tribal Nations’ application for leave to appeal the January 13 ruling. The Staff contended that ALJ Mack properly

determined that, in general, the stricken evidence falls outside the scope of this proceeding as defined in the April 21 order. In addition, the Staff asserted that the Tribal Nations rehashed evidentiary arguments that have been considered and rejected by ALJ Mack and the Commission. The Staff averred that it is within the Commission's discretion to exclude material that is irrelevant, immaterial, or unduly repetitious. Staff's reply brief, p. 52 (citing MCL 24.275 and Mich Admin Code, R 792.10427(1) (Rule 427(1))). Quoting the April 21 order, the Staff argued that:

the Commission has already concluded that tribal input, although welcomed, does not expand its Act 16 jurisdiction over the application. (4/21/2021 Order, p 63.) ("Tribal treaty-reserved rights . . . do not confer on the Commission the ability to review the authority to own and operate the segments of an approved pipeline system that are not the subject of the Act 16 application before the agency.")

Staff's reply brief, p. 53 (quoting the April 21 order, p. 63).

With respect to Dr. Cleland, the Staff agreed with ALJ Mack that the witness lacks the expertise necessary to opine on the physical risks posed by the tunnel and agreed that Exhibit BMC-35 is hearsay within hearsay. The Staff noted that, in general, it agrees with ALJ Mack's January 13 ruling striking portions of Ms. Gravelle's and Mr. LeBlanc's testimony and exhibits:

The Tribes are correct that Staff noted on the record that "it is not seeking to strike testimony about the risk of an oil spill from the tunnel" or exclude testimony that may relate to a spill in the Straits. Because Staff supported portions of Enbridge's motions, Staff felt it was important to distinguish its position from comments Enbridge made on the record that testimony alleging that the proposed "project would . . . damage the Straits of Mackinac" should be stricken. (6 TR 429.) Staff also revised its written response to the motion to strike portions of President Gravelle's testimony to reflect this distinction. (6 TR 437.) Specific impacts of the project on the Straits, whether harmful or remedial, should be considered. With that said, Staff believes the issue of an oil spill in the Straits and an oil spill elsewhere on Line 5 due to the "continued operation of Line 5" is so interwoven in the stricken portions of testimony of President Gravelle and Jacques LeBlanc, Jr., that the [January 13 ruling] is correct in its determination and should be affirmed.

Staff's reply brief, pp. 54-55 (quoting Tribal Nations' initial brief, p. 51, n. 260). Finally, the Staff maintained that Mr. Rodwan's evidence was correctly struck because it pertains to the 2010 oil spill on the Kalamazoo River from Line 6B, which is outside the scope of this case as defined by the April 21 order.

In the March 17, 2022 order in Case No. U-21090 (March 17 order), the Commission stated that "it will reverse an ALJ's ruling if the Commission finds that a different result is more appropriate." March 17 order, p. 14 (citing, June 5, 1996 order in Case No. U-11057, p. 2; May 19, 2020 order in Case No. U-20697, p. 9); *see also*, November 10, 2011 order in Case No. U-16230, pp. 7-8; October 5, 2018 order in Case No. U-20165, p. 17. The Commission has reviewed the Tribal Nations' application for leave to appeal and finds that ALJ Mack's January 13 ruling should be affirmed.

Regarding the testimony and exhibits of Ms. Gravelle, the Commission agrees with ALJ Mack that "[t]he challenged testimony and exhibits can only be characterized as addressing concerns over the safety and operational aspects of the entirety of Line 5." January 13 ruling, p. 7. The Commission finds that ALJ Mack appropriately preserved Ms. Gravelle's testimony concerning the proposed route of the Replacement Project and the potential impacts to cultural resources and struck testimony and exhibits that substantially addressed the potential harms associated with the continued operation of Line 5 as a whole, which the Commission determined is outside the scope of this case.

The stricken portions of Mr. LeBlanc's testimony state that Line 5 could damage rivers and lakes in the ceded territory and that reliance of fossil fuels is harmful to the environment. The Commission agrees with ALJ Mack that these portions of Mr. LeBlanc's testimony address issues

outside the scope of this case and, therefore, the Commission finds that this testimony was properly stricken.

ALJ Mack found that portions of Mr. Ettawageshik's testimony and Exhibits BMC-17 through BMC-30 should be stricken because they fail to address the "discreet issue" of whether the hydrocarbons that are shipped through the Straits Line 5 segment may result in GHG emissions that pollute, impair, or destroy Michigan's natural resources or the public trust in those resources. January 13 ruling, p. 8. The Commission agrees. After a review of those portions of Mr. Ettawageshik's testimony and Exhibits BMC-17 through BMC-30, the Commission finds that the stricken testimony and exhibits substantially address global climate change and tribal advocacy on this issue, which are unquestionably important to the Tribes, but are outside the scope of this case. Therefore, the Commission finds that these portions of Mr. Ettawageshik's testimony and Exhibits BMC-17 through BMC-30 were properly stricken.

Regarding the stricken portions of Mr. Rodwan's testimony and Exhibit NHBP-3, the Commission agrees with ALJ Mack's finding that the testimony and exhibit focus on issues outside the scope of this case. Specifically, the stricken testimony and exhibit substantively include information and documents pertaining to the Line 6B release into the Kalamazoo River, the decommissioning of Line 5 as a whole, the harmful effects of fossil fuels in general, and the notation of cultural resources and sites outside of Michigan. Although these issues are of undeniable importance to NHBP, they are not relevant to the issue presented in Enbridge's application: replacement of the Straits Line 5 segment and relocation of the segment to a tunnel beneath the Straits' lakebed. Thus, the Commission finds that these portions of Mr. Rodwan's testimony and Exhibit NHBP-3 were properly stricken.

In the Tribal Nations’ application for leave to appeal, they argue that portions of Dr. Cleland’s testimony and Exhibit BMC-35 were improperly stricken because ALJ Mack failed to explain why the testimony and exhibit were not relevant to the Commission’s Act 16 determination and its MEPA analysis. ALJ Mack determined that because Dr. Cleland is an ethnohistorian, he “lacks any basis to opine on the actual or potential impact to the physical world from the proposed project,” including “the potential for a catastrophic event emanating from the tunnel.” January 3 ruling, p. 4. The Commission has reviewed the stricken testimony and agrees with ALJ Mack that the stricken portions address issues that are beyond the scope of this case and Dr. Cleland’s professed expertise. *See*, 10 Tr 1526-1530. In addition, the Commission agrees with ALJ Mack that Exhibit BMC-35 contains “hearsay within hearsay because not only does Dr. Cleland lack personal knowledge of the claims in it, the author of the document, Dr. O’Shea, claims no such knowledge.” January 3 ruling, p. 4. Therefore, the Commission finds that these portions of Dr. Cleland’s testimony and Exhibit BMC-35 were properly stricken.

IV. POSITIONS OF THE PARTIES

A. Direct Testimony

1. Enbridge Energy, Limited Partnership

Amber Pastoor testified that she is Enbridge’s Project Manager for the Replacement Project and she sponsored Exhibits A-1 through A-11. As an initial matter, she explained that Enbridge is an interstate common carrier pipeline company that operates in accordance with conditions of service and rates set in tariffs filed with the Federal Energy Regulatory Commission (FERC) and that the company “provides transportation service to qualified shippers of liquid petroleum” as nominated on a month-to-month basis. 7 Tr 558. She stated that Enbridge owns and operates the Lakehead System, which is the U.S. portion of an operationally integrated pipeline system located

within Canada and the United States, and which operates in seven Great Lakes states and spans approximately 1,900 miles from the international border near Necho, North Dakota, to the international border near Marysville, Michigan. Ms. Pastoor asserted that “Line 5 is a pipeline integrated within the Lakehead System.” 7 Tr 558.

Ms. Pastoor testified that the purpose of the Replacement Project is to address an environmental concern raised by the State of Michigan’s Pipeline Safety Advisory Board regarding the Straits segment of Line 5 known as the dual pipelines. She contended that relocating the Straits segment of Line 5 within a tunnel beneath the lakebed will eliminate the risk of a release of Line 5 products due to an accident such as an anchor strike. She asserted that the tunnel will be located 60 to 250 feet beneath the lakebed²¹ and that approximately 0.4 to 0.8 miles of pipe will be used to connect the replacement pipe segment to the existing Line 5 on both sides of the Straits. Ms. Pastoor stated that “[t]he [Replacement] Project will also include all the associated fixtures, structures, systems, coating, cathodic protection and other protective measures, equipment and appurtenances relating to the replacement pipe segment and to the existing Line 5 pipeline on both sides of the Straits.” 7 Tr 556-557.

Ms. Pastoor testified that the Replacement “Project does not include the tunnel itself;” rather, she contended, the tunnel will be constructed and maintained in accordance with the Tunnel Agreement (Exhibit A-5) entered into between MSCA and Enbridge pursuant to Act 359.

²¹ In Exhibit A-13.1, an update to Exhibit A-13 that contains the Tunnel Design and Construction Report for the Straits line 5 Replacement Segment (Tunnel Design and Construction Report), Enbridge noted that, on page 5 of the Tunnel Design and Construction Report, “there is reference to the tunnel ‘being at a depth of approximately 60 feet to 250 feet beneath the lakebed.’ Based on new data the tunnel will be at a depth of approximately 60 to 370 feet beneath the lakebed, except that from the TBM [tunnel boring machine] launch site on the south side the tunnel will be 30 feet below the lakebed and will taper to the depth of 60 feet or more below the lakebed for 250 feet from the shoreline.”

7 Tr 557. She explained that Enbridge must also obtain environmental permits from USACE and EGLE and that the tunnel will be constructed within the area described in the 2018 “Easement to Construct and Maintain Underground Utility Tunnel at the Straits of Mackinac” granted by the DNR and MSCA. *See*, Exhibits A-6 and A-11. Ms. Pastoor asserted that Enbridge plans to deactivate the dual pipelines once the replacement pipe goes into service within the tunnel in accordance with the Third Agreement (Exhibit A-1) and the 1953 easement (Exhibit A-2).

Ms. Pastoor described the work area for the Replacement Project as including 16 acres on the north side of the Straits and 25 acres on the south side and being located on property owned by Enbridge or property for which Enbridge has acquired the right of access. She explained that the replacement pipe segment contained in the tunnel “will be designed, installed, operated, and maintained in accord with federal pipeline safety regulations, specifically the Pipeline and Hazardous Materials Safety Administration (‘PHMSA’) pipeline safety regulations Parts 194 and 195 (49 Code of Federal Regulations ‘CFR’ Parts 194 and 195).” 7 Tr 561-562. In addition, she stated that the replacement pipe segment will tie into the existing Mackinaw Station on the south side of the Straits and the existing North Straits facility located on the north side of the Straits within the limits of disturbance created by the tunnel construction. Ms. Pastoor averred that the tie-in on the north side of the Straits is within the North Straits facility or on Enbridge-owned land in Moran Township, Mackinac County, Michigan; and the tie-in on the south side of the Straits is within the Mackinaw Station in Wawatam Township, Emmet County, Michigan. She contended that Enbridge will make modifications at its existing facilities to accommodate the change from the two 20-inch diameter dual pipelines to the single 30-inch diameter pipeline. Ms. Pastoor asserted that the Replacement Project will not change the annual average capacity of Line 5, which is currently 540,000 bpd. *See*, 7 Tr 564.

Ms. Pastoor explained that approximately two million labor staff-hours and 200 workers will be required to construct the tunnel and the Replacement Project. She stated that the “contractor has also committed to utilizing Indigenous Peoples for at least 10 percent of the total operating engineering and labor staff-hours worked.” 7 Tr 564-565. Ms. Pastoor also noted that Enbridge has acquired all necessary land rights to construct the project.

Finally, Ms. Pastoor described the alternatives analysis required by the First Agreement that was undertaken by Enbridge and submitted to the State of Michigan on June 15, 2018 (Exhibit A-9). She stated that:

Enbridge’s alternatives analysis concluded that construction of a tunnel beneath the lakebed of the Straits connecting the Upper and Lower Peninsulas of Michigan, and the installation of a replacement pipe segment within the tunnel, was a feasible alternative to the Dual Pipelines, and that this alternative would essentially eliminate the risk of a potential release [of Line 5 products] in the Straits.

7 Tr 566; *see also*, 7 Tr 567-569. She noted that on October 4, 2018, Enbridge entered into the Second Agreement (Exhibit A-10), which recognized that “the evaluations carried out pursuant to the First Agreement have identified near-term measures to enhance the safety of Line 5, and a longer-term measure – the replacement of the Dual Pipelines – that can essentially eliminate the risk of adverse impacts that may result from a potential release from Line 5 at the Straits.” 7 Tr 566 (quoting Exhibit A-10, p. 3). Ms. Pastoor asserted that in December 2018, Enbridge entered into the Tunnel Agreement (Exhibit A-5) and the Third Agreement (Exhibit A-1), both of which state that the Replacement Project and the tunnel should eliminate the risk of a release of Line 5 products into the Straits.

Paul Turner stated that he is an Environmental Specialist for Enbridge and acts as the project lead for environmental permitting for the Replacement Project. He sponsored Exhibits A-9, A-11, and A-12. Mr. Turner testified that he participated in the preparation of the Environmental Impact

Report (EIR) for the Replacement Project and its appendices, which include the Environmental Protection Plan (EPP) and the Unanticipated Discovery Plan (UDP). He explained that the team that prepared the EIR included wetland and wildlife scientists, archeologists, and environmental specialists, who consulted publicly available data sources. Describing the results of the EIR, he stated that:

The construction of the tunnel is not part of the [Replacement] Project that is the subject of this Application, but rather is the subject of the Joint Permit Application filed with EGLE and USACE, Exhibit A-11. The tunnel is also the subject of the Tunnel Agreement entered into between the Mackinac Straits Corridor Authority and Enbridge pursuant to 2018 PA 359. Given that the construction of the tunnel is not part of the [Replacement] Project, the impacts of the [Replacement] Project are minimal to the environment. The construction footprint for this [Replacement] Project – which includes storing the replacement pipe, welding the pipe, locating the replacement pipe segment into the tunnel, tying in the replacement pipe segment into Line 5 and installing all associated fixtures, structures, systems, coating, cathodic protection and other protective measures, equipment and appurtenances relating to the new 30-inch diameter pipeline to the already existing Enbridge facilities – is small. The pipeline construction will be contained within areas previously disturbed during the construction of the tunnel. Enbridge believes the construction and operation of the [Replacement] Project will result in minor short-term impacts on the human and natural environments. There would only be negligible temporary, and no permanent, impacts associated with the construction of the replacement pipe segment.

7 Tr 602-603. In addition, he stated that the Replacement Project will be constructed in accordance with the environmental permits obtained from EGLE and USACE. 7 Tr 604.

Next, Mr. Turner testified that Enbridge explored alternatives to the Replacement Project:

Specifically, the alternatives assessment considered, in addition to the tunnel alternative, installing a replacement pipe segment across the Straits by placing a pipe inside a larger, secondary containment pipe, which would be buried in a trench near the shore and laid on the lakebed covered with rock and a replacement pipeline installed through a horizontal directional drilling (“HDD”) method.

7 Tr 603. He explained that the trench alternative was rejected due to its potential environmental impacts during construction, and the HDD alternative was rejected because it was not technically

feasible. Mr. Turner asserted that the alternatives evaluation report concluded that the tunnel was the best alternative among those assessed.

Marlon Samuel testified that he is Vice President of Customer Service for Enbridge and that he is “familiar with the past, current, and forecasted usage of Line 5.” 7 Tr 754. Explaining the current use of Line 5, Mr. Samuel stated as follows:

Line 5 transports light crude, light synthetic, light sweet crude oil, and natural gas liquids (“NGLs”) volumes providing transportation service from Superior, Wisconsin to Sarnia, Ontario. Line 5 delivers NGLs to a facility at Rapid River in Michigan. At the Rapid River facility, much of the NGLs deliveries are converted to propane which is then distributed to heat homes and power industry in the Upper Peninsula. The non-propane NGL component are then re-injected back into Line 5, delivering to a Sarnia, Ontario facility for further processing. In the Lower Peninsula, Line 5 accepts Michigan light crude oil production at Lewiston, where Line 5 interconnects with another pipeline system. Also, in the Lower Peninsula, Line 5 delivers crude to the Marysville Crude Terminal that connects with a third-party pipeline, that then transports crude from the Marysville Crude Terminal to refineries in Detroit and Toledo. These refineries produce petroleum products, including gasoline and aviation fuels used by consumers in Michigan and surrounding regions. Line 5 light crude is also delivered to the Sarnia area, including local Sarnia refineries. A portion of the volume is delivered to Enbridge’s Sarnia operational terminal where the crude is then injected on pipelines that are ultimately being delivered to refineries in New York and elsewhere. Line 5 also delivers NGLs to a facility in Sarnia, where it is converted to propane for both local consumption and to be imported back to Michigan to meet Michigan’s needs. Line 5 is not transporting heavy crude oil and the terms of the September 3, 2015 Agreement between Enbridge and Michigan restricts Line 5’s transportation of heavy crude oil.

7 Tr 755-756. Mr. Samuel testified that, for the past 10 years, Line 5 has operated at about 90% of its annual average capacity of up to 540,000 bpd, and this use is expected to continue into the future “because there is lack of sufficient capacity on other pipelines to serve these markets and transport these volumes and types of light crude oil, light synthetic crude and NGLs.” 7 Tr 757. He stated that the nature of the service currently furnished by Line 5 will remain unchanged after the Replacement Project is complete.

Aaron Dennis testified that he is an Engineer Specialist for Enbridge and that he acts as the lead engineer on the Replacement Project. He stated that the purpose of his supplemental direct testimony is to provide the two supplemental exhibits that were requested by the Staff. He sponsored Exhibit A-13, which is the Tunnel Design and Construction Report “that explains how the Great Lakes Tunnel will perform as a location to construct, operate, and maintain the replacement pipe segment, and how the tunnel will act as a secondary containment facility.” 8 Tr 788. Mr. Dennis also sponsored Exhibit A-14, which consists of discovery responses provided by Enbridge to the Staff explaining “various aspects of the [Replacement] Project, such as the tie-in of the replacement pipe segment, pipe specifications, pipe support within the tunnel, and pipe bends.” 8 Tr 788.

2. The Commission Staff

Travis Warner testified that he is a Public Utilities Engineer Specialist in the Energy Security Section of the Commission’s Energy Operations Division. 12 Tr 1696. He sponsored Exhibits S-1 through S-8. Mr. Warner stated that the purpose of his testimony is to provide information on behalf of the Staff regarding the dual pipelines and Enbridge’s application for approval of the Replacement Project. In addition, Mr. Warner noted that as a part of the Staff’s review and analysis of Enbridge’s application, the Staff has been communicating and meeting with Michigan’s 12 federally recognized Indian Tribes since April 2020. He testified that two Tribes submitted comments and that, specifically, “the Gun Lake Tribe requests that several topics be included in Staff’s review and analysis of Tribal Treaty Rights” as they relate to the application. 12 Tr 1713. Mr. Warner stated that although some of the Tribes’ comments were submitted too late in the process to be incorporated into the Staff’s testimony, these comments are being submitted to the record as Exhibits S-4 and S-5.

Mr. Warner testified that since 2014, he has been “provid[ing] engineering support as part of an interagency technical team comprised of staff from the [DNR], [EGLE], and the Office of the Attorney General (AG) (the Technical Team).” 12 Tr 1698. He noted that in 2016, the Technical Team selected Dynamic Risk Assessment Systems, Inc. (Dynamic Risk) to compose a report for the State of Michigan that would examine alternatives to the siting of Line 5 and would include safety, environmental, and economic considerations (Alternatives Report). In addition, Mr. Warner stated that “in 2017, the Technical Team began working with Michigan [Technological] University (MTU) on a separate report that analyzed the environmental and economic consequences of a ‘worst case’ spill from the Dual Pipelines into the Straits of Mackinac (Risk Analysis).” 12 Tr 1715.

Mr. Warner contended that there were several key conclusions in the Alternatives Report and Risk Analysis. He stated that in the Alternatives Report, “‘anchor hooking’ was determined to be the dominant primary threat to the Dual Pipelines that could cause a rupture. Dynamic Risk estimated that this threat represented more than 75% of the annualized total threat probability” 12 Tr 1716 (quoting Exhibit ELP-24, p. 28). He noted that, according to Dynamic Risk, internal and external corrosion, selective seam corrosion, stress corrosion cracking, construction defects, and manufacturing defects are secondary threats. Mr. Warner testified that a second “significant finding of the Alternatives [Report] is that replacement of the Dual Pipelines within a tunnel beneath the Straits would likely be a feasible alternative to Line 5’s current configuration.” 12 Tr 1717. He stated that in Dynamic Risk’s opinion, the risk of a release of Line 5 products into the waters of the Great Lakes is negligible if the proposed Replacement Project is constructed.

Next, Mr. Warner explained that the Risk Analysis considered the amount of natural resources damages, the governmental costs incurred, and other public and private economic damages that would result from a worst-case-scenario release of Line 5 products into the Great Lakes. However, Mr. Warner noted that the Risk Analysis “did not consider any potential alternatives for replacing the Dual Pipelines, including within a tunnel, or the associated risk of environmental contamination with replacement alternatives.” 12 Tr 1717-1718. He stated that “[t]he final report was completed in 2018 and determined that a worst-case scenario with the highest economic impact would be one in which oil spreads westward from the Straits along the shore of Lake Michigan and reaches Wisconsin. This scenario would cause anticipated damages of around \$1.37 billion in total.” 12 Tr 1718. Mr. Warner testified that according to the Risk Analysis, the study was based on an accumulation of worst-case assumptions and does not include any notion of probability.

Mr. Warner stated that “[i]n 2017 and 2018, the Technical Team provided support in the State’s development of the three agreements between Enbridge and the State of Michigan relating to Line 5” 12 Tr 1715. He noted that pursuant to the stipulations set forth in the First Agreement executed in 2017, the State of Michigan and Enbridge agreed to “complete a report that assesses options to mitigate the risk of a vessel’s anchor puncturing, dragging, or otherwise damaging the Dual Pipelines.” Exhibit A-8, p. 4. Accordingly, Mr. Warner stated that the Technical Team employed an engineering company to assist in conducting the required study. 12 Tr 1720. He testified that the report concluded that a protective cover of gravel and rock of 72 feet in diameter and 6 feet in depth over the dual pipelines would be the most effective barrier to protect against an anchor strike. Mr. Warner stated that “this type of covering would cost approximately \$150 million to install along the entire length that the Dual Pipelines are exposed

on the lakebed” and that it would result in a 99% reduction in the risk of an anchor strike.

12 Tr 1721. However, he noted that the “the protective barrier would eliminate the ability to visually inspect the outside of the pipeline using a remote operated vehicle (ROV) or with divers as is done currently.” 12 Tr 1721. Mr. Warner testified that if the protective barrier is installed, Enbridge would have to inspect the integrity of the dual pipelines using in-line inspection (ILI) tools. In addition, he asserted that the “installation of the barrier would likely cause environmental impairments and would require at least 11 state and federal environmental permits and approvals.” 12 Tr 1721. Mr. Warner noted that the State of Michigan chose not to support this alternative.

Mr. Warner also noted that pursuant to the stipulations set forth in the First Agreement, the State of Michigan and Enbridge agreed to conduct an evaluation of alternatives for replacing the dual pipelines. He explained that the State of Michigan retained Dr. Mooney, Grewcock Chair Professor of Underground Construction and Tunneling, Colorado School of Mines, and Mr. Cooper, Senior Principal Engineer with HT Engineering, Inc., to provide the Technical Team with subject matter expertise regarding possible replacement alternatives. Mr. Warner stated that with Dr. Mooney’s and Mr. Cooper’s input, the Technical Team completed a report entitled “Alternatives for replacing Enbridge’s dual Line 5 pipelines crossing the Straits of Mackinac” (Alternatives Analysis), which was attached to Enbridge’s application as Exhibit A-9. Mr. Warner noted that the Alternatives Analysis “assessed the feasibility of three alternatives for replacing the segment of Line 5 that crosses the Straits:”

- (1) placing a new pipeline or pipelines in a tunnel under the Straits (Tunnel Alternative); (2) installing a new pipeline or pipelines under and across the Straits by the use of a horizontal directionally drilled method (HDD Alternative); and
- (3) installing a new pipeline or pipelines across the Straits with an open-cut method that includes secondary containment (Open-Cut Alternative).

12 Tr 1722.

According to Mr. Warner, the Alternatives Analysis found that the Tunnel Alternative would be feasible to construct and operate and that a concrete tunnel could serve as an effective secondary containment vessel in the event of a release of Line 5 products from the replacement pipe segment. In addition, he noted that the Alternatives Analysis stated that the Open-Cut Alternative would be safe and feasible, with a 30-inch diameter pipe to carry the hydrocarbon products and a 36-inch diameter outer pipe to contain a release of Line 5 products from the replacement pipe segment. However, Mr. Warner stated that “[t]he study concluded that the HDD Alternative would be technically infeasible based on current technology, primarily due to the diameter of pipe and the length of the drill required.” 12 Tr 1723.

Mr. Warner testified that the Staff considered the following alternatives to the Line 5 Replacement Project:

1. No Action Alternative
2. Replacement of the Dual Pipelines using the Open Cut Alternative
3. Replacement of the Dual Pipelines using the HDD method
4. Protection of the Dual Pipelines by installing rock armoring
5. Alternative transportation methods to Line 5 and associated GHG emissions
6. Product switching and alternative fuel sources in the absence of Line 5 throughput.

12 Tr 1726-1727.

Regarding Alternative 1, Mr. Warner explained that “[t]he No Action Alternative assumes that the Replacement Project is not completed as proposed and the Dual Pipelines would not be replaced and decommissioned in the foreseeable future.” 12 Tr 1728. He stated that if the dual pipelines continue to operate in an exposed position on the lakebed of the Straits, Enbridge must continue to monitor, maintain, and repair the pipelines. According to Mr. Warner, “to mitigate the risk of anchor strikes, Enbridge is [currently] monitoring vessel traffic by patrolling the Straits. In addition, Enbridge continues to visually inspect the exterior of the pipelines for damage or

unsupported spans. If these events occur, Enbridge would need to complete repairs using divers and vessels anchored in the Straits.” 12 Tr 1729. Furthermore, he noted that pursuant to the First and Second Agreements, Enbridge must temporarily discontinue operation of the dual pipelines during “Sustained Adverse Weather Conditions” and notify the State of Michigan. 12 Tr 1729 (citing Exhibit A-8, p. 4, and Exhibit A-10, pp. 4-5).

Mr. Warner asserted that the Staff is not arguing that the continued operation of the dual pipelines presents an acceptable or unacceptable risk to the state of Michigan. Rather, he stated that “the Replacement Project proposed is superior to the no action alternative because it not only reduces the risk of a spill into the Straits, but also eliminates the need to continue most of the measures described above once the Dual Pipelines are decommissioned as planned.” 12 Tr 1730.

Regarding Alternative 2, the Open-Cut Alternative, Mr. Warner testified that this alternative is inferior to the Replacement Project because the “the environmental impacts from this alternative would be substantially greater than those resulting from the Tunnel Alternative.” 12 Tr 1730. In addition, Mr. Warner noted that another drawback of the Open-Cut Alternative is that without the construction of a utility tunnel, there is no opportunity for third-party infrastructure to be installed.

Mr. Warner testified that Alternative 3, the HDD alternative, is not feasible because of current HDD limitations, as discussed in the Alternatives Analysis. 12 Tr 1730. Regarding Alternative 4, he stated that the Staff considered two options for installing rock armoring for the dual pipelines. However, Mr. Warner contended that “neither rock armoring variation would be a prudent alternative to the Replacement Project” because: (1) rock armoring would not contain a release of Line 5 products from the dual pipelines into the Straits, (2) the rock armoring could damage the pipe exterior, (3) the installation of the rock armoring will disturb the lakebed and require special

permits, and (4) the rock armoring will prevent exterior visual inspection of the dual pipelines.
12 Tr 1731.

Mr. Warner noted that Alternatives 5 and 6 are feasible only if Enbridge ceases operation of the dual pipelines prior to the completion of the Replacement Project. He stated that, “[i]f the Dual Pipelines are allowed to continue operating, a denial of this application by the [Commission] would presumably have no effect on the existing operations of Line 5 and the original approval of Line 5 under Act 16. Therefore, consideration of alternatives to Line 5 or the products transported is neither relevant nor appropriate.” 12 Tr 1727. However, Mr. Warner contended that the GHG emissions that relate to the Replacement Project are relevant to the proceeding whether or not the dual pipelines cease operations. He stated that, “[i]f a court determines the Revocation Notice to be valid and forces the Dual Pipelines to cease operation, the GHG emissions associated with Alternatives 5 and 6 may become relevant to the Commission’s MEPA obligation as well.”
12 Tr 1727.

Mr. Warner noted that in the April 21 order, the Commission stated that it “is interested in evidence that discusses the range of alternatives and environmental impacts that would be relevant in the event that that [sic] Dual Pipelines are shut down prior to completion of the proposed tunnel and Replacement Project.” 12 Tr 1708 (citing April 21 order, p. 68). He testified that if the dual pipelines cease operation, an alternative mode of transportation would be needed for Line 5 products. Therefore, he stated that the Staff “reviewed and considered GHG emissions associated with” transporting “the full volume of Line 5, 540,000 [barrels]/day” 12 Tr 1732.

Mr. Warner also noted that the Staff considered alternative locations for the Replacement Project. However, he stated that “the alignment of the proposed tunnel was already determined through geotechnical analysis and design considerations between the MSCA and Enbridge. Also,

EGLE permits have already been granted based on existing plans for the tunnel alignment.”

12 Tr 1732. Moreover, Mr. Warner contended that Enbridge already acquired the property rights to complete the tie-in segments and the installation of the Replacement Project. Therefore, he asserted that the Staff did not identify any feasible routing alternatives.

In conclusion, Mr. Warner stated that:

the replacement of the Dual Pipelines with a new pipeline in a tunnel below the lakebed serves a public need, is in the public interest, and is the best option out of the alternatives described above. . . . There are no alternatives that would be feasible and prudent when compared to the proposed Replacement Project. While the likelihood of a release from the Dual Pipelines is low, the consequences of such a release could be catastrophic for the Great Lakes, the surrounding region, and Michigan’s residents and economy. Replacement of the Dual Pipelines with a pipeline encased in a tunnel would substantially reduce the risk of oil reaching the Straits of Mackinac in the event of a rupture at the Straits crossing. Replacement would reduce the likelihood of damage to Line 5 which could cause a rupture; and mitigate, if not eliminate, the volume of oil that could reach the waters of the Great Lakes in the event a rupture does occur.

12 Tr 1736-1737.

David Chislea testified that he is the Manager of Gas Operations in the Commission’s Energy Operations Division.²² 12 Tr 1746. He sponsored Exhibits S-9 through S-11. Mr. Chislea stated that the purpose of his testimony “is to provide background and expertise relating to the [Commission]’s role in pipeline safety oversight.” 12 Tr 1750.

In his testimony, Mr. Chislea explained that PHMSA has the authority to inspect hazardous liquid pipelines in Michigan and enforce pipeline safety regulations for hazardous liquids. He asserted that when a hazardous liquids pipeline is being constructed in Michigan, the Staff “consults with PHMSA to ensure that they reviewed the design, will be inspecting the

²² On August 15, 2022, the Commission’s Gas Operations section was reorganized and renamed the Gas Safety & Operations Division, and Mr. Chislea became the director of the division.

construction, and will inspect ongoing operation and maintenance of the pipeline.” 12 Tr 1752.

He stated that:

On March 5, 2021, I sent a request letter to PHMSA outlining Staff’s questions to PHMSA regarding the progress of their safety review of Enbridge’s filing for the [Replacement] Project. These questions are the questions posed to PHMSA:
1) Based on your review of Enbridge’s Act 16 application and supporting testimony and exhibits, will the proposed 30” replacement pipeline comply with design, construction and testing requirements of 49 CFR Part 195 [Part 195]? 2) In light of the proposed 30” pipeline’s location in a tunnel across the Straits of Mackinac, do you see any obstacles to compliance with the operation, maintenance, integrity management, corrosion control and emergency response requirements of 49 CFR Parts 194 and 195?

12 Tr 1753; Exhibit S-9. Mr. Chislea noted that on March 26, 2021, PHMSA responded that its review is ongoing and that it did not have a final evaluation or compliance determination at that time. 12 Tr 1753; Exhibit S-10. He stated that on April 16, 2021, the Staff sent another letter to PHMSA inquiring about the date on which PHMSA expected to complete its final evaluation.

12 Tr 1753; Exhibit S-11.

Mr. Chislea noted that on August 26, and September 2, 7-9, 2021, the Staff met with PHMSA to discuss “the design, materials, construction, operations and maintenance, and emergency response of the replacement pipeline.” 12 Tr 1754. He asserted that during these meetings, the Staff and PHMSA discussed Enbridge’s ability to comply with the safety regulations in 49 CFR 194 and 195 and that “PHMSA did not express any design, construction, or operation issues that would preclude Enbridge from compliance with the pipeline safety regulations.”

12 Tr 1754.

According to Mr. Chislea, the Staff plans to continue working with PHMSA on the Replacement Project. He stated that:

Per 49 U.S.C. 60106 certified state programs are allowed to participate in the inspection of interstate operators. The Staff will continue to coordinate with PHMSA as they perform their safety reviews of the design and construction of the pipeline. PHMSA will be the agency performing inspections on the construction of the [Replacement] Project, though Staff anticipates ongoing communication and participation in these inspections and reviews.

12 Tr 1754.

Alex Morese testified that he is the State Administrative Manager of the Energy Security Section in the Commission's Energy Operations Division. 12 Tr 1762. He sponsored Exhibits S-12 through S-15. Mr. Morese stated that the purpose of his "testimony is to submit information on behalf of Staff relating to greenhouse gas (GHG) emissions associated with Enbridge's Line 5 Straits Replacement Project and alternatives under review." 12 Tr 1766. In addition, Mr. Morese noted that he is a member of the Technical Team and that "[s]ome of the specific topics relevant to [his] participation [in the Technical Team] included alternatives analysis of Line 5, propane and petroleum market analysis, risk analysis of the Straits water crossing, severe weather warnings, and identification of higher risk Line 5 water crossings in Michigan."

12 Tr 1765.

Mr. Morese testified that in the April 21 order, the Commission stated that the scope of this case should include an analysis of alternatives in the event that the Notice is enforced and Enbridge ceases operation of the dual pipelines. He explained that this case "could result in not only the replacement of a segment of pipeline into a tunnel but also a restart of a pipeline system idled by the loss of easement rights. The Commission stated that restarting the pipeline after a closure of the Straits segment should result in a broader Michigan Environmental Protection Act (MEPA) review that includes GHG emissions." 12 Tr 1767. Mr. Morese stated that Weston Solutions, Inc. (Weston) assisted the Staff in determining the environmental impacts of the Replacement Project and the tunnel, including an evaluation of GHG emissions. He testified that

in September 2021, Weston completed a report entitled “Green House Gas Emissions Evaluation,” which is set forth in Exhibit S-24.

Mr. Morese explained that with the assistance of Weston, the Staff evaluated GHG emissions in two scenarios: (1) tunnel construction with subsequent pipeline operation within the tunnel and (2) rail and truck transportation of Line 5 products in the event the dual pipelines are no longer operational. However, he clarified that the Staff’s analysis does not include “the ecological impacts of burning fossil fuels or the resulting impacts of global climate change . . . because the transportation alternatives in this case will likely result in no significant change to consumption of the primary end products (gasoline, diesel, jet fuel, propane, etc.) thus resulting in no material decrease in GHG emissions from the products being consumed.” 12 Tr 1769-1770.

For the Staff’s analysis of GHG emissions, Mr. Morese testified that the Staff focused on a 5- to 30-year timeframe because “[i]t is very difficult to speculate what the future holds in regard to technological developments/improvements, availability of energy infrastructure, or petroleum prices within regional markets or on an international scale.” 12 Tr 1770. He noted that the Staff provided baseline assumptions to Weston so that it could evaluate the GHG emissions related to alternatives to shipping petroleum products on Line 5. More specifically, Mr. Morese stated that the baseline assumptions are:

- 1) A Line 5 shutdown would not alter the demand at market end points for the product transported on Line 5.
 - a. Volumes shipped would remain consistent with historical averages and be required in those markets where refining and storage infrastructure resides.
 - b. GHG emissions will only be calculated between primary beginning and end points of the supply chain.
- 2) Natural Gas Liquids (NGLs) would not flow on Enbridge Line 1 from western Canada to Superior, Wisconsin (Superior) following a Line 5 shutdown.

- a. NGL or purity propane would be shipped via rail from western Canada to Sarnia, Ontario (Sarnia) and Rapid River, Michigan (Rapid River).
- 3) Crude oil would still flow on Enbridge Line 1 from western Canada to Superior.
- a. Crude oil would be transported via rail from Superior to Marysville, Michigan (Marysville).
- 4) The primary mode of transportation for crude oil and NGL would be rail.
- a. Trucking the volumes transported on Line 5 would not be feasible, except for the Michigan-produced crude oil volumes currently injected into Line 5 at Lewiston, Michigan (Lewiston).
 - b. Trucking may be used to supplement propane transportation.

12 Tr 1771.

Regarding Assumption 1, Mr. Morese contended that if Line 5 is shut down, he does not expect that fossil fuel extraction, the consumption of fossil fuels, or related GHG emissions will decrease. He stated that “[i]t is reasonable to assume that halting a primary petroleum transportation route/method to the region will not result in a demand reduction for products currently carried by Line 5. Existing and operational liquid pipelines serve solely as a transportation mode and not a determinate of demand.” 12 Tr 1772. Mr. Morese asserted that the only method for reducing GHG emissions is to reduce demand for, or consumption of, petroleum products by end users.

Mr. Morese noted that for “the transportation and supply chain beginning and end points . . . for the GHG emissions evaluation,” the Staff tried “to select the most feasible routes to transport these products based on current market locations, availability of supply, refining and distribution infrastructure, configuration of the Lakehead system, and previous studies by [Dynamic Risk] and Public Sector Consultants.” 12 Tr 1772-1773 (footnotes omitted). In addition, he explained that the Staff selected these routes because the results of the comparison between the pipeline and other

transportation modes are more consistent. However, Mr. Morese stated that “the analysis has also determined a per barrel-mile emission value for each transportation mode (i.e., pipeline, truck, rail) which provides flexibility in analyzing potential routes.” 12 Tr 1773.

Regarding Assumptions 2 and 3, Mr. Morese noted that according to Enbridge, if the Line 5 throughput is shut down, NGLs will no longer be transported on Line 1 because NGLs cannot be stored or transported “on any south routes of the Lakehead system.” 12 Tr 1773 (footnote omitted). In addition, he stated that “[b]ased on public statements by Plains Midstream (Exhibit S-12), ‘. . . shutting down Line 5 would result in the inevitable shutdown of Plains facilities at Sarnia, Rapid River, and Superior,’ [and] the economic viability of the Superior fractionator is in question should NGL shipments no longer pass through to Rapid River and Sarnia.” 12 Tr 1773. Mr. Morese testified that Enbridge may be able to ship NGLs on other pipelines of the Mainline System (Lines 6, 14, and 61) downstream of the Superior Terminal; however, “it would reduce the available capacity to ship crude oil on those lines and would likely require pump station and other upgrades.” 12 Tr 1775.

Regarding Assumption 4, Mr. Morese noted that:

According to research by Dynamic Risk and Public Sector Consultants, the most likely alternate [sic] mode(s) of transportation [of Line 5 products] are by rail for the largest volumes and distances, and truck for shorter volumes and distances. Dynamic Risk considered rail “the most practical and cost-effective” of alternative transportation methods and deemed a truck-only alternative “nonviable.”

12 Tr 1774 (quoting Exhibit ELP-24, pp. 349-350) (footnotes omitted). He explained that if the crude oil was to be transported by truck only, it would require 1,800 tanker trucks each day and transload facilities that are able to load 75 tanker trucks per hour, 24 hours per day.

Mr. Morese stated that the pipeline map depicted in Exhibit S-13 “demonstrates that without Line 5 takeaway capacity, there would not be enough available capacity to transport Line 5

volumes on the other pipelines of the Lakehead System and apportionment would be needed.”

12 Tr 1776 (footnote omitted). Moreover, Mr. Morese contended that in the Risk Analysis, MTU noted that crude oil refineries are configured to receive a specific mix of light-, medium-, and heavy-weight oils. He asserted that if the mix of oils shipped to refining facilities is altered, production must be reduced until substantial re-engineering of the refining facilities occurs.

Furthermore, Mr. Morese contended that if Line 5 is shut down and alternative modes of transportation are utilized, the price of end products such as gasoline, diesel, jet fuel, and propane will increase. He stated that:

According to Enbridge’s FERC filed tariff for the Lakehead System, the cost to transport light crude oil and NGLs between Superior, WI and the international boundary near Marysville, MI (Line 5) is \$1.63 and \$1.46 per barrel, respectively. Conversely, the cost to ship an equivalent barrel of petroleum product by rail is estimated to range from \$6.49 per barrel (\$0.155/gallon) to \$7.64 per barrel (\$0.182/gallon), on average.

12 Tr 1777-1778 (footnotes omitted).

Mr. Morese also noted that the Alternatives Analysis and London Economics International’s (LEI’s) “Assessment of Alternative Methods of Supplying Propane to Michigan in the Absence of Line 5” quantified the cost increases for gasoline and propane. He testified that, in the Alternatives Analysis:

Dynamic Risk estimated the gasoline price impact to Michigan consumers to be an increase of \$0.038/gallon in the scenario where an alternative transport mode (rail) is used to transport the volume of crude oil shipped on Line 5. Further, [Dynamic Risk] estimate[d] the impact to propane consumers to be \$0.026/gallon and between \$0.10 – \$0.35/gallon (dependent upon scenario) for lower and upper peninsula consumers, respectively. LEI did not publish estimates for cost impacts to gasoline but estimated that the propane price impact would be \$0.11/gallon (of which \$0.05/gallon would be borne by Michigan U.P. consumers) based on the lowest cost alternative. LEI further contends that the price impact to Lower Peninsula propane consumers may be negligible.

12 Tr 1778. Mr. Morese contended that these price increases are not likely to curtail current utilization of end-use products, explaining that “[c]onsumption of gasoline, diesel, jet fuel, and propane are relatively price inelastic. This means that it takes rather dramatic price movements for consumers to alter their purchasing habits.” 12 Tr 1779. Therefore, Mr. Morese concluded that the GHG emissions associated with extraction and end use should remain static if the throughput on Line 5 is eliminated.

Next, Mr. Morese explained that the primary end products that are shipped on Line 5 are: (1) propane for “home heating and cooking” and for “transportation and crop drying;” (2) butane, which is primarily used as “a motor gasoline blending component, but also as a commercial and industrial fuel source;” and (3) crude oil that is primarily used “as the feedstock for refinery operations which produce a wide range of petroleum end products such as gasoline, diesel, jet fuel, and propane.” 12 Tr 1780. He noted that according to U.S. Census Bureau data, “approximately 326,681 Michigan households use bottled, tanked, or LP [liquified propane] gas (propane) as their primary heating source.” 12 Tr 1780 (footnote omitted). Mr. Morese stated that Line 5 provides 42.9% of the propane supply for Michigan’s Lower Peninsula and 87.6% of the propane supply for Michigan’s U.P. He asserted that if the propane from Enbridge’s Superior fractionator is included in the calculation, the U.P. estimate increases to 93.8%.

Mr. Morese testified that in the short- or medium-term, it is not feasible for the majority of customers who purchase Line 5 propane to switch to natural gas for home heating and other fuel needs. He asserted that:

Propane is commonly used in rural areas of the state where natural gas infrastructure is not present, nor economical, to build out given the population density. Where natural gas main line extensions are considered/implemented, costs are shared amongst residents along the specified route and commonly reach thousands of dollars per customer. Additionally, any upgrade required for propane appliances (i.e., furnace, stove/oven, dryer, water heater) would likely be cost

prohibitive for most consumers. The EIA [United States Energy Information Administration], in their 2021 Annual Energy Outlook (AEO) Assumptions, list the installed cost for a natural gas furnace to range between \$2,050 and \$3,040. Costs associated with other appliances (~\$3,110) are detailed in the table below. Whether a propane appliance requires replacement vs. installation of a fuel conversion kit is highly dependent on the age of the appliance.

12 Tr 1781-1782 (footnotes omitted). Additionally, Mr. Morese opined that if propane or natural gas customers were to switch to electric heat, “such as an air-source heat pump,” there will likely be reductions in GHG emissions. 12 Tr 1782. However, he contended that switching to electricity for home heating and other energy needs is not an economical alternative for a majority of propane customers. Mr. Morese stated that “according to the American Council for an Energy-Efficient Economy (ACEEE) for northern midwestern climates such as Michigan, there is no payback over the lifecycle of the appliance” for switching to an electric air-source heat pump. 12 Tr 1782.

Mr. Morese testified that the consumption of liquified petroleum gases, jet fuel, and distillate fuel oil is projected to increase between 2020 and 2050. However, he noted that the consumption of motor gasoline is to remain static for the next 30 years, explaining that according to the U.S. Department of Energy and the “Electric Vehicle Cost-Benefit Analysis” conducted by M.J. Bradley & Associates LLC, electric vehicle adoption is expected to increase between 2020 and 2050. 12 Tr 1783-1788. Nevertheless, Mr. Morese stated that based on the AEO, “[i]t is evident that the EIA expect[s] conventional fueled vehicles to still have a considerable market share in the long-term.” 12 Tr 1784.

If throughput on Line 5 is unavailable, Mr. Morese stated that alternative modes of transportation such as rail and truck will be necessary to transport petroleum. To determine the GHG emissions related to these alternative modes of transportation, he explained that:

Using the baseline parameters established by the [Staff] (detailed in [12 Tr 1771-1772]), Weston sought to determine variables (i.e., shipping distance, approximate weight of products, size and number of vehicles required, equipment used, etc.)

required for use in the GHG Emissions from Transport or Mobil Sources tool by the Greenhouse Gas Protocol [GHG Protocol] and the World Resources Institute. These inputs were then used to calculate approximate GHG emissions associated with transporting petroleum via rail and truck.

12 Tr 1789 (footnote omitted). He also stated that Weston calculated the GHG emissions associated with the construction of the tunnel for the Replacement Project by analyzing the equipment used for excavation, transportation, boring, and overall tunnel construction. Further, Mr. Morese asserted that using the data provided by Enbridge, Weston calculated the GHG emissions related to transporting petroleum on Line 5. He contended that “[t]his allows for a direct comparison of emissions associated with transportation of products between beginning and end points while providing flexibility to adjust those pathways while maintaining a basis for comparison.” 12 Tr 1789.

Next, Mr. Morese stated that Weston used the GHG Protocol model “to estimate the emissions associated with transporting crude oil, NGL, and propane between critical refining and distribution hubs via different modes of transport. Staff calculated two additional routes to provide more flexibility to the NGL/propane analysis.” 12 Tr 1790. He noted that to assist in the Staff’s evaluation, Weston calculated the GHG emissions per-barrel-mile value for each proposed route or mode of transport. Mr. Morese asserted that pursuant to Weston’s analysis, transporting petroleum products via rail, rather than by truck, produces significantly less GHG emissions. 12 Tr 1790.

In conclusion, Mr. Morese stated that Weston’s analysis demonstrates that the GHG emissions associated with transporting petroleum products via rail or truck are substantially more than the GHG emissions related to shipping the same amount of petroleum products on Line 5. He contended that the Staff would “like to emphasize the following observations and conclusions:”

1) The appropriate framework for evaluating GHG emissions for the alternatives before the Commission should be bounded by transportation methodology only. If Line 5 throughput is unavailable, the extraction, refining, and consumption of

petroleum is unlikely to change significantly, therefore resulting in similar GHG emissions for these activities.

2) While the potential for Michigan residents and businesses to shift to natural gas or electricity for space heating and other appliances is technically possible, this transition will come at a significant financial cost without appropriate incentives and/or policy changes. Based on prior research by Public Sector Consultants, approximately 45% of Michigan's propane volume is derived from Line 5. Considering an approximate cost of \$8,000 per household, it would cost over [\$]1.1 billion dollars to shift 45% of Michigan's 327,000 propane households to an alternative. This transition would likely take a considerable amount of time to accomplish due to supply chain considerations, technical workforce availability, and financial requirements, making this infeasible over the short term.

3) The ongoing transition to light duty [electric vehicles] will likely reduce Michigan's demand for motor fuels (gasoline and diesel) in decades to come but is currently not a viable alternative to the products shipped on Line 5. Infrastructure improvements such as increased charging stations, home electrical system upgrades (meter, charger, panel), and grid improvements are needed to realize this potential. Current and projected sales of traditional internal combustion engines along with the resiliency of these vehicles within the automotive fleet reinforce the continued need for access to fossil fuels in the short to medium term.

4) Utilizing truck and rail as alternative modes of transport if throughput on Line 5 ceases will lead to an increase in GHG emissions. Based on the table above [set forth in testimony], GHG emissions associated with moving an equivalent volume of petroleum through a combination of rail and truck will result in approximately 160 percent more GHG emissions than the shipment of these products via pipeline.

5) Staff concludes that when considering the alternatives, pipeline transportation of the petroleum products in consideration will result in the least GHG emissions and is therefore the most feasible and prudent alternative as required for consideration under MEPA.

12 Tr 1791-1792.

Daniel N. Adams stated that he is a Tunnel Engineer and Chief Executive Officer of McMillen Jacobs Associates. 12 Tr 1811. He sponsored Exhibits S-16 and S-17. Mr. Adams testified on behalf of the Staff, stating that the purpose of his "testimony is to address concerns on risks of leakage from the tunnel in the event that the pipe within the tunnel leaks." 12 Tr 1814. He

explained that Exhibit S-16 is a “whitepaper” that was prepared under his direction and review that:

documents our assessment of several items that limit the potential for escape of petroleum fluids from the tunnel in the event of a pipe rupture within the tunnel. These items, in order of their effectiveness preventing materials from escaping the tunnel, are external hydrostatic pressures, gasketed segmental lining, annular grout, rock cover, and soil cover. The external hydrostatic pressure and gasketed segmental lining provide the most effective means of secondary containment, and result in a very low probability of fluids escaping from the tunnel.

12 Tr 1814.

Mr. Adams testified that Exhibit S-17 is a geotechnical data report provided by Enbridge that explains the drilling investigation, describes the expected geologic conditions, and includes a graphic model that details the bedrock formations along the proposed tunnel route. He stated that “[t]his document was used to determine ground conditions at tunnel level and above the tunnel, for purposes of determining secondary containment provided by the ground.” 12 Tr 1815. In addition, Mr. Adams asserted that he reviewed Enbridge’s “Report to the State of Michigan Alternatives for Replacing Enbridge’s Dual Line 5 Pipelines Crossing the Straits of Mackinac” (Exhibit A-9), which describes the feasibility of constructing the tunnel and the proposed construction methods. He testified that “[t]his report discussed the use of precast concrete tunnel linings (PCTL) with gaskets as both a short and long term lining system. This system has a proven record for providing a stable and mostly watertight tunnel system.” 12 Tr 1816.

Mr. Adams noted that, according to Enbridge, the cavity for the tunnel will be excavated using a slurry TBM. He stated that the TBM “will be launched from the south side of the straits from a portal excavation, and will excavate north across the Straits. The TBM will install a gasketed segmental [PCTL] within the TBM, and push off of the assembled lining to advance the TBM and tunnel excavation.” 12 Tr 1817. Mr. Adams explained that the small ring-shaped void between

the PCTL and bedrock will be filled with backfill cement grout as the TBM advances, which will lock the PCTL in place. 12 Tr 1817. He contended that:

The TBM will excavate with full face pressure, matching the external hydrostatic pressures and anticipated ground loads, throughout the drive. For planned or unplanned maintenance stops, either work will be performed under hyperbaric pressures within the front of the machine to balance external pressures; or a “safe haven” will be created to limit risks of instability and/or excessive inflows in non-pressurized conditions. The TBM will be retrieved from a shaft on the north side of the Straits.

12 Tr 1817. Mr. Adams stated that after reviewing Enbridge’s proposed construction method for the Replacement Project, he finds that there is a low risk that Line 5 products will escape the secondary containment tunnel in the event of a rupture of the replacement pipe segment.

Mr. Adams noted that he did not attend the Commission’s July 27, 2021 technical consultation between the Staff and Michigan’s federally recognized Tribes, but stated that he was briefed on the proceedings by his project manager. He stated that “[i]ssues that were raised during the meeting were directly answered” and that none of the issues required additional reviews. 12 Tr 1818.

In conclusion, Mr. Adams contended that there are no feasible and prudent alternatives to Enbridge’s proposed Replacement Project relating to secondary containment. He testified that “[t]he construction techniques proposed represent the state of the art in the industry for secondary containment, and have been developed to deal with anticipated ground conditions, with mitigation measures for unanticipated conditions.” 12 Tr 1818.

Chris Douglas stated that he is a Project Manager/Environmental Consultant at Weston.

12 Tr 1822. He sponsored Exhibit S-18. Mr. Douglas testified that he is:

providing expert witness testimony on behalf of Staff based on reviews or document preparation completed by [him] or under [his] supervision. The subject matter of these reviews includes environmental reviews of specific project related documents for compliance with MEPA, high level review of EGLE permits, Tribal Treaty Rights and Resources, and preparation of a Greenhouse Gas (GHG) Emissions Evaluation. As project manager for Weston’s work with Staff, [he is]

also providing an overview of topics covered by other Weston experts and their testimony.

12 Tr 1828. He explained that Exhibit S-18 is a summary of Weston's review of EGLE's permits, which includes the NREPA Parts 303 and 325 permits and the NPDES Part 31 permit for the Replacement Project. Mr. Douglas asserted that although he reviewed Enbridge's application, Mr. Turner's testimony, and the EIR set forth in Exhibit A-12, his testimony focuses primarily on the NREPA and NPDES permits.

Mr. Douglas testified that "Weston provided a high-level review of the permits. Two Weston staff subject matter experts (one in wetlands and one in NPDES/surface water discharge) conducted the reviews under [his] supervision." 12 Tr 1832. In addition, Mr. Douglas noted that he personally reviewed the permits to ensure that Weston had a comprehensive understanding of the Replacement Project. He stated that Weston presumes that the permits were appropriately reviewed and approved by EGLE and that the permits comply with state and federal regulations. Mr. Douglas asserted that "[t]he purpose of Weston's high-level review of the permits was to identify any environmental issues that may not have been addressed in the permitting process without duplicating efforts by other agencies (i.e., EGLE Water Division, etc.)." 12 Tr 1832-1833.

According to Mr. Douglas, Weston found that the EGLE permits addressed impacts to wetlands, surface water, endangered species, submerged lands, and local culture and archeology. In addition, he contended that the EGLE permits specify discharge requirements, biological assessments, and wetland mitigation. However, Mr. Douglas stated that Weston identified several potential environmental impairments that may result from the Replacement Project: (1) "increased noise, light, and particulates, surface water impacts, groundwater impacts, impacts to flora and fauna;" (2) "noise impacts to aquatic life, light impacts due to construction, potential release of hazardous materials, disturbances to shipping and vehicular traffic;" and (3) possible impairments

to cultural and archeological resources. 12 Tr 1833-1834. Nonetheless, he asserted that Weston did not identify any issues or environmental concerns relating to the permits so long as Enbridge complies with the monitoring, reporting, and screening requirements set forth in the permits; follows all special instructions; and executes all required mitigation measures. Mr. Douglas noted that Weston's conclusions regarding the permits are set forth in Exhibit S-18.

In conclusion, Mr. Douglas asserted that there are no feasible and prudent alternatives to the location, the land requirements, or the construction techniques for the Replacement Project.

Kathleen Mooney stated that she is an Environmental Consultant at Weston. 12 Tr 1839. She sponsored Exhibits S-19 through S-21. Testifying on behalf of the Staff, Ms. Mooney explained that:

Weston was tasked with review of Enbridge's EIR which is a 102-page document that describes the potential environmental impacts and the measures that Enbridge proposes to use to mitigate those impacts during construction of the replacement pipeline. Construction of the tunnel and decommissioning of the dual pipelines were outside of the scope of the EIR. As previously noted, Weston's original SOW [scope of work] only included the replacement pipeline installation and not the tunnel construction. However, review of potential impacts of the tunnel construction was later added to Weston's SOW. Weston reviewed the EIR to determine if any potential environmental impacts were not addressed in the document.

12 Tr 1845-1846.

Ms. Mooney testified that she reviewed the location and land requirements for the Replacement Project and the pipeline tie-in segments. She stated that "[t]he proposed Tunnel Alternative would require 10-15 acres of workspace on the north shore, and 2-8 acres on the south shore. Disturbed onshore areas would be reclaimed after construction with [a] permanent operational footprint remaining of up to one acre at entry and exit locations where aboveground portal structures would be built." 12 Tr 1847-1848. Ms. Mooney explained that to construct the 21-foot diameter tunnel, Enbridge would bore up to 371 feet below the lakebed of the Straits and

line the tunnel with concrete. She noted that there will be tunnel access portals on the north and south shores of the Straits.

However, Ms. Mooney contended that her review revealed several environmental issues and missing details in the EIR. She stated that “[a]fter completion of the review, [she] assisted Chris Douglas of Weston in preparing discovery questions, which were submitted by [the Commission] Staff to Enbridge (Responses attached as Exhibits S-19 and S-21). These questions requested additional information from Enbridge about control of potential environmental impairments.”

12 Tr 1846. She asserted that Weston reviewed Enbridge’s discovery responses and determined that some questions were inadequately answered and recommended that the Staff follow-up with additional discovery requests. Ms. Mooney contended that after a review of the discovery responses to the follow-up request, Weston found that Enbridge failed to fully answer the questions and, therefore, Weston was unable to “completely evaluate the potential environmental impairments associated with the project. Weston has identified the following potential environmental impairments as a result of the project if adequate preventative measures are not planned, executed, monitored, and documented prior to, and during, the project:”

1. Increased noise generated from construction operations that may impact nearby residences and fauna.
2. Increased dust/particulates generated during construction that may impact nearby residences and fauna and possibly impact surface water.
3. Increased light generated from construction operations that may impact nearby residences and fauna.
4. Increased light from construction and operation of the project that could have potential impacts to the Headlands International Dark Sky Park located south and west of the southern workspace.
5. Surface water impairments:
 - a. Impacts such as dewatering operations during construction of the tunnel.

- b. Impacts associated with construction equipment traffic.
 - c. Impacts associated with using lake water for hydrostatic testing of the pipe.
- 6. Environmental impairments to local residences and fauna associated with construction.
- 7. Air quality impacts associated with use of additional internal combustion engines during construction and operation.
- 8. Groundwater impacts:
 - a. Impacts to groundwater during construction due to spills of hazardous materials from construction equipment.
 - b. Impacts to drinking water wells due to construction.
 - c. Impacts to shallow groundwater aquifers and groundwater quality during trenching, excavation, and backfilling maintenance activities.
 - d. Impacts to surface drainage and groundwater recharge patterns altered by clearing, grading, trenching, and soil stockpiling activities, potentially causing minor fluctuations in groundwater levels and/or increased turbidity, particularly in shallow surficial aquifers.
 - e. Reduced infiltration and increased surface runoff and ponding due to soil compaction caused by heavy construction vehicles.
- 9. Environmental impacts to surface soils, vegetation, and surface water due to storage and handling of fuels/hazardous liquids during construction and operation.
- 10. Impacts to local flora and fauna due to the introduction of aquatic invasive animals and plants during construction.

12 Tr 1848-1849. She recommended that “Enbridge develop, document, and implement specific plans and procedures to mitigate impairments and prevent significant environmental impacts for the potential impacts noted above. Weston recommends that the plans and procedures for the project should be specific and address each of the potential impacts.” 12 Tr 1851-1852. However, Ms. Mooney concluded that she did not identify any feasible and prudent alternatives to the location, land requirements, and construction techniques for the Replacement Project.

Philip Martin Ponebshek stated that he is a Project Manager at Weston. 12 Tr 1855. He sponsored Exhibits S-22 through S-24. Mr. Ponebshek testified on behalf of the Staff, stating that

the purpose of his testimony is to review “Exhibit A-9, ‘Alternatives for Replacing Enbridge’s Dual Line 5 Pipelines Crossing the Straits of Mackinac, dated June 15, 2018’” and related discovery responses from Enbridge. 12 Tr 1862. He explained that his review of Exhibit A-9 was to determine whether the Alternatives Analysis presented accurate and appropriate information about the feasible alternatives to the dual pipelines and whether the Replacement Project is the best choice among the alternatives.

Mr. Ponebshek stated that there are three construction methodologies for replacing the dual pipelines presented in the Alternatives Analysis: (1) the Replacement Project, (2) the open cut with secondary containment alternative, and (3) HDD. 12 Tr 1864. He noted that for the Replacement Project:

the TBM would drill through the solid rock and unconsolidated materials beneath the Straits using a pressurized slurry to maintain the integrity of the tunnel at the TBM cutterhead as well as facilitate excavation. A slurry and rock mixture produced by the excavation would be routed via dedicated pipe back through the tunnel to the on-shore facilities, where the slurry would be treated to remove spoils prior to reuse. As construction proceeds, precast concrete tunnel lining would be brought into the tunnel behind the TBM and installed and sealed with rubber gaskets to maintain tunnel integrity. Immediately ahead of the TBM, test probes would be used to assess the nature and integrity of the geologic formations, and as needed grouting would be injected into less consolidated materials to present a more consistent matrix for the cutterhead to encounter, reducing the probability for formation collapse and tunnel flooding. As the tunnel lining is completed, pipeline segments will be tied-in via welding at the south end of the tunnel, and advanced through the tunnel on permanent rollers.

12 Tr 1865.

For the open cut with secondary containment alternative, Mr. Ponebshek stated that there are two options. He explained that the first option is to cut a trench from the shoreline through the lakebed to a point where the water depth is 30 feet. Mr. Ponebshek asserted that at the 30-foot water depth, the pipeline will be laid on the surface of the lakebed and covered with an engineered gravel and cobble layer that is six- to eight-feet deep. 12 Tr 1866. He contended that “the cover

would minimize risk of impact from anchor drops and other factors. To further minimize the risk of loss of product to the environment, this alternative would rely on a pipe in pipe design, whereby a 30 inch diameter product pipe would be strung within a 36 inch secondary containment pipe.”

12 Tr 1865. Mr. Ponebshek explained that the second option is to cut a trench through the lakebed for the entire pipeline. He stated that, “[w]hile feasible, Option 2 was discarded from detailed analysis for a number of reasons including complexity of trenching at a 250 foot depth below water level, environmental impacts related to turbidity and dredge material handling, impacts to ship traffic in the Straits, and high likelihood of hard soils on the lakebed.” 12 Tr 1865-1866.

Mr. Ponebshek testified that the third alternative, directional drilling of the entire pipeline length under the lakebed of the Straits, is not feasible. He noted that “[t]he depth of the Straits would not allow for staging to conduct the drilling in segments, while the overall length of the crossing exceeds current directional drilling technology capabilities.” 12 Tr 1866.

Mr. Ponebshek asserted that in reviewing the Replacement Project and the open cut with secondary containment alternative, he determined that the potential impacts to the environment for both alternatives were similar. He explained that there will be “significant underwater noise levels” as a result of trenching, dredging, filling, leveling, and laying pipeline, which will “directly disturb fish and benthic organisms, and would impact diel vertical migrations of organisms such as zooplankton.” 12 Tr 1867. He recommended the use of silt curtains to mitigate the effects of turbidity in the water, and that Enbridge should avoid trenching and dredging during Lake Trout and Lake Whitefish spawning seasons. In addition, Mr. Ponebshek noted that the construction process may disrupt navigation in the Straits during construction and, in the long term, pipeline inspection may interfere with shipping lanes. He stated that the Replacement Project and the open cut with secondary containment alternative may disturb shoreline and shallow water habitat and

may “release into the water . . . hazardous materials/hazardous waste currently present in lakebed soils during construction.” 12 Tr 1867. Furthermore, he testified that the Replacement Project or open cut with secondary containment alternative may disrupt local traffic because of the onshore land requirements for “stringing of pipeline segments,” and cause visual environmental impairment “from lighted platforms and vessels used for offshore construction.” 12 Tr 1867-1868.

Mr. Ponebshek asserted that, as set forth in Exhibit A-9, there are several measures to mitigate the environmental impairments associated with the open cut with secondary containment alternative. However, he stated that:

many of the potential impacts and mitigation measures were not completely reviewed in this document because they would require additional studies which have not yet been performed (e.g. – an assessment of potential noise impacts on aquatic organisms would require detailed background noise modeling, as well as a comprehensive cataloguing of the species which may be affected by construction noise as well as the levels of underwater noise which may disturb their functions). If the Open Cut with Secondary Containment Alternative were to become the preferred Alternative, it is anticipated that additional studies would identify and quantify more potential impacts which would require a refinement of currently proposed mitigation measures as well as likely additional measures.

12 Tr 1868.

In addition, Mr. Ponebshek asserted that he has not identified any feasible and prudent alternatives for the location, land requirements, and construction techniques for the Replacement Project and the open cut with secondary containment alternative. He stated that “[t]his determination is made in the absence of a number of additional studies not conducted which would still be necessary to fully catalogue the environmental impacts of the Open Cut with Secondary Containment alternative. It is very likely that those additional studies would further expand the difference in expected environmental impacts between the two feasible alternatives.”

12 Tr 1870-1871. Therefore, Mr. Ponebshek contended that the Replacement Project is “the more prudent of the two feasible alternatives.” 12 Tr 1871.

Next, Mr. Ponebshek testified that Weston reviewed the GHG emissions associated with the Replacement Project and Line 5. Mr. Ponebshek stated that he analyzed “the following scenarios associated with alternative modes of transportation:”

1. Existing Enbridge Line 5 Pipeline.
2. Construction of Tunnel and Enbridge Line 5 Replacement Pipeline.
3. Operation of Enbridge Line 5 Replacement Pipeline within Tunnel.
4. Shut down of Enbridge Line 5 Pipeline and alternate [sic] modes of transporting liquid products comparing:
 - a. Rail.
 - b. On-Road Tanker Trucks – Lewiston, Michigan to Marysville, Michigan component, only.

12 Tr 1871. He noted that for the Replacement Project, Weston calculated the emissions from the use of diesel- and gasoline-powered construction equipment to clear the land and construct the tunnel, the emissions from the continued operation of the dual pipelines during construction, and the emissions from the use of Line 5 after construction of the Replacement Project.

Mr. Ponebshek testified that “[t]he greenhouse gas impacts from various transportation alternatives were estimated by evaluating the shortest distance road or rail routes available, and in combination with the weight of the product to be transported via each alternative entered into the Greenhouse Gas Protocol ‘GHG Emissions from Transport or Mobil Sources’ Calculation Tool (GHG Calculation Tool).” 12 Tr 1872. He explained that the GHG Calculation Tool is a standard model used widely by industry experts to calculate GHG emissions from various industrial and transportation activities. Mr. Ponebshek noted that Weston authored a report that explains the assumptions, methodology, data, and calculations used to analyze the GHG emissions, which is set forth in Exhibit S-24. 12 Tr 1872. He stated that according to the report in Exhibit S-24, the existing Line 5 pipeline emits approximately 209,854 metric tonnes of carbon dioxide (CO₂) equivalent (tCO₂e) per year. *See*, Exhibit S-24, p. 3. Mr. Ponebshek asserted that the report also states that during construction of the Replacement Project, approximately 6,036 tCO₂e per year

will be emitted as a result of construction activities each year. *Id.* He noted that after the Replacement Project is complete, the report asserts that the GHG emissions will be the same as the existing Line 5 GHG emissions: 209,854 tCO_{2e} per year. However, he averred that if Line 5 is shut down and rail transportation of the products is required, the report states that GHGs will be emitted as follows: (1) crude oil, 501,255 tCO_{2e} per year; (2) NGLs on Line 1, 193,060 tCO_{2e} per year; (3) NGLs from the pipeline origin to Sarnia, Ontario, 36,246 tCO_{2e} per year; (4) NGLs from Conway, North Dakota to Sarnia, Ontario, 80,734 tCO_{2e} per year; and (5) purity propane, 4,446 tCO_{2e} per year. Mr. Ponebshek stated that if Line 5 is shut down and tanker truck transportation of crude oil from Lewiston, Michigan to Marysville, Michigan is required, the report asserts that 44,283 tCO_{2e} will be emitted each year.

In conclusion, Mr. Ponebshek testified that a more detailed risk management plan should be provided to the State of Michigan prior to construction of the Replacement Project. He explained that:

[t]his plan would include a description of the planned geotechnical test bores and frequency of probe-hole testing ahead of the TBM and should include reporting of both test-bore data and probe-hole data in real time so that the State can assess risks and construction plan modifications based on the data. The plan should also include inspections for concrete cast sections prior to moving them into the tunnel and after being put into place, placement of gaskets, regular analyses of bentonite mix properties, changes in slurry pressure. Deviations from and modifications to the plan during the construction process should be reported and available for public review.

12 Tr 1872-1873.

Wilson Yee stated that he is an environmental scientist and Project Manager for Weston.

12 Tr 1649. He sponsored Exhibit S-25. Mr. Yee testified on behalf of the Staff, stating that he:

was asked to participate in a tribal consultation meeting on behalf of [the Commission] Staff and review seven documents either in full or selected pages identified by [the Commission] Staff that were relevant to the scope of Weston's review, which included cultural, spiritual, and economic resources, as well as treaty

rights. The purpose of [his] involvement in the tribal consultation and [his] document review is to identify tribal treaty rights concerns and assist the [Commission] with ensuring consistency with Michigan's tribal consultation directive.

12 Tr 1653.

Mr. Yee explained that Exhibit S-25 is a summary of comments and recommendations that were collected by the Staff during the tribal consultation, "including potentially new information regarding cultural resources, treaty rights and traditional cultural interests, and environmental concerns." 12 Tr 1653. Mr. Yee asserted that the Commission should consider these recommendations "to ensure consistency with ongoing tribal treaty rights, environmental impact, and/or cultural resource impact analyses being conducted by USACE and other federal, tribal, and state parties." 12 Tr 1653. He stated that his review focuses on whether the comments relating to tribal interests have been addressed or will be addressed by other state and federal agencies. Further, Mr. Yee testified that his review analyzed whether there was additional information needed for the Commission to make its final determinations.

Mr. Yee noted that he reviewed the NPDES permit; the January 29, 2021 Draft Permit for Countersignature; and the "federal requirements for compliance with [Part 404 of the Clean Water Act (CWA), 33 USC 1344, and Part 402 of the CWA, 33 USC 1342], Section 106 of the National Historic Preservation Act [54 USC 306101], Section 7 of Endangered Species Act [16 USC 1536], and treaty rights in general." 12 Tr 1654. According to Mr. Yee, he was unable to fully evaluate the impact of the Replacement Project to wetlands because Enbridge provided an incomplete wetland survey. Furthermore, he asserted that the Replacement Project may impact rare or unique coastal habitats, shoreline alvar, Great Lakes cobble beach, lake bottomlands, and cultural and historical resources. In conclusion, Mr. Yee testified that Exhibit S-25 "contains a list of all

recommendations for addressing comments as part of the [Commission]’s tribal consultation process.” 12 Tr 1655.

3. Little Traverse Bay Bands of Odawa Indians

Kevin Donner testified that he is the Great Lakes Fisheries Program Manager for LTBB. 9 Tr 1172. He sponsored Exhibits LTBB-KD-1 through LTBB-KD-3. Mr. Donner stated that he works with the Chippewa Ottawa Resource Authority (CORA) Biological Service Division, which includes members of LTBB, Little River Band of Ottawa Indians, GTBOC, Bay Mills, and the Sault Ste. Marie Tribe of Chippewa Indians.

In his testimony, Mr. Donner described the types of fish that tribally licensed commercial fishers harvest in the Straits and the types of fish that tribally licensed subsistence fishers harvest in the Straits, as well as the plant and animal species that these fish rely on for food.

9 Tr 1173-1174. He asserted that the commercial and subsistence records set forth in Exhibit LTBB-KD-2 were compiled by biologists from all of the CORA member tribes.

According to Mr. Donner, Exhibit LTBB-KB-2 reflects the monetary value of the fishery by grid and Exhibit LTBB-KD-3 depicts the fish spawning grounds in the Straits. 9 Tr 1174.

Mr. Donner opined that “[d]estruction or impairment of spawning grounds will negatively impact recruitment/reproduction rates,” which will lead to reductions in species population in the long term. 9 Tr 1177. Referring to the Line 5 Project, Mr. Donner testified that:

The proposed activities include discharge of wastewater directly into Lake Michigan both during construction and during regular operations thereafter. The chemical composition of this wastewater has not been disclosed, so [it] could contain chemical compounds that have direct and indirect effects on fish health, the edibility of fish, and the ability of tribal fishers to market Great Lakes fish and therefore effectively conduct the Treaty fishery. . . . The proposed activities also indicate that operational byproducts may be part of the wastewater though the specific nature of those byproducts has not been disclosed. Without information on the byproduct we are unable to fully account for potential contaminant related effects of the project. However we can conclude that these activities elevate the

risk of introducing non-natural and man-made contaminants to the water which, in turn, may be directly accumulated by fish and indirectly accumulated through bioaccumulation in the food web.

9 Tr 1177-1178. In conclusion, Mr. Donner requested a “comprehensive accurate accounting of the chemical composition and volumes” of wastewater discharge associated with the replacement of the dual pipelines to fully understand and account for the potential environmental impacts.

9 Tr 1178.

Melissa Wiatrolik stated that she is the Tribal Historic Preservation Officer/Tribal Officer for Native American Graves Protection and Repatriation Act, and Tribal representative to the Michigan Anishinaabek Cultural Preservation and Repatriation Alliance (also known as the THPO/NAGPRA/MACPRA officer) for LTBB. 9 Tr 1181. She testified that the Straits are integral to Odawa history and culture and “[contain] some of the important places where Manidok (spiritual beings) reside who have helped us as a people, but also personally and individually.”

9 Tr 1183. Ms. Wiatrolik asserted that the proposed construction activities will “disrupt the ancient relationship that the Odawa have with a Manido known as Mishibizhii,” who is known to the Odawa as a malevolent or guardian spirit in the Great Lakes region and who is “principal Manido over all the other underwater and underground animals, fish, Manidok and other creatures.” 9 Tr 1185. In addition, Ms. Wiatrolik stated that the fish, plants, and animals that inhabit the Straits have an important relationship with the tribes as food, medicine, and economic commodities.

Ms. Wiatrolik next testified that she has examined the map for the tunnel and Replacement Project and she asserted that the project would disturb Odawa cultural sites. She noted that the tunnel begins on the north side of the Straits near the site of a former Odawa settlement where there are known burials. Ms. Wiatrolik also stated that “many people of the sturgeon clan were

buried in Lake Michigan” and opined that there could be potential disturbances to historic period burials, which could result in the souls of the dead negatively affecting their living relatives.

9 Tr 1185. She explained that:

Mishibizhii is accustomed to receiving tobacco from the Anishinaabek accompanied with a request usually for safe passage through the waters of the Great Lakes and many other personal needs. The construction activity could confuse him, especially the use of explosives and any machinery activity that makes loud noises or vibrations that resemble the sounds of the Thunder Manidok. Mishibizhii has a long history of a turbulent relationship with the Thunder Manidok and he may not approach the area of those sounds so that the tobacco with its request would not be received by Mishibizhii who would become angered and use his power to cause bad things to happen to the people.

9 Tr 1186.

Eric Hemenway testified that he is the Director of LTBB Repatriation, Archives, and Records.

9 Tr 1188. He stated that the LTBB have historic villages located in St. Ignace, Aulsebrook, Mackinac Island, Mackinaw City, Bois Blanc Island, and Round Island. He provided testimony regarding his knowledge of Odawa burial rituals and locations and the importance of the protection of burial sites in the Straits. Mr. Hemenway noted that he has examined a map of the proposed tunnel and Replacement Project and asserted that the proposed construction activity will disturb Odawa burials, which would be a violation of traditions and religious beliefs. He opined that such violations “create low self esteem, anger and withdrawal within Tribal community members.”

9 Tr 1193.

4. Mackinac Straits Corridor Authority

Dr. Mooney testified that he is a Consulting Engineer for MSCA. 9 Tr 1201. He sponsored Exhibits MM1 through MM7. Dr. Mooney stated that he originally served as a tunnel engineering expert for the Michigan Agency for Energy (MAE) during the development of the Tunnel Agreement and later began acting as a consultant to MSCA. He explained that MSCA “is

responsible for overseeing construction and operation of [the] tunnel in bedrock beneath the waters of the Straits of Mackinac. MSCA will own the tunnel after its construction and provide independent oversight throughout its life.” 9 Tr 1201. He further stated that MSCA exercises its duties through the MSCA Board, which consists of three members appointed by the governor with the advice and consent of the Senate.

Dr. Mooney opined that the placement of Line 5 inside the tunnel will reduce the risk of petroleum products leaking into the Great Lakes to “practically zero.” 9 Tr 1204. He contended that this is a notable reduction in environmental risk compared to the current dual pipelines. Dr. Mooney explained that the tunnel will be designed and constructed according to the criteria established in the Tunnel Agreement and the standards set forth in the design-services request for proposals. He asserted that the tunnel is to have a service life of 99 years and will “be constructed of a suitable structural lining providing secondary containment to prevent any leakage of liquids from the Line 5 Replacement Segment into the lakebed or Straits.” 9 Tr 1205. Dr. Mooney noted that once the tunnel is completed, third-party utilities may apply for “access to construct, operate, and maintain utilities inside of the tunnel” under conditions set forth in the Tunnel Agreement. 9 Tr 1214.

Dr. Mooney indicated that he was a member of the joint specifications team (JST), which included Michigan Department of Transportation engineers and consultants and Enbridge’s consultants. He testified that the JST developed the Project Specifications that include nine construction specifications for the permanent tunnel structure: “(1) Structural concrete materials; (2) cast-in-place concrete; (3) precast structural concrete; (4) precast concrete tunnel lining; (5) sealing leaks; (6) excavation by tunnel boring machine; (7) backfill grout; (8) bored piles; and (9) diaphragm walls.” 9 Tr 1207; *see*, Exhibit MM7. Dr. Mooney explained that pursuant to the

Project Specifications, the tunnel will be constructed using a slurry pressure balance TBM. He stated that the cuttings will be hauled away and the slurry will be recycled and reused. He added that the:

[PCTL] is installed inside and at the back or tail of the shield. The tunnel process will involve the following repeating sequence: (a) excavate ahead 5.5 ft [feet] using slurry pressure balance with the SPBM [slurry pressure balance machine] pushing off the leading edge of the most recently installed PCTL ring; (b) while excavation is paused and while slurry pressure balance is used, assemble a PCTL ring, approx. 5.5 ft in width, using six PCTL segments. For a tunnel length of approximately 20,000 ft (4 miles), some 3500+ cycles of excavate-ring build will be performed to construct the tunnel.

9 Tr 1210.

Dr. Mooney testified that the designer of the tunnel is Arup, a global engineering firm with extensive experience designing tunnels. He stated that Arup “engaged a number of their top tunnel design engineers, geologists, and hydrogeologists and structural engineers from Asia, Europe, and the Americas to design the project. They also engaged a number of third-party experts to participate.” 9 Tr 1211. In Dr. Mooney’s opinion, the quality of their work is excellent. Additionally, he explained that he had extensive access to observe and monitor the design process, which he describes as rigorously conducted. Dr. Mooney contended that “some of the particularly challenging aspects” of the design process include the high groundwater pressure, face stability with reduced pressure, and ground characterization. 9 Tr 1212.

Dr. Mooney opined that the tunnel will meet or exceed industry standards. He stated that MSCA will engage a consulting firm to perform independent quality assurance (IQA) throughout construction, which will be paid for by Enbridge per the Tunnel Agreement. Dr. Mooney explained that the IQA contractor is independent of Enbridge’s own quality assurance practices and that the IQA contractor “will monitor the construction quality, ensuring that the [tunnel] is constructed in accordance with the jointly developed project specifications and in accordance with

state of industry practice.” 9 Tr 1213. He stated that MSCA’s acceptance of ownership of the tunnel following construction will be dependent on the IQA contractor’s documentation.

Dr. Mooney also testified that Enbridge will develop a Tunnel Operations and Maintenance (O&M) Plan that must be approved by MSCA. He stated that the risks “to the tunnel during the 99-year design service life” include degradation of the concrete and water infiltration through joints or cracks over time. 9 Tr 1216. However, Dr. Mooney contended that the tunnel has been designed with these risks in mind.

In conclusion, Dr. Mooney opined that the tunnel is designed and routed in a reasonable manner. Regarding pollution or impairment of the water in the Straits, he stated that there is no direct construction in the lake and that the high levels of groundwater pressure will be counterbalanced and stabilized, preventing appreciable groundwater inflow into the tunnel and ground destabilization. Dr. Mooney asserted that Enbridge has met every requirement set forth in the Tunnel Agreement, that the tunnel will be safe and constructed to industry standards, and that the new pipeline will be able to be safely laid within the tunnel. 9 Tr 1215-1216.

Mr. Cooper stated that the purpose of his “testimony is to provide pipeline engineering expertise on behalf of [MSCA] regarding Enbridge’s application pursuant to Public Act 16 of 1929 to replace and relocate the segment of Line 5 crossing the Straits of Mackinac into a tunnel beneath the Straits.” 9 Tr 1235. He noted that he worked part-time for MAE in 2017-2019 and participated in Enbridge’s evaluation of replacement alternatives and risks. Mr. Cooper stated that he agrees with the outcome of Enbridge’s alternatives study, which demonstrates that the tunnel is the best option. He opined that the Replacement Project is important to the state of Michigan because: (1) it will allow Line 5 to continue operating and fulfilling the public need identified in the 1953 order; (2) it will eliminate the risk associated with a large vessel anchor strike; and (3) it

will provide a safe and accessible transportation corridor for other energy and communications utilities, linking the Upper and Lower Peninsulas. 9 Tr 1237.

Mr. Cooper described two other alternatives not considered in the 2017 Alternatives Analysis or the 2018 alternatives study, namely, suspending a replacement pipeline from the Mackinac Bridge or constructing a new suspension bridge. He explained that these options are not, however, practical or economical. 9 Tr 1238-1239. In addition, Mr. Cooper considered retention of the dual pipelines to be impractical due to the already-demonstrated risk of anchor strikes. Moreover, he stated that, “[t]o abandon the existing 20-inch lines without replacing them would not meet the public need for operation of Line 5 as established by [the 1953 order]” 9 Tr 1240.

Mr. Cooper contended that Enbridge’s application and evidence demonstrate that the Replacement Project will meet PHMSA requirements, federal regulations, and industry standards. He stated that the Tunnel Design and Construction Report (Exhibit A-13) indicates Enbridge’s commitment to comply with these requirements, and he noted that the pipeline and tunnel interior will be available for inspection after construction is complete. In addition, Mr. Cooper opined that the plans for the tunnel are technically sound and in compliance with 49 CFR 195.110(a), which requires that the tunnel have the ability “to expand and contract with temperature and pressure changes.” 9 Tr 1242. However, he stated that he is curious whether Enbridge has considered the weight of ILI tools traveling through the pipeline.

Mr. Cooper stated that, “[b]ased on [his] knowledge and experience, this work can be completed safely and successfully by properly trained and experienced personnel using appropriate care and diligence.” 9 Tr 1244. He further opined that the Replacement Project will provide better access for direct inspection and maintenance of the pipeline. In addition, Mr. Cooper contended that divers, ROVs, and equipment for direct inspection and repair activities

will no longer be needed. Moreover, he asserted that “[t]here will be no further need for screw anchor supports to limit unsupported span lengths, and no risk of damage to the pipeline by marine vessel anchors or cables.” 9 Tr 1245.

Mr. Cooper noted that Enbridge plans to add a second layer of leak detection to the existing computational pipeline monitoring system. He explained that:

[t]he computational system compares actual operating data with computed values of pipeline pressure, temperature, flow rate, and product characteristics, and alerts operators of discrepancies that could indicate a pipeline leak. The added layer will consist of hydrocarbon vapor and liquid detectors directly monitoring the tunnel space and alerting operators of a leak. This direct monitoring of the tunnel will allow detection of a small leak that may fall below the detection limit of the computational pipeline monitoring system.

9 Tr 1246. As to how Enbridge’s plans for the Replacement Project could be strengthened, Mr. Cooper suggested possible heat treatment of tunnel pipeline riser girth welds. He also expressed concern that the presence of other utilities could impact the pipeline’s integrity or produce safety hazards, such as electric transmission cable that may “accelerate corrosion of the pipeline” or “create electric shock hazards for personnel working on the line.” 9 Tr 1247. He contended that Enbridge could remedy these concerns by thoroughly examining these risks in the planning stages, implementing proper safety measures, and continuing to monitor the effectiveness of these safety measures.

In conclusion, Mr. Cooper predicted that the replacement pipeline and tunnel will perform safely over the life of the project and beyond. He encouraged Enbridge and the State of Michigan to consider the possible value of the dual pipelines for other service such as a conduit for power or communications lines.

5. Nottawaseppi Huron Band of the Potawatomi

John Rodwan, Environmental Director of NHBP, testified that he is responsible for “administering Tribal and Federal environmental natural resource programs and grants,” and he “direct[s] community-based programs related to [the] environment” 10 Tr 1272.

Mr. Rodwan stated that he serves on the steering committee for the Michigan Wild Rice Initiative and that he has worked to reestablish wild rice as a Tribal and ecologic resource. He explained that wild rice is central to many Native cultures, including the NHBP community, as a source of nutrition, culture, and spirituality. In addition, Mr. Rodwan asserted that wild rice is an important component of aquatic ecosystems because “it contributes to primary production, nutrient cycling, and habitat structure. Its shoots, foliage and grain are important food resources for a range of wildlife, notably waterfowl.” 9 Tr 1277. Mr. Rodwan contended that more frequent and intense climate related stressors, including heightened storms and droughts, resulted in a failure of over 90% of the wild rice crop in Michigan in 2021. 9 Tr 1279.

Mr. Rodwan expressed concern that the Replacement Project will further impact climate change. He stated that:

[v]iewing the proposed tunnel in a holistic manner from a Tribal perspective we see both direct and indirect impending impacts. Direct impacts are related to construction, operation and maintenance. Enormous amounts of resources, including fresh water and energy, will be used as part of the drilling operation. These operations will contribute greenhouse gases to the atmosphere. Also, untreated drilling fluids will pose an imminent threat of release to the Straits, thereby posing a direct threat to the aquatic community including high value natural resources such as fisheries and Wild Rice. As a unique Traditional Cultural Property the Straits are formerly and currently of extreme significance to Tribal communities within the Great Lakes Watershed.

10 Tr 1287.

6. Bay Mills Indian Community

Ms. Gravelle testified that she is the elected President of the Bay Mills Indian Community, which is a federally recognized Tribe and sovereign nation located in the eastern part of the U.P. 10 Tr 1415. She stated that she is also a former Chief Judge of the Bay Mills Tribal Court. In addition, Ms. Gravelle asserted that, as a woman of Anishinaabe culture, she is a waterkeeper who is “responsible for maintaining and protecting water for [her] people, praying to the water, and caring for the water during ceremonies.” 10 Tr 1415. She sponsored Exhibits BMC-1 through BMC-7.²³ 10 Tr 1417.

Ms. Gravelle stated that the tunnel project runs through lands and waters that are central to Bay Mills’ existence and that both the dual pipelines and the Replacement Project “have the potential to significantly affect, and indeed pose serious threats to, the exercise of our reserved treaty rights, our ability to preserve cultural resources, our cultural and religious interests in the Great Lakes, our economy, and the health and welfare of our tribal citizens.” 10 Tr 1419. She explained that “the Straits of Mackinac and the Great Lakes are central to Bay Mills’ cultural, traditional, and spiritual identity” because they are part of the Tribe’s creation story, cultural teachings, and oral history. 10 Tr 1421. In addition, Ms. Gravelle stated that the Straits make up part of Bay Mills’ fishery and that over half of Bay Mills’ citizen households rely on fishing for some or all of their income.

Ms. Gravelle described the 1836 Treaty of Washington (1836 Treaty) and the ceded territories, noting that Bay Mills is the successor to a signatory of that treaty, the Ojibwe people. She noted that Bay Mills has had to protect its treaty rights through litigation, which has resulted in significant precedent upholding the Tribe’s treaty rights, particularly as they relate to fishing.

²³ Exhibits BMC-1 through BMC-5 were struck following the January 13 ruling, pp. 7-8.

Ms. Gravelle stated that she “share[s] the legal history of the Treaty fishing controversies not only to emphasize the existence of Tribal rights regarding the fishery, but also to serve as evidence that the right to fish, and the need for a natural environment in which fish can thrive, is of the utmost importance to the Tribe and its members” 10 Tr 1425.

Ms. Gravelle expressed concern that climate change is negatively impacting land, resources, and members of indigenous communities in the U.S. She averred that “[c]limate change is already greatly harming the Great Lakes, and the fisheries, habitats, and ecosystems and[,] accordingly, having a negative impact on tribal sovereignty, economies, and cultures” 10 Tr 1428.

Ms. Gravelle asserted that, specifically, Tribal cultural resources such as lake whitefish, walleye, wild rice, loons, and maple syrup produced by the sugar maple are threatened by climate change.

Ms. Gravelle indicated that Bay Mills is pursuing nomination of the Straits as a Traditional Cultural Property for inclusion on the National Register of Historic Places (NRHP) because the Straits contain bottomland and terrestrial archaeological sites that are significant to the Tribe, such as submerged paleo-landscapes, cemeteries, and burials sites. She stated that “damage, destruction, or contamination of one part of the landscape damages the entire landscape.” 10 Tr 1427.

In sum, Ms. Gravelle contended that she is “deeply concerned about the proposed route for the Line 5 Tunnel Project,” and “[d]ue to Bay Mills Indian Community’s significant and critical connection to the Straits of Mackinac, the Great Lakes, and the inland lands and waters that are part of the ceded territory, we have been deeply involved in the various permit processes for the Line 5 Tunnel Project.” 10 Tr 1419, 1427.

Mr. LeBlanc testified that he is a citizen of the Bay Mills Indian Community and serves on the Bay Mills Conservation Committee. Mr. LeBlanc stated that he is a fisher in the waters of the

ceded territory and that he has been a commercial fisherman since he was 12 years old, primarily fishing for whitefish. He asserted that:

[f]ishing is an engrained tradition within the Bay Mills Indian Community and is considered a traditional and cultural practice by many throughout [his] Tribe. [His] fishing outfit does more than just support [his] family. Through [his] own commercial operation, [he has] employed several dozen tribal citizens throughout the years who also exercise their treaty right as a means to support their family financially. In addition to supporting [his] family and [his] community, a large part of why [he] fish[es] is because of the efforts of [his] grandfather and father, and the way that we were brought up.

10 Tr 1517. Mr. LeBlanc testified that his ancestors have fished for hundreds of years, and his grandfather was instrumental in litigation that preserved this traditional lifeway.

Dr. Karen M. Alofs, Assistant Professor in the School for Environment and Sustainability at the University of Michigan, testified as an expert witness on behalf of Bay Mills. She stated that her “research focuses on the impacts of environmental change on freshwater biodiversity, primarily in fish communities.” 10 Tr 1447. She sponsored Exhibits BMC-8 and BMC-9.

Dr. Alofs testified that walleye fish are “a coolwater adapted species” that “live in freshwater streams and lakes primarily across central North America.” 10 Tr 1449. She stated that walleye are “culturally and economically important” because they “support important recreational, commercial, and subsistence fisheries” in the Great Lakes region. 10 Tr 1449. She noted that recreational fishing is estimated to contribute about \$2.3 billion in economic activity in Michigan.

Dr. Alofs asserted that “[s]cientists have expected that, in North America, climate change might favor warm water adapted species (including bass species) and hinder cool- and cold-water adapted species (including walleye and trout, salmon and whitefish)” 10 Tr 1451. She explained that successful walleye reproduction is strongly connected to cooler water temperatures and, as the climate and water warm, populations will become less sustainable. Dr Alofs contended

that declines in walleye will have negative impacts on lake ecosystems and on recreational, commercial, and subsistence fisheries.

Dr. Alofs noted that walleye are found in all five Great Lakes and avers that, “[w]hile walleye in inland lakes appear to be more threatened by climate change than in the Great Lakes themselves, [she is] concerned that the indirect impacts of climate change on walleye in the Great Lakes are not well understood or difficult to measure or predict.” 10 Tr 1459. She asserted that to manage a sustainable fishery, reliable and accurate predictions of fish populations are necessary so that catch limits and spatial distribution of fishing may be set. Accordingly, Dr. Alofs recommended that “the management of Great Lakes resources . . . move from reactive actions (e.g. following population crashes or ecological impairments) to proactive actions with a focus on protection.” 10 Tr 1459.

Dr. Inés Ibáñez, Professor in the School for Environment and Sustainability at the University of Michigan, testified as an expert witness on behalf of Bay Mills. She explained that she is a forest ecologist with a focus on the forest ecosystems of the Great Lakes region, which includes the study of the effects of climate change on the sugar maple that grows abundantly in the U.P. 10 Tr 1466-1467. Dr. Ibáñez sponsored Exhibits BMC-10 and BMC-11.

Dr. Ibáñez opined that climate change will negatively impact the sugar maple, which requires cold winters and springs for proper dormancy and germination. She stated that “[l]ack of snow cover protection over the winter, a consequence of warmer temperatures, negatively affects the roots. Roots freeze without the protecting snow layer. Increasing growing season temperatures are associated with an increased risk of desiccation in seedlings and of growth reduction in adults due to lack of sufficient moisture.” 10 Tr 1472. Dr. Ibáñez asserted that she believes that sugar

maple habitat will decline by the end of the century as a result of climate change, including in the U.P.

Dr. Daniel Larkin testified that he is an Associate Professor and extension specialist in the Department of Fisheries, Wildlife and Conservation Biology at the University of Minnesota-Twin Cities and is testifying as an expert witness on behalf of Bay Mills. Dr. Larkin stated that he is a plant ecologist with a focus on wetlands, lakes, woodlands, and prairies of the Upper Midwest and aquatic plant species. 10 Tr 1480. He added that he studies the impact of climate change on freshwater ecosystems and on wild rice in particular. He sponsored Exhibits BMC-12 and BMC-13.

Dr. Larkin stated that wild rice is most abundant in Minnesota, Wisconsin, and Michigan, in descending order, and is an irreplaceable cultural and commercial resource for Native peoples as well as a critical component of aquatic ecosystems. He described the typical habitat, lifecycle, and reproduction of wild rice in the upper Great Lakes region and explained how wild rice is harvested. However, Dr. Larkin stated that:

there are several stressors or disturbances to wild rice that can kill or displace the species. These include disturbances associated with climate change and corresponding temperature and precipitation changes, as well as lakeshore development (shoreline hardening, damage from motorboats, physical or chemical aquatic plant control), elevated sulfides from iron ore mining which are deadly to wild rice, hydrologic disturbances that change water levels (e.g., dams, flooding, watershed development), and attack by other organisms

10 Tr 1484. He noted that there has been a “sustained downward [trend] in the geographic distribution and local abundance of wild rice” that has “been observed over decades” and that Michigan has suffered the greatest loss. 10 Tr 1487-1488.

In Dr. Larkin's opinion, climate change is impacting wild rice, both directly through temperature changes and indirectly through growing threats from pathogens and pests. He averred that:

[i]t is highly likely that climate change has already negatively impacted wild rice. How much climate change has affected wild rice to date has not been quantified. While wild rice has clearly declined, it is difficult to separate the impacts of climate change from other stressors that wild rice has been subjected to (e.g., wetland loss, watershed development, agricultural intensification).

10 Tr 1493. He asserted that "[i]f the severe effects of future climate change that have been predicted are not prevented," climate change will have catastrophic effects on wild rice populations in the coming years. 10 Tr 1494.

Dr. Alec R. Lindsay, a Professor of Biology at Northern Michigan University, offered expert testimony on behalf of Bay Mills. He stated that the primary focus of his research is the genetics and behavior of Holarctic birds, which includes the common loon. 10 Tr 1499. He sponsored Exhibits BMC-14 and BMC-15.

Dr. Lindsay stated that common loons are found in the Great Lakes region and breed in Michigan. He described the migration process and typical habitat of common loons. Dr. Lindsay stated that climate change has already affected common loons, noting that:

[o]ne study of a population of breeding loons . . . found that in the last 38 years loon productivity declined in Ontario, and attributed that decline to "climate change-induced stress, acting through multiple interacting pathways." As to changes in loon migration, data collected over the last 30 years at Whitefish Point Bird Observatory ("WPBO") on Lake Superior demonstrate that:

- loons are migrating north earlier in the spring (Figure 1)
- numbers of migrating loons are declining in the spring (Figure 2)
- loons are migrating south later in the fall (Figure 3).

10 Tr 1504. Dr. Lindsay continued, stating that:

[He is] concerned about the impact of climate change on loons. [His] primary concerns are the loss of breeding habitats in Michigan associated with the overall loss of breeding range of loons, and the direct loss of individuals due to more

frequent and intense botulism type E outbreaks than have been experienced in the past.

10 Tr 1507. Dr. Lindsay explained that the botulism toxin grows more easily under the conditions in lakes created by climate change. He opined that climate change will reduce the number of, and possibly eliminate, common loons in Michigan.

Frank Ettawageshik, Executive Director of the United Tribes of Michigan, testified on behalf of both LTBB and Bay Mills. He stated that he is a citizen of LTBB, is a former Tribal Chairman, and sits on the LTBB appellate court. Mr. Ettawageshik was appointed to the Michigan Climate Action Council in 2008 by Governor Jennifer M. Granholm. *See*, Exhibit BMC-16, p. 6. He sponsored Exhibits BMC-16 through BMC-30.²⁴

Mr. Ettawageshik stated that the purpose of his testimony is to express “why Tribes are deeply concerned about climate and why it is important to take immediate steps to address climate change for the wellbeing of the State’s ecosystem, and all the species that depend on it.” 10 Tr 1571. He explained that the Tribal way of life is closely tied to the Earth and climate change directly impacts the food the Tribe eats and the way in which the Tribe works. 10 Tr 1579-1581.

Dr. Cleland testified that he is a Distinguished Professor Emeritus at Michigan State University and an independent consultant. He stated that he is testifying as an expert witness on behalf of Bay Mills and that his “expertise is in the field of ethnohistory” 10 Tr 1527. He sponsored Exhibits BMC-31 through BMC-36.²⁵

Dr. Cleland described the impact of the 1836 Treaty in which several native Tribes ceded 13 million acres of land, including what is now Michigan, along with the waters of Lakes Huron,

²⁴ Exhibits BMC-17 through BMC-30 were struck following the January 13 ruling, p. 8.

²⁵ Exhibit BMC-35 was struck following the January 13 ruling, p. 4.

Michigan, and Superior to the U.S., while retaining the right to hunt, fish, and gather over the land and waters that had been ceded (later enforced through litigation). He indicated that for the Ojibwe (Chippewa) and Odawa (Ottawa) people, the Straits represent the center of the creation of the Earth and are of deep religious and cultural significance. 10 Tr 1542.

Next, Dr. Cleland described the importance of historic preservation. He asserted that the historical record of preliterate, prehistoric societies is contained only in the archeological context, and thus damage to prehistoric sites (often the result of earth moving construction) constitutes the destruction of the only existing evidence of this type of cultural history. Dr. Cleland stated that the Straits have been occupied in the past by several native societies, including the Ojibwa and the Odawa. He averred that there are numerous archeological sites and that “they collectively contain a record of thousands of years of tribal history.” 10 Tr 1535. Dr. Cleland described several prehistoric terrestrial sites that are in or near the Straits that he considers to be endangered.²⁶ 10 Tr 1545-1548. He also noted an endangered underwater archeological prehistoric site. 10 Tr 1549; *see*, Exhibit BMC-36.

In addition, Dr. Cleland stated that 84 shipwrecks have occurred in the Straits, of which 41 have been discovered. He opined that there has been “no adequate professional study of the effects of tunnel construction or petroleum fouling on the shipwreck sites” and recommends that a study be conducted. 10 Tr 1551-1552. Furthermore, Dr. Cleland explained that the Straits are within a bottomland preserve and contain endangered historic archeological sites that are important to the tourism industry, including Fort Michilimackinac, the Mill Creek Site, the Marquette Mission Site, and an indigenous cemetery. He opined that the most at-risk sites are

²⁶ To protect the identity of their location, unexcavated sites are named only in the confidential version of Dr. Cleland’s testimony.

those terrestrial sites that are on the sandy shores of Lakes Michigan and Huron and their associated islands.

Dr. Cleland averred that:

[a]rchaological sites are by their nature vulnerable resources since they are usually buried and therefore not visible on the surface of the ground. Given their condition, many sites have been and are being unintentionally destroyed by the modern construction of roads, homes, and businesses. This renders those sites which remain intact all the more valuable as non-renewable cultural resources.

10 Tr 1560. He stated that there are no remediation measures that address the loss of archeological sites of cultural and historical value. Therefore, Dr. Cleland asserted that “it is necessary to know the location and characteristics of the site, the extent and nature of the potential damage, and finally the practicality of the corrective measures themselves.” 10 Tr 1562.

7. Environmental Law & Policy Center and Michigan Climate Action Network

Mr. Erickson stated that he is a Senior Scientist and the Climate Policy Program Director at Stockholm Environment Institute-U.S. He testified as an expert witness on behalf of ELPC/MiCAN, and he noted that his expertise is on “greenhouse gas (GHG) emissions accounting and the role of policy mechanisms in reducing GHG emissions.” 9 Tr 1038. Mr. Erickson stated that the purpose of his testimony is to estimate, quantify, and explain the level of GHG emissions associated with the Replacement Project, including emissions associated with construction and operation of the tunnel and the new pipeline as well as GHG emissions associated with the use of the oil and NGLs that will be transported through the replacement pipe segment. He sponsored Exhibits ELP-1 through ELP-7.

Mr. Erickson provided an overview of climate change and explained why there is a need for rapid and steep cuts in GHG emissions. He stated that in the “Midwest of the United States, climate change will lead to increased temperatures and precipitation that will reduce agricultural

productivity, erode soils, and lead to pest outbreaks, while also leading to poor air quality, substantial loss of life, and worsening economic conditions for people.” 9 Tr 1045 (footnote omitted). He added that the Intergovernmental Panel on Climate Change (IPCC) has produced a report identifying the emission levels necessary to comply with the Paris Agreement of 2015 and the timeframe in which these levels must be achieved. Mr. Erickson noted that according to the report, net global CO₂ emissions must reach zero by about 2050 in order to meet the temperature limit, which means that the use of coal, gas, and oil must decline dramatically.

To estimate the GHG emissions associated with the Replacement Project, Mr. Erickson stated that he used standard GHG emissions accounting practices, consistent with the Greenhouse Gas Protocol initiative, and he reported his results in the standard units of millions of metric tons of CO₂e. 9 Tr 1042, n. 10. He averred that this method is routinely used in GHG emissions assessments. Mr. Erickson summarized his findings as follows:

- First, [he] estimate[s] that the Proposed Project is associated with about 87 million metric tons carbon-dioxide equivalent (CO₂e) annually.
- Second, [he] conclude[s] that, when compared to a scenario in which the existing Line 5 pipeline no longer operates, construction and operation of the Proposed Project would lead to an increase of about 27 million metric tons CO₂e annually in global greenhouse gas emissions from the production and combustion of oil.

9 Tr 1043.

Mr. Erickson explained that the Replacement Project will result in GHG emissions in two ways: (1) GHGs will be released by the equipment that is used to construct and operate the tunnel and pipeline, and (2) GHGs will be released when the petroleum products that are transported through the replacement pipe segment are produced and combusted. He estimated that the GHG emissions associated with construction of the tunnel and replacement pipe segment are 87,000 metric tons of CO₂e in total and that the GHG emissions associated with its operation are

520 metric tons annually. 9 Tr 1051, 1056. Mr. Erickson stated that he made these calculations using standard GHG emissions accounting practices, information provided by Enbridge, and other published information regarding energy usage for proposed activities, such as the production and use of concrete and steel.

In addition, Mr. Erickson estimated that the GHG emissions associated with the end use of the oil and NGL products transported through the replacement pipe segment will be 87,000,000 metric tons CO₂e annually. 9 Tr 1057. He stated:

The Proposed Project is expected to handle 540,000 barrels per day (b/d) of liquid, comprising about 450,000 b/d of crude oil, and 90,000 b/d of natural gas liquids, chiefly propane and butane, again all for many years into the future. GHG emissions are released at each stage of producing, processing, and combusting petroleum, and so [he] estimate[s] the total emissions by splitting the “life cycle” of a barrel of crude oil or NGL into stages, which are typically referred to in this type of analysis as the “upstream” and “downstream” stages.

9 Tr 1057 (footnotes omitted). He explained that upstream refers to extraction and processing and downstream refers to end use, and he described the research that he relied upon in making his estimates. Mr. Erickson asserted that his estimate includes the assumption that 8% of the petroleum products handled by the replacement pipe segment will ultimately not be combusted. He noted that he amortized the emissions over the planned 99-year life of the replacement pipe segment. 9 Tr 1060.

Next, Mr. Erickson explained that a no-action scenario is one in which the dual pipelines are shut down and the Replacement Project does not go forward. He opined that it is important to consider the no-action scenario because it would achieve Enbridge’s stated purpose of removing the environmental threat to the Straits. *See*, 9 Tr 1061. Mr. Erickson stated that he also estimated the incremental GHG emissions associated with the Replacement Project in comparison to the no-action scenario. According to Mr. Erickson, the incremental emissions are about 27,000,000

metric tons CO₂e annually, and he explained that this is “lower than my estimate of all emissions associated with the Project of 87,000,000 metric tons CO₂e annually because, in my estimation, some of those emissions would occur even if the Proposed Project does not proceed.” 9 Tr 1063.

Mr. Erickson stated that “[t]o quantify the incremental GHG emissions of an energy project or action, one must first describe how that project or action will change the energy market.”

9 Tr 1063. He asserted that pipelines increase the supply of oil by transporting oil to market when other options do not exist or are more expensive. Mr. Erickson contended that “[e]stimating the effect of the Proposed Project on oil supply requires clearly articulating what would happen in a ‘no-action’ scenario, so that the effect of the Proposed Project can be compared to that, and the incremental effect of the Proposed Project can be quantified.” 9 Tr 1064. According to Mr. Erickson, because the State of Michigan is revoking and terminating the 1953 easement, the no-action scenario would be one in which the Line 5 pipeline is no longer operating and the Replacement Project is not constructed.

Regarding the no-action scenario, Mr. Erickson stated that:

[i]n such a case, where the Line 5 pipeline through the Straits of Mackinac is not replaced, more of the oil from Montana, North Dakota, and Western Canada would likely be transported by rail, which is generally more expensive than pipelines for transporting petroleum. The key difference of the scenario with the Proposed Project and the scenario without the Project is therefore the cost of transporting oil out of these regions of North America. [He] will refer to these regions as the greater Williston Basin, which includes both the Bakken and Duvernay formations.

9 Tr 1065. Relying on studies, he calculated that the added cost associated with increased movement of light crude oil by rail rather than pipeline is \$6 per barrel, which he described as a midrange estimate. He noted that GHG emissions will be slightly higher as well and he added this difference to his accounting.

Mr. Erickson noted that the Canadian Energy Regulator (CER) has forecasted a \$53 per barrel crude oil price by 2030 (though the EIA forecasts \$73 per barrel). In light of this trend and the \$6 per barrel add-on, he stated that about 290,000 bpd are at risk of being stranded. Additionally, Mr. Erickson asserted that if there is not sufficient rail capacity to move oil, as much as 450,000 bpd could be undeveloped. 9 Tr 1071. However, Mr. Erickson stated that his estimates could turn out to be lower. Mr. Erickson noted that his estimates do not reflect the additional costs accruing to Michigan oil producers, specifically, if they no longer had access to Line 5.

In sum, he stated that the no-action scenario “would lead to less, and more costly, oil supplied from the greater Williston Basin over the long term” and that “building the Proposed Project would lead to a net, incremental increase in annual global oil consumption of about 150,000 bpd, equivalent to 27,000,000 metric tons CO₂e per year from burning and producing that oil.” 9 Tr 1072, 1074. Again, Mr. Erickson explained that elasticities of supply and demand dictate that his GHG emissions estimates may turn out to be higher or lower but that they represent a reasonable approximation of the incremental effect of the Replacement Project.

Dr. Howard, Economics Director of the Institute for Policy Integrity, New York University School of Law, testified as an expert witness on behalf of ELPC/MiCAN. He sponsored Exhibits ELP-8 through ELP-10.

To begin, Dr. Howard noted that one of the alternatives to the Replacement Project is the no-action alternative, which involves shutting down the dual pipelines and not replacing them or building the tunnel. He stated that if the no-action alternative is selected, it would decrease the supply of oil and NGLs and, consequently, the price for oil and NGLs will increase. Dr. Howard opined that in response to the increasing price, demand for oil and NGLs will decrease. He stated that:

[d]ecreased demand for oil and natural gas liquids will decrease the combustion of oil and natural gas liquids, which will decrease emissions of greenhouse gases and other harmful pollutants. The reductions in lifecycle emissions from the oil and gas products that the Proposed Project would otherwise transport, as well as avoided emissions from the construction and operation of any action alternative, can be monetized as the incremental benefits of selecting the no-action alternative (or, equivalently, as the incremental costs of selecting the Proposed Project).

9 Tr 1109-1110.

Dr. Howard stated that he relies on Mr. Erickson's calculations of the total GHG emissions from construction and operation of the Replacement Project, as well as the lifecycle emissions from the transported oil and gas that will run through the pipeline in the tunnel "to monetize the Proposed Project's climate costs." 9 Tr 1110. He averred that monetization can help decisionmakers to understand the true nature of the pollution and impairment that are associated with the Replacement Project. In addition, Dr. Howard stated that "[m]onetization can help decisionmakers and the public weigh climate costs against other costs and benefits of various alternatives, and so determine the relative prudence of the no action alternative as compared to the Proposed Project." 9 Tr 1113.

Dr. Howard asserted that the federal Interagency Working Group (IWG) routinely uses the Social Cost of Greenhouse Gases (SCGG) method to monetize climate damages from GHGs, and he recommended that Michigan do likewise. He explained that "[e]conomists monetize climate damages by linking together global climate models with global economic models, producing what are called integrated assessment models," and that the SCGG model "is widely considered to be the best available calculation of the social cost of climate change." 9 Tr 1116-1117 (footnote omitted). He added that using the SCGG, IWG calculates climate damage from GHGs using estimates based a "defensible set of input assumptions that are grounded in the existing scientific and economic literature." 9 Tr 1117 (footnote omitted). Dr. Howard noted that IWG updated its

estimates in the SCGG in February 2021 to reflect the latest scientific and economic data, and he expected they will be updated again in January 2022. However, he asserted that for current GHG estimates, the IWG provides a “‘central estimate’ of social costs per metric ton of emissions per year based on a 3% discount rate and [by] taking the average from a probability distribution” 9 Tr 1118. Dr. Howard stated that he is concerned that the current discount rate of 3% set forth in the SCGG is too high compared to “recently updated market data on U.S. Treasury rates, consumer saving rates, and economic forecasts—as well as updated economic literature on uncertainty, correlations between climate damages and economic growth, preferences for inter-generational equity, expert elicitations, and other technical concepts” 9 Tr 1119-1120 (footnote omitted).

Dr. Howard asserted that discount rates are important because they are “used to take all the marginal climate damages that an additional ton of emissions emitted in the near future will inflict over the next 300 years, and translate those future damages back into present-day values.” 9 Tr 1119. He supplied data for both a 2.5% and 2% discount rate, in addition to the current 3% discount rate, as well as showing IWG’s High Impact Estimate (95th percentile at a 3% discount rate). 9 Tr 1121. By the year 2070, his calculations show a social cost of \$108 per metric ton of CO₂ at 3%, \$144 per metric ton at 2.5%, and \$328 per metric ton under the High Impact scenario. 9 Tr 1122. Dr. Howard urged the State of Michigan to consider this information and to weigh the no-action alternative against the impacts of the Replacement Project. He noted that climate change does not respect political borders and requested that the State of Michigan consider the externalities of GHG emissions that fall outside its borders.

Turning to the climate damages estimate for the Replacement Project, Dr. Howard stated that he relied on Mr. Erickson’s estimates of the metric tons of CO₂e emissions that are associated with

construction and operation of the Replacement Project, as well as the lifecycle emissions of transported oil and NGLs relative to emissions in the no-action scenario. Dr. Howard explained that based on Enbridge's estimates, he assumes construction would begin in 2027 and end in 2028. He noted that Mr. Erickson's calculation of 87,000 metric tons of CO₂e emissions from construction was split between 2027 and 2028. Dr. Howard asserted that:

[w]e then multiplied these annual construction emissions by the corresponding year's estimates of the social cost of carbon dioxide, considering the four sets of values defined above (3%, 2.5%, 2%, and high-impact). We then discounted these future damage estimates back to their present-day value in the current year of 2021 using the discount rate that corresponds to the underlying rate used to calculate the relevant social cost of carbon values (i.e., a 2.5% discount rate is used when applying the social cost of carbon values calculated at a 2.5% rate).

9 Tr 1128-1129.

For his calculation, Dr. Howard assumed annual emissions of 520 metric tons of CO₂e, with operations of the Replacement Project beginning in 2029 and continuing through the 99-year service life to 2127. However, he noted that the IWG/U.S. Environmental Protection Agency (EPA) social cost of CO₂ estimates do not extend beyond 2070; therefore, he used "linear extrapolation" to project the IWG/EPA's estimates beyond 2070. 9 Tr 1129; Exhibits ELP-9 and ELP-10. Dr. Howard opined that "[f]rom 2027 to 2070, the climate costs of the Proposed Project's emissions from the construction and operation of the pipeline equals \$5.0 million dollars when applying the social cost of carbon values calculated at the 3% discount rate. 84% of these effects stem from the pipeline's construction." 9 Tr 1130.

Turning to the products to be delivered through the replacement pipe segment, Dr. Howard again relied on Mr. Erickson's estimates and assumed a net increase of 27 million metric tons of CO₂e annually from the products transported by the new pipeline as compared to emissions under the no-action alternative. 9 Tr 1131. He estimated the social cost of CO₂ in 2020 dollars to be

\$41 billion using the 3% discount rate for 2027-2070, \$65 billion using a 2.5% discount rate, and \$124 billion using the High Impact estimate. According to Dr. Howard, his climate cost projection is likely a conservative estimate for three reasons: (1) certain highly significant forms of climate damage have not yet been quantified, (2) he applied a conservative discount rate of 3% that is likely outdated, and (3) the \$41 billion reflects the net present value of the Replacement Project's climate impact only through 2070 and not beyond because the federal government's estimates of the social cost of carbon currently end in 2070. 9 Tr 1133.

Dr. Jonathon T. Overpeck stated that he is an interdisciplinary climate scientist and the Samuel A. Graham Dean of the School for Environment and Sustainability at the University of Michigan. 9 Tr 1137. He testified as an expert witness on behalf of ELPC/MiCAN and sponsored Exhibits ELP-11 through ELP-16. Dr. Overpeck stated that he has 40 years of experience studying climate change, that he served as the "Working Group 1 Coordinating Lead Author for the Nobel Prize-winning IPCC 4th Assessment (2007)," and that he served on Michigan's Council on Climate Solutions. 9 Tr 1139.

Dr. Overpeck stated that climate change is tied to human activity, and that 97%-100% of scientists believe that the burning of fossil fuels is warming the planet. He warned that not only are changes to the climate currently occurring but they are accelerating. In addition, Dr. Overpeck asserted that climate change is affecting Michigan and the Great Lakes region, which is demonstrated by the significant temperature and precipitation related changes, increased flooding, and recent record high water levels in the Great Lakes. Furthermore, he explained that:

[t]he Great Lakes, as well as smaller water bodies in the region, are all warming substantially, and the increase in average and extreme precipitation is also generating more runoff into the lakes. Collectively, human-driven climate changes are changing the lake environments in dramatic ways, altering the temperature, nutrient and oxygen gradients in the lakes. Moreover, the warming is reducing lake

ice duration, coverage and thickness, which affects the lake's ecosystems and the region's climate.

9 Tr 1149. Dr. Overpeck described possible climate futures and tipping points, including algal blooms in the Great Lakes resulting from more intense rainfall, and he expressed concern regarding the future quality of drinking water. He also described the various tipping points for the Earth's oceans.

Dr. Overpeck opined that continued reliance on fossil fuels will make these impacts more significant. He stated that "fossil-fuel-rich greenhouse gas emissions have the potential to warm Michigan and the Great Lakes region by an additional 5° [Celsius] or more by the end of the century," which will result in warmer surface air, warmer winters, more extreme-heat days, more annual precipitation, and worse droughts and storms. 9 Tr 1159. Dr. Overpeck concluded that there will be profound disruption of natural resources in the region, including greater tree mortality and increased lethal anoxic conditions in the lakes. Additionally, he stated that "[t]ourism, recreation, water supplies, healthy natural resources and more are all at increasing risk in Michigan and the Great Lakes region as long as we permit greenhouse gas emission[s] to continue."

9 Tr 1163.

Regarding human health, Dr. Overpeck stated:

Michigan and the Great Lakes region will likely see a large increase in extreme temperature-related premature deaths if greenhouse gas emissions are not halted quickly. Increased flooding, fueled by greenhouse gas emissions, will become even more lethal and increase health risks related to degraded water treatment, disease spread, and access to critical health services. Risks from disease are also made worse by climate change.

9 Tr 1163 (citing Exhibit ELP-15). He contended that climate change adaptation strategies are not likely to be cost-effective or sufficient.

Dr. Stanton stated that she is the Director and Senior Economist at the Applied Economics Clinic. She testified as an expert witness on behalf of ELPC/MiCAN and Bay Mills, and she sponsored Exhibits ELP-17 through ELP-25, and ELP-29. Dr. Stanton stated that the purpose of her “testimony is to determine whether ‘no-action’ was considered by Enbridge as an alternative that would meet the Company’s stated purpose for the Proposed Project and whether such an alternative is feasible.” 9 Tr 942.

Dr. Stanton noted that Enbridge considered three alternatives to operating the dual pipelines: (1) the Replacement Project, (2) the Open-Cut Alternative, and (3) the HDD method. She asserted that Enbridge did not analyze a no-action alternative and that, consequently, the company “overlooked an essential alternative that would meet its stated purpose of alleviating environmental risks to the Great Lakes.” 9 Tr 946. Dr. Stanton stated that, in her opinion, it is “best practice” to consider a no-action alternative because it provides the Commission with all available alternatives for alleviating potential environmental harm to the Great Lakes. 9 Tr 946. In addition, she contended that because the State of Michigan has ordered a shutdown of the dual pipelines, a no-action alternative should be part of a full and proper alternatives analysis.

Dr. Stanton stated that if Line 5 were shut down and the products shipped on the pipeline were no longer available, Michigan consumers would still be able to heat their homes. She asserted that current propane consumers would either purchase fuels that were transported by rail and truck or switch to non-hydrocarbon fuels, such as modern heat pumps. Dr. Stanton averred that her findings are consistent with the short- and long-term recommendations of the U.P. Energy Task Force:

The UP Energy Task Force report suggests the following alternatives to propane supplies via Line 5: the increased use of rail infrastructure and the creation of new track capacity; improvement of transloading in the Upper Peninsula; new wholesale and retail storage capacity, maximizing propane injected into storage reserves;

developing a “Strategic Propane Reserve;” requiring contracts with the state government to have an attestation that companies will meet their supply obligations if Line 5 is shut down; pre-buying of propane to lock-in supply; and removal of barriers to propane deliverability (land acquisition, brownfield redevelopment assistance and permitting). The UP Energy Task Force’s analysis of propane supply alternatives also considered trucking.

9 Tr 950-951 (citing Exhibits ELP-22 and ELP-23). In addition, she contended that “[m]odern electric heat pumps are a practical and economic alternative to propane space heating; electric hot water heaters (including heat pump hot water heaters) . . . can replace propane water heaters, stoves and dryers,” and she claimed that air source heat pumps are four times more efficient than propane heaters. 9 Tr 952. Furthermore, Dr. Stanton testified that propane heaters emit twice the amount of GHGs than “air source heat pumps do for the same amount of heat.” 9 Tr 953. She noted that heat pumps are available in Michigan, however there may be significant upfront costs for the conversion. Dr. Stanton asserted that the upfront costs could be addressed through a state-mandated zero-interest loan, and she noted that utilities offer a small rebate for installation.

Dr. Stanton disagreed with Enbridge’s claim that if the Straits Line 5 segment is closed and not replaced, there will be a negative impact on Michigan oil producers, refineries, and jet fuel consumers. She stated that Line 5 provides only 10% of the jet fuel used at Detroit Metropolitan Wayne County Airport, rather than the 50% asserted by Enbridge. Dr. Stanton also suggested that Enbridge has exaggerated the alleged impact on refineries; rather, she argued that the closure of Line 5 would have “a positive or neutral effect on the Michigan economy.” 9 Tr 957. She explained that businesses that have focused their investments in fossil fuels will see losses; however, “businesses with investments in electric supply, electric equipment manufacture and installation, and other ‘green’ goods and services should benefits [sic] from a Line 5 closure.” 9 Tr 958. In addition, Dr. Stanton asserted that the question of whether a particular alternative

may benefit some businesses more than others should make no difference in the determination of whether the alternative is reasonable and prudent.

Finally, Dr. Stanton contended that a proper alternatives analysis must look at whether the demand for fossil fuels will be the same in 10, 25, and 100 years. She noted that Executive Directive (ED) 2020-10, Executive Order 2020-182, and the MI Healthy Climate Plan require statewide reduction of GHG emissions by 2025 and a “transition towards economywide carbon neutrality” by 2050. 9 Tr 960 (quoting Exhibit ELP-25). Accordingly, Dr. Stanton opined that it is not reasonable to assume that fossil fuel demand will not change, stating that “[w]ithin the next two to three decades, operating fossil fuel-fired equipment will not be permitted” in Michigan and fossil-fueled equipment and infrastructure will become stranded assets. 9 Tr 960; *see also*, 9 Tr 961-962. She argued that the no-action alternative represents the exercise of sound judgment because it achieves Enbridge’s express purpose of eliminating the environmental risk to the Straits and advances climate change goals that have recently been established by state government.

B. Rebuttal Testimony

1. Enbridge Energy, Limited Partnership

Mr. Turner provided rebuttal testimony responding “to various environmental issues relating to the construction of the tunnel raised by Staff and intervenors.” 7 Tr 609. To begin, Mr. Turner explained how Enbridge addressed potential environmental impairments. He testified that Enbridge developed an EPP, which is submitted as Exhibit A-11, pages 228-359. Mr. Turner stated that “[t]he baseline EPP is intended to meet or exceed federal, state, and local environmental protection and erosion control requirements, specifications, and practices” and that over time “a baseline EPP may be revised to include specifics for a particular project.” 7 Tr 609. He noted that

an updated EPP was provided to the Staff through discovery and is included as Exhibit S-19, pages 3-59. Additionally, Mr. Turner asserted that:

the United States Army Corps of Engineers (USACE) will prepare an Environmental Impact Statement (EIS) to ensure compliance with the National Environmental Policy Act (NEPA) and the EIS will evaluate potential impacts to, and mitigation measures for, environmental and cultural resources. Eventually, a detailed project-specific EPP will be developed after federal, state, and local authorizations have been obtained and prior to construction, in order to incorporate any permit conditions not specifically addressed in the earlier versions of the EPP. To ensure that Enbridge and its contractors comply with all applicable local, state, and federal regulatory requirements and permit conditions, Enbridge will develop a project-specific Environmental Training and Compliance Manual. This manual will be used to train construction personnel and establish guidelines for project-specific environmental protection measures that will meet or exceed applicable permit conditions and Enbridge standards.

7 Tr 610.

In response to Ms. Mooney's recommendation that Enbridge develop plans to address the increased noise generated from construction, Mr. Turner noted that the residences located within the workspaces and adjacent to the south side workspace will not be inhabited during construction because they have been purchased by Enbridge. In addition, he averred that Enbridge will implement the following measures to mitigate the sound impacts to nearby residences:

- Equipment will have muffled exhausts;
- Construction vehicles will minimize idle time to the extent practicable;
- Contractors will utilize sound control devices no less effective than those provided by the manufacturer and maintain equipment in accordance with manufacturer's recommendations;
- Equipment with the highest noise impact will be operated only when necessary;
- Equipment shields will be utilized at the contractor's discretion; and
- If blasting is required, blasting mats may be used as applicable.

7 Tr 612. Mr. Turner opined that because of the increased construction noise, wildlife may temporarily relocate but would likely return after construction. In any event, he asserted that "[g]iven the limited [construction] area and abundant adjacent habitat, the short-term disturbance of local fauna due to construction noise will not have population-level effects." 7 Tr 612.

In response to Ms. Mooney's recommendation that Enbridge develop plans to address increased dust and particulates from the construction project, Mr. Turner testified that Enbridge's typical dust control measures are outlined in the company's EPP. He contended that dust control plans are also included "in the stormwater pollution prevention plans and county erosion and sediment control permits that will be developed/obtained prior to construction." 7 Tr 612. Moreover, Mr. Turner stated that if additional mitigation is required at the time of construction, "the contractors may develop and implement additional measures based on industry-standard practices for dust control at construction sites." 7 Tr 612.

Next, Mr. Turner explained how Enbridge will control dust emissions, asserting that these measures "will meet or exceed the dust control best management practices (BMPs) outlined in the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Nonpoint Source Best Management Practices Manual (2017)." 7 Tr 612-613. He stated that the dust control measures include:

- Watering access roads, storage piles and disturbed surfaces;
- Using temporary covers for stockpiles and other areas where vehicle traffic does not occur (e.g., mulch, vegetation, erosion control blanket, tarps, etc.);
- Placement of construction stone on unpaved areas, as practicable;
- Imposing speed restrictions for vehicles driving on unpaved areas; and
- Installing gravel tracking pads at entrances to the workspaces to help remove dirt from tires and tracks.

7 Tr 613. Mr. Turner asserted that additional mitigation measures will be utilized if blasting is required such as "fog cannons to spray atomized water across the excavation area" or pre-soaking the excavation area with water and using blast mats, if necessary. 7 Tr 613.

Regarding Ms. Mooney's claim that increased light from construction will impact nearby residences, fauna, and the Headlands International Dark Sky Park, Mr. Turner testified that "[l]ight generated during construction activities will be limited to discrete times when 24-hour

construction activities are required.” 7 Tr 613. In addition, he stated that, during periods of nighttime construction, lighting will only be used to ensure that work areas are sufficiently illuminated so construction workers can avoid hazardous conditions and injuries. To reduce the impact of work-site lighting on residences and fauna, Mr. Turner asserted that Enbridge will implement the following measures:

- lighting will be downward-facing and include hooded lights to prevent skyglow;
- lighting will be of minimum necessary brightness while still allowing for required worker safety and security; and
- lighting will only be operated in areas of active construction.

7 Tr 613. Mr. Turner added that “[p]roject-specific plans will be developed after applicable federal, state, and local authorizations have been obtained and prior to construction, in order to incorporate any permit conditions not specifically addressed in the current version of the EPP and incorporated as necessary in the project-specific Environmental Training and Compliance Manual.” 7 Tr 614.

Mr. Turner opined that the addition of permanent low-level lighting needed for operation of the tunnel after construction and the installation of security lighting at the ventilation building will not be a significant increase of light. Further, he stated that to minimize and mitigate impacts upon the Headlands International Dark Sky Park, Enbridge will develop a permanent operational lighting plan prior to construction, which may include motion-detected lighting, lighting at the minimum necessary brightness for operational safety and security, and downward-facing and hooded lighting to prevent skyglow. 7 Tr 614. Mr. Turner noted that Enbridge believes that permanent perimeter lighting is unnecessary.

Mr. Turner stated that Enbridge has developed plans to address Ms. Mooney’s concerns about surface water impairments. First, he testified that “[i]f water is generated from trench dewatering, then it would be discharged within the construction workspaces using practices outlined in

Section 16 of the EPP Staff Exhibit S-19.” 7 Tr 615. Mr. Turner explained that water generated from tunnel dewatering will be tested, monitored, and discharged pursuant to the authorizations in the NPDES permit. Second, he stated that “[s]ediment tracking from construction traffic will be controlled using erosion and sediment controls, as outlined in Enbridge’s EPP.” 7 Tr 615. Specifically, Mr. Turner explained that Enbridge will implement measures that include limiting vehicle access to the workspace, minimizing vehicle tracking of soil, street sweeping of sediment on public roads, employing temporary erosion and sediment control measures, and providing cat tracking. 7 Tr 615-616. He noted that additional soil and erosion management measures may be implemented as required by permits. Third, Mr. Turner testified that the water withdrawal from Lake Michigan for Enbridge’s hydrostatic testing “will have a de minimis impact on the overall volume of the Great Lakes” and that the “[w]ithdrawn water will be fully treated before being discharged via the outfalls.” 7 Tr 616.

In response to Ms. Mooney’s recommendation that Enbridge mitigate air quality impacts, Mr. Turner asserted that the equipment used to construct the Replacement Project must comply with EPA’s “mobile source regulations for on-road and non-road engines in 40 CFR Parts 85 to 90 and Parts 1033 to 1054.” 7 Tr 617. In addition, he testified that “Enbridge and its contractors will maintain all fossil-fueled construction equipment in accordance with manufacturer’s recommendations to minimize construction-related emissions. On-site vehicle idle time while in the construction area will be minimized for all equipment, to the extent practicable. Air emissions from the construction will be localized, intermittent, and short-term.” 7 Tr 617-618.

Next, Mr. Turner addressed five concerns regarding potential ground water impacts. As a preliminary matter, he noted that the tunnel and Replacement Project will be constructed according to the criteria set forth in the EPP, county soil and erosion control permits, EGLE’s Nonpoint

Source Best Management Practices Manual, and all applicable local, state, and federal permit and regulatory requirements. Turning to his first point, Mr. Turner contended that “[i]mpacts to surface drainage and groundwater recharge patterns due to construction activities including clearing, grading, trenching, and soil stockpiling activities will be minor, temporary, and will not significantly affect groundwater resources.” 7 Tr 618. Second, he stated that there may be an increase in surface runoff and a reduction in infiltration of rainfall but asserted that these impacts are “temporary and will not significantly affect groundwater resources.” 7 Tr 618. Third, Mr. Turner asserted that Enbridge has developed a spill plan that includes measures to prevent or minimize the impact of a hazardous material spill during construction. Fourth, he explained that nine drinking water wells within the workspace will be plugged and abandoned, and the remaining wells in the workspace will be properly protected. Mr. Turner averred that “[i]n the event construction adversely affects the well, it will be restored to its former quality, to the extent practicable, or replaced.” 7 Tr 621. Fifth, he concluded that the trenching, excavation, and backfill activities will be “will be minor, temporary, and will not significantly affect groundwater resources.” 7 Tr 621.

Mr. Turner testified that during construction of the Replacement Project, impacts to soils, vegetation, and surface water will be minimized by implementing the criteria set forth in the EPP.

He stated that these measures include:

- Locating equipment parking areas, equipment refueling areas, concrete coating activities, and hazardous material storage at least 100 feet from surface waters, unless unfeasible;
- Installing and maintaining temporary erosion and sediment control BMPs throughout construction and until final restoration is achieved; and
- Implementing the Spill Plan to help prevent spills from occurring and mitigating a spill or leak if it occurs during construction.

7 Tr 622. He then explained the specific measures that are included in Enbridge's Spill Plan.

7 Tr 622. In addition, Mr. Turner testified that Enbridge will comply with condition 14 of the EGLE Water Resources Division Permit that requires the company "to minimize the risk of spreading terrestrial and aquatic invasive species" during construction. 7 Tr 623.

Next, Mr. Turner responded to the concerns regarding cultural resources expressed by the Tribes and noted in Exhibit S-25. He stated that USACE is preparing an EIS and will evaluate potential impacts to cultural and historical resources as part of that effort, which is done in consultation with Michigan's First Nations Peoples. Mr. Turner added that the evaluation will look at "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use to historic properties (including properties of cultural or religious significance to Indian tribes) if such properties exist." 7 Tr 624. Mr. Turner asserted that the EGLE permit also addresses Tribal concerns in Special Condition 21, which reads as follows:

The Straits of Mackinac bottomland and shore are notable for the presence of historic properties, such as terrestrial and bottomland archaeological sites (including historic aircraft and shipwrecks), submerged paleo landscapes, cemeteries and isolated human burials, significant architecture and objects, historic districts, National Historic Landmarks, and traditional cultural properties and landscapes. The USACE has federal permitting authority over this project and is required to comply with Section 106 of the National Historic Preservation Act of 1966, as amended (Section 106). Section 106 requires federal agencies to consider the effects of their undertakings on historic properties in consultation with the State Historic Preservation Officer, consulting Tribes, and other stakeholders. Any adverse effects on historic properties must be avoided, minimized, or mitigated. The SHPO [State Historic Preservation Office] recommended [an] additional survey to identify historic properties in the project area (November 10, 2020). This recommendation will remain under consideration during the Section 106 consultation process. Note that historic properties on state-owned land and the state-owned bottomland are the property of the State of Michigan. Archaeological surveys that may be proposed on state-owned land and the state-owned bottomland will require a Department of Natural Resources Permit for Archaeological Exploration on State-Owned Land.

7 Tr 625 (quoting Exhibit A-17).

Mr. Turner stated that to address these concerns, Enbridge has performed a desktop and Phase I cultural resources investigation in coordination with USACE. He testified that:

geophysical surveys of the workspaces on the north and south sides, where practical, were conducted in the summer of 2021. Additionally, Enbridge conducted additional marine archaeological surveys within the area of potential effect in the summer and fall of 2021. Tribal officials were present for portions of the geophysical and marine surveys. Enbridge will also be paying for an ethnographic study to be performed by a third party under the direction of the USACE as part of the cultural resource evaluations that will be conducted as part of the EIS and Section 106 processes.

7 Tr 626. Mr. Turner noted that Enbridge's survey methods were approved by USACE and SHPO. He explained that the data from these surveys is currently being processed and will be provided to USACE, which will make determinations regarding the potential effect of the project on cultural and historical resources and will publish the results in the EIS. Mr. Turner added that Enbridge has conducted additional cultural resource and wetland surveys in the area of Outfall 002, and he noted that the data results are being processed and submitted to EGLE and USACE.

Furthermore, Mr. Turner testified that wetland and waterbody field surveys were completed for the Replacement Project and submitted to EGLE and USACE. He noted that no coastal alvar is present in the workspace. Mr. Turner stated that "[i]mpacts to limestone cobble shore will be limited to a small footprint required for the construction of Outfall 1 on the south side and Outfall 3 on the north side. Exhibit A-18 is the EGLE Responsiveness Summary for the Water Resources Permit, and it discusses the Permit conditions and efforts to minimize impacts to coastal wetlands." 7 Tr 628. He also noted that Exhibit A-15 is the EGLE Water Resources Permit, which includes authorization of the Replacement Project under Part 325 of the GLSLA.

Mr. Turner stated that the Replacement Project will have no direct impact on commercial fishing, fish populations, or spawning areas in the Great Lakes, including whitefish and walleye,

and there will be no permanent impacts to the lakebed or aquatic habitats. He noted that all water discharged to the Straits via the permitted outfalls will be tested in accordance with the EGLE NPDES permit. *See*, Exhibits A-15, A-16. In addition, he testified that construction of the Replacement Project will have no effect on wild rice and no direct impact on common loon populations. Mr. Turner contended that although construction “will include removal of individual sugar maple trees,” the Replacement Project “will not impact overall populations of sugar maple or maple syrup production.” 7 Tr 629.

Mr. Turner also responded to Dr. Cleland’s testimony regarding cultural resources. He referenced the desktop and Phase I cultural investigations, stating that:

[c]ultural resource consultants searched the files of the MI SHPO [Michigan SHPO] and the Office of the State Archaeologist (OSA) in order to identify cultural resource locations and investigations that have been previously recorded within a one-mile study area for the project. In 2019 and 2020, cultural resource consultants conducted Phase I cultural resources surveys in the north side and south side study areas in accordance with MI SHPO standards. . . . MI SHPO records show a total of 11 previously identified archaeological sites within one mile of the workspaces: these are one (1) unverified site on the north side, and five (5) unverified and five (5) verified sites on the south side of the Straits of Mackinac. Based on MI SHPO records, no previously recorded archaeological sites have been verified within the workspace; however, it may be possible that portions of three of the unverified sites cross into the workspace: sites 20EM11, 20EM12, and 20MK15.

7 Tr 632-633. Mr. Turner stated that with respect to the one historic structure and six archeological sites identified, none are recommended for inclusion in the NRHP by the cultural resource consultant. He noted that the information will be provided to USACE and USACE will complete the process in consultation with the Tribes and SHPO.

Finally, Mr. Turner stated that Enbridge will implement a UDP, which will be submitted to USACE for approval prior to construction. Exhibit A-12, pp. 98-102. Moreover, he asserted that the tunnel is being designed to avoid any impacts to the bottomlands of the Straits. Specifically, Mr. Turner stated that “[d]irect impacts to bottomlands will not occur as a result of tunnel

construction” with the exception of a small area around the temporary water intake structures.

7 Tr 636. He also cited a study that was conducted to evaluate the potential impacts of construction vibrations to very sensitive structures. Mr. Turner testified that:

[a]nticipated vibration levels could be close to 0.1 inches per second near the shoreline where the tunnel is less than 75 feet deep. The study noted that while impacts to sensitive sites on the lakebed are not likely to occur due to vibrations from the TBM, location specific analyses could be conducted to verify potential impacts if sensitive sites are present in near-shore areas where the tunnel is less than 75 feet deep.

7 Tr 636. He added that Enbridge conducted additional marine archeological surveys in the fall of 2021, which were developed by a third party, approved by USACE and SHPO, and witnessed by Tribal officials.

2. The Commission Staff

Mr. Chislea responded to MSCA’s testimony presented by Mr. Cooper regarding the construction of the replacement pipe segment in the tunnel. He recommended that “[f]or all mainline girth welds, Enbridge should be required to develop low-hydrogen welding procedures and qualify them per the requirements found in 49 CFR 195.214.” 12 Tr 1757. Mr. Chislea also recommended that the welding procedures include pre-heat requirements and inter-pass temperature requirements and that the non-destructive testing of the mainline girth welds include automatic phased array ultrasonic testing methods. He stated that if these recommendations are implemented, “post-heat treatment is not necessary.” 12 Tr 1758. Finally, Mr. Chislea sponsored Exhibit S-26, PHMSA’s response letter regarding their design review of the Replacement Project that was described in his direct testimony, stating that he sought “to admit the letter into evidence once we received it, which [he is] now doing as part of [his] rebuttal testimony.” 12 Tr 1758.

Responding to Dr. Stanton’s no-action alternative, wherein the Notice is enforced and the dual pipelines are shut down, Mr. Warner contended that the “scenario as described by Dr. Stanton is

not an appropriate alternative for consideration” in this case. 12 Tr 1739. He explained that:

(1) Dr. Stanton failed to support her claim that the Notice is likely to be enforced and a shutdown of the dual pipelines is likely to occur; (2) in the event the Commission denies Enbridge’s application for the Replacement Project, Enbridge still has continuing authority to operate the dual pipelines; (3) Enbridge has not indicated that it will be voluntarily shutting down Line 5; and (4) the purpose of the Replacement Project is not only to mitigate the risk of an oil spill but also to continue service on Line 5. *See*, 12 Tr 1740-1742. In addition, Mr. Warner stated that Dr. Stanton failed to demonstrate that it is likely that service on the dual pipelines will be discontinued because, as a result of the Notice, the Canadian government “formally invoked the dispute settlement provision of the 1977 Agreement between the Government of Canada and the Government of the United States of America Concerning Transit Pipelines. This escalation to international dispute resolution adds further uncertainty to the enforceability of the easement revocation which was initiated over a year ago.” 12 Tr 1741 (footnote omitted).

According to Mr. Warner, the more appropriate no-action alternative for Commission consideration “is the scenario in which the proposed Replacement Project is not completed.” 12 Tr 1742. He stated that if the Replacement Project is not constructed, the status quo would be maintained and there would be no effect on the current or future operation of Line 5. However, Mr. Warner contended that “[i]f the Dual Pipelines and Line 5 are shut down prior to the completion of [Commission] Case No. U-20763, the Commission should consider that new scenario (Line 5 shutdown scenario) to be the status quo. In the Line 5 shutdown scenario, Staff anticipated that Line 5 products would be transported by other methods, such as rail or trucking,” as described in Mr. Morese’s direct testimony. 12 Tr 1742.

Mr. Morese responded to the direct testimony of Mr. Erickson and Dr. Stanton, and he sponsored Exhibit S-28. He disagreed with these witnesses, stating that “[t]he appropriate ‘no-action’ before Staff and the Commission is the denial or withdrawal of Enbridge’s application, which would result in the status quo[:] operational Dual Pipelines resting on the bottomlands of the Great Lakes.” 12 Tr 1795. Mr. Morese argued that the status quo is less desirable than the Replacement Project because the location of the dual pipelines in the Straits poses a health, safety, and environmental risk. 12 Tr 1795.

Mr. Morese also disagreed with some of Dr. Stanton’s assertions regarding the ability of electric heat pumps to act as a practical and economic alternative to propane in Michigan. He noted that according to research, the lifecycle costs for electric heat pumps can be high compared to natural gas furnaces. Mr. Morese explained that “positive lifecycle costs for heat pumps can be expected for residents of states in the South and Northwest where the temperatures are warmer, but not for states in the Midwest such as Michigan, Illinois, or Wisconsin.” 12 Tr 1796. He further noted that many homes will need an approximate \$2,000 upgrade to 200-amp electrical service and opined that parts of the distribution system may also require upgrades or improvements to handle the additional load caused by electric heat pumps. Finally, Mr. Morese asserted that with a typical conversion cost (propane to electric heat pump) of more than \$9,000, there are problems with affordability. Therefore, to reduce GHG emissions from residential consumers/homes as recommended by Dr. Stanton, Mr. Morese testified that it will require a holistic approach supported by local, state, and national policy, with the involvement of building codes, incentives, tax credits, rebates, and low-interest loans.

Mr. Morese also objected to Dr. Stanton’s reliance on a study conducted in Massachusetts that found that propane is far more expensive than other forms of heating. He asserted that those study

conclusions are “not applicable to Michigan because the price structures for heating alternatives are different in the Northeast U.S. compared to those seen in the Midwest, particularly in Michigan.” 12 Tr 1799. Moreover, Mr. Morese disputed Dr. Stanton’s claim that GHG emissions limits or other zero emission energy requirements will prohibit the future use of fossil-fuel equipment and, as a result, propane heating equipment will become a stranded asset. He posited that the definition of carbon neutrality does not generally include the notion that all fossil fuel burning activities will be prohibited.

In response to Mr. Erickson’s claim that a shutdown of Line 5 will result in increased petroleum prices, reduced demand, and reduced GHG emissions, Mr. Morese contended that Mr. Erickson’s analysis has flawed assumptions. Mr. Morese explained that:

[w]hile stating that the U.S. Dept. of Energy’s EIA predicted almost \$73/bbl [barrel] crude oil for 2030 . . . , Mr. Erickson’s analysis chose to utilize the much more conservative \$53/bbl predicted by the Canadian Energy Regulator This singular decision underpins Mr. Erickson’s argument that future oil projects would go undeveloped in the greater Williston Basin and has ramifications throughout his testimony. It is historically very difficult to predict the future price of volatile commodities such as crude oil. As of November 15, 2021, Brent crude oil is over \$80 a barrel.

12 Tr 1801-1802. Although Mr. Morese conceded that the additional cost of transporting crude oil by rail would be approximately \$6/bbl, he disagreed with Mr. Erickson that the \$6/bbl increase will result in 290,000 barrels of crude oil being stranded in the Williston Basin in Canada. He also noted that Canada’s regional throughput is increasing, and he disputed the price elasticity value chosen by Mr. Erickson. Furthermore, Mr. Morese objected to Mr. Erickson’s calculation that a shutdown of Line 5 would result in a long-term increase in the global price of crude oil by about \$0.29/bbl. He stated that the “Staff is not confident the estimated increase of \$0.29/bbl is significant enough to actually alter demand and impact behavioral change on the part of the consumer.” 12 Tr 1804-1805.

Finally, Mr. Morese disagreed with Mr. Erickson that a shutdown of Line 5 would result in increased petroleum prices and reduced worldwide petroleum demand. He stated that:

Line 5's volume of 450,000 crude barrels accounts for approximately 0.45 percent of daily world crude consumption based on 100,000,000 barrels. Planned and unplanned production or supply outages are frequent occurrences. These outages can and do have impacts on crude oil prices, but these impacts are difficult to predict and are often short term in nature when relatively small volumes are involved. As seen from the chart below, monthly unplanned disruptions averaged 2.58 million barrels a day over the last ten years, ranging from under 100,000 barrels to over 4,000,000 barrels. When compared to the monthly West Texas Intermediate (WTI) price of crude oil, it is difficult to precisely pinpoint the relationship Mr. Erickson relies on.

12 Tr 1805. Mr. Morese also noted that the Organization of Petroleum Exporting Countries have significant excess production capacity available to address market shortfalls, and he posited that the world crude oil market would adjust to limit any long-term price impact. 12 Tr 1806. Finally, he stated that the consumption of liquid fuels has trended upward for 20 straight years with little indication that this trend is influenced by insignificant price changes.

Mr. Ponebshek responded to Mr. Erickson's testimony and sponsored Exhibit S-27. He noted that Mr. Erickson's estimate of GHG emissions associated with the construction of the replacement pipe segment is significantly higher than the estimate calculated by Weston.

Mr. Ponebshek explained that Weston's GHG emissions estimate included Scope 1 emissions, which are fuel combustion, company vehicle, and fugitive emissions. He noted that Mr. Erickson's GHG emissions estimate also included Scope 1 emissions but that Mr. Erickson added Scope 2 emissions (purchased electricity, heat, and steam) and Scope 3 emissions (purchased goods and services, business travel, employee commuting, waste disposal, use of sold products, transportation and distribution, investments, leased assets, and franchises).

Mr. Ponebshek asserted that Weston's estimate of Scope 1 emissions is comparable to Mr. Erickson's estimate. However, Mr. Ponebshek disagreed with the source data used by

Mr. Erickson for the Scope 2 emissions, and he believed that Scope 3 emissions are “outside a proper range for this study.” 12 Tr 1879.

3. Environmental Law & Policy Center and Michigan Climate Action Network

Mr. Erickson responded to Mr. Morese’s and Mr. Ponebshek’s testimony regarding GHG emissions analysis assumptions, and he sponsored Exhibits ELP-26 through ELP-28. In his rebuttal testimony, Mr. Erickson stated that he reached three main conclusions:

- First, Mr. Morese and Mr. Ponebshek erroneously assume that the Line 5 tunnel project, relative to a scenario in which this Proposed Project is not built, will have no effect on consumption of the oil anticipated to be handled by the project, nor any effect on emissions from producing or burning that oil. This is contrary to portions of their own testimony that support a conclusion that, if Line 5 is not re-started, oil prices would increase and global oil consumption decrease.
- Second, and perhaps as a consequence of the error above, Mr. Morese and Mr. Ponebshek fail to estimate or disclose the largest sources of greenhouse gas emissions associated with the proposed Line 5 tunnel project: the emissions associated with extracting and burning the oil and other liquids anticipated to be handled by the project.
- Third, Mr. Ponebshek fails to estimate the largest sources of emissions associated with tunnel construction: those from electricity to power the tunnel boring machine and the concrete used to construct the tunnel.

9 Tr 1087; *see also*, 9 Tr 1088-1102.

Mr. Erickson noted that according to Mr. Morese, the oil market is “relatively price inelastic” in the short term and, therefore, an increase in price would not result in a meaningful decrease in demand. 9 Tr 1090 (citing 12 Tr 1779). However, Mr. Erickson stated that, “by assuming that there would be zero change in global oil usage, [Mr. Morese] is treating demand as *perfectly* inelastic (elasticity of zero) – not *relatively* inelastic—which, as [Mr. Erickson] described above, is contrary to the evidence [Mr. Morese] cites.” 9 Tr 1091 (emphasis in original). He also asserted that Mr. Morese only analyzed oil consumption in Michigan and that Mr. Morese failed to

consider the effect of a price increase globally. Furthermore, Mr. Erickson disagreed with Mr. Morese's use of short-term elasticities, arguing that Mr. Morese should have used long-term elasticities because it is more appropriate "for a project like the Proposed Project – designed to last 99 years" 9 Tr 1092.

Mr. Erickson contended that Mr. Morese inappropriately concluded "that oil consumption will not be affected if the existing Line 5 shuts down and the tunnel is not approved." 9 Tr 1902. Mr. Erickson asserted that the Bureau of Ocean Energy Management (BOEM) of the U.S. Department of Interior made a similar error during its analysis of global oil consumption for the Liberty Project in Alaska, which resulted in the 9th Circuit Court of Appeals finding that BOEM's analysis was arbitrary and capricious.

Next, Mr. Erickson claimed that:

[b]ecause Mr. Ponebshek did not estimate GHG emissions associated with increased oil consumption, decision-makers do not have a complete and transparent basis for making decisions about the environmental impacts that will be caused by the proposed project compared to if the proposed tunnel project was not built. Moreover, by not accounting for the Proposed Project's increase in greenhouse gas emissions, Mr. Morese inappropriately suggests that the ecological impacts of GHG emissions need not be considered

9 Tr 1095. He argued that Mr. Morese and Mr. Ponebshek improperly narrowed the focus of their analysis to the primary beginning and end points of the supply chain and the direct emissions from the Replacement Project. Mr. Erickson asserted that a proper GHG emissions analysis should include the direct and indirect GHG emissions from the Replacement Project and that "uncertainty is no excuse for excluding these very large sources of emissions, because methods to calculate them are readily available, and associated uncertainties can be described." 9 Tr 1099 (footnote omitted).

Mr. Erickson also argued that making electricity, cement, and steel to construct the tunnel results in CO₂ emissions. He asserted that there are readily available methods to estimate these emissions and that Mr. Ponebshek's analysis should have included these estimates.

9 Tr 1100-1102.

Dr. Stanton responded to Mr. Morese's testimony, and she sponsored Exhibit ELP-29. She agreed with Mr. Morese that it is not feasible for most Michigan propane customers to switch to natural gas for home heating and other fuel needs but disagreed that it is infeasible for the majority of Michigan's propane customers to switch to electricity for home heating needs. Dr. Stanton explained that if Line 5 is shut down and the price of propane increases, "[m]any households will electrify, and electrification will be economical for many households. However, households would not be forced to electrify in the short term. Accordingly, some households may, in the short term, respond to an increase in propane prices by reducing somewhat the amount of propane they consume and paying more for the propane they continue to purchase." 9 Tr 967. She stated that if customers continue to use propane but at a lower volume, it will cost each household an additional \$55 to \$209 per year.

In addition, Dr. Stanton contended that MTU researchers found that after transitioning from propane to heat pumps for residential buildings, there were lower lifetime costs and lower GHG emissions, as shown in Exhibit ELP-29. Furthermore, she noted that an additional benefit of switching from propane to electric heat pumps is that "[e]very kWh [kilowatt-hour] of renewable energy added to Michigan's grid will reduce electric emission rates, increase savings from a propane-to-electric heat pump transition, and decrease its dollar per ton cost." 9 Tr 970.

Dr. Stanton acknowledged that there may be up-front costs to transition to heat pumps that may be cost prohibitive for low-income families. However, she stated that "zero- and low-interest loan

programs, geared to meet the needs of households at all income levels,” should be “an essential part of an equitable decarbonization effort.” 9 Tr 971.

Next, Dr. Stanton asserted that “Mr. Morese has not provided any support or rationale for his conclusion that a transition from gasoline to electric vehicles is ‘not a viable alternative’ or that there is a ‘continued need for access to fossil fuels in the short to medium term.’” 9 Tr 972 (quoting 12 Tr 1734, 1792). She also disagreed with Mr. Morese’s claim that if the price of petroleum products increases, demand will not decrease—i.e., the demand for products shipped through Line 5 is perfectly inelastic. Dr. Stanton stated that:

[d]emand for fossil fuels is more elastic over longer time frames (and less elastic over shorter time frames). Reacting to a fuel price increase over weeks, months or even a few years, consumers may be unable to change their consumer behavior quickly. Given more time, however, consumers react to a fuel price increase by changing behavior and/or purchasing equipment that runs on a different power source.

9 Tr 974. She encouraged the Commission to consider long-term demand elasticity when analyzing the no-action alternative in which Line 5 no longer operates.

4. Bay Mills Indian Community

Ms. Gravelle responded to Mr. Warner’s and Mr. Yee’s direct testimony, and she sponsored Exhibits BMC-38 through BMC-40. She testified that in the government-to-government consultation process, Mr. Warner mischaracterized how the Tribes’ concerns with the Replacement Project would be addressed. She stated that:

[p]ursuant to Executive Directive No. 2019-17, . . . each executive agency must consult *on a government-to-government basis* with the tribes before taking an action or implementing a decision that may affect one or more of the tribes. Contrary to Mr. Warner’s assertion, the obligations of Executive Directive No. 2019-17 were not satisfied when the Staff chose to send a memorandum—on the day before testimony was due to be filed in the contested case—that attempted to summarize discussions that took place between the Staff and the tribes. Bay Mills’ concerns about the tunnel project are not accurately or comprehensively described in the Staff’s memo. The memo also does not accurately or

comprehensively describe how any of Bay Mills' concerns were addressed in the [Commission]'s final decision on the proposed tunnel as required by the Executive Directive, as no final decision has been made.

10 Tr 1436 (emphasis in original). Ms. Gravelle opined that because Bay Mills and the Staff are both parties to this litigation and have taken adverse positions, the free exchange of ideas that is necessary for an effective consultation has not been able to occur and communication has been hampered. In addition, Ms. Gravelle contended that, according to the Staff, the consultation process is complete because the Staff has submitted testimony summarizing "what it believes to be the tribes' concerns. But, consistent with ED No. 2019-17, government-to-government consultation should continue until there is a final decision or action. The submission of testimony in the contested case is not a final decision or action in this matter." 10 Tr 1437.

Moreover, Ms. Gravelle objected to the Staff's reliance on Mr. Yee's testimony as evidence that the Staff's consultation obligation has been satisfied. She stated that "Mr. Yee participated in one meeting between the [Commission] Staff and the tribes but never asked a single question about the tribes' concerns. He offered no opinion about any issues raised." 10 Tr 1438.

Ms. Gravelle opined that Mr. Yee has no understanding of Bay Mills' position regarding the Replacement Project and, as a result, could not assist the Staff in its consultation obligation.

Ms. Gravelle also disagreed with Mr. Warner's view "that the USACE will complete a comprehensive and rigorous study in preparation of the Environmental Impact Statement" 10 Tr 1439. She stated that USACE "announced its intention not to follow the proper regulatory process under Section 106" 10 Tr 1439; *see also*, 54 USC 306108; 36 CFR 60.4; Exhibits BMC-38, BMC-39. Even if USACE uses the appropriate process and complies with Section 106, Ms. Gravelle asserted that Section 106 only requires that federal agencies consider the effects of the Replacement Project on historic properties, not cultural resources. Thus, she

contended that the Staff should not rely on USACE to conduct a proper review of cultural resources in its EIS. Finally, Ms. Gravelle asserted that the Commission should coordinate with the SHPO to determine whether the Replacement Project will impact cultural resources.

Mr. Kuprewicz responded to the Staff's and MSCA's testimony and sponsored Exhibit BMC-37. He asserted that the Staff underestimates the potential for a release of Line 5 products into the Straits from the tunnel. Mr. Kuprewicz explained that although the risk of release is low, it is not negligible and could occur "by way of a catastrophic explosion" caused by a spark from electrical equipment or human error. 10 Tr 1326. He opined that the ventilation system is not infallible, cannot eliminate all fuel vapor from the tunnel, and will not prevent "an explosion from occurring following the accumulation, or pocketing, of vapor in the tunnel." 10 Tr 1328. To help prevent an electrical ignition of fuel vapor, Mr. Kuprewicz suggested that all electrical equipment comply with Class 1, Division 1 specifications, rather than Class 1, Division 2 specifications.

Mr. Kuprewicz noted that the Replacement Project presents the opportunity to increase the volume and, therefore, the capacity of Line 5 because the new 30-inch diameter replacement pipe segment will have a maximum operating pressure of 1440 pounds per square inch gauge (psig). Accordingly, he disputed the Staff's claim that the tunnel would take 50 hours to fill with petroleum product. Rather, Mr. Kuprewicz asserted that because the replacement pipe segment will have a greater operating capacity, the tunnel will fill more quickly, which increases the environmental risk in the event of a release into the Straits. *See*, 10 Tr 1331; Exhibit S-16, Table 2.

In addition, Mr. Kuprewicz contended that "the Staff is not taking into account that this Tunnel Project is relying too heavily on Computation Pipeline Monitoring ('CPM')-based release

detection approaches” 10 Tr 1332. He stated that “[b]ased on my knowledge and expertise with pipeline safety measures, CPM-based released detection approaches defined in federal pipeline safety regulation are not reliable enough nor rapid enough for timely indication of leak detection of the pipeline segment in the unique siting/placement within a tunnel.” 10 Tr 1332. Mr. Kuprewicz argued that a second leak detection system with mandatory shutdown procedures should take priority over the CPM-based approach.

Next, Mr. Kuprewicz asserted that the Replacement Project should not be approved because the Staff failed to “acknowledge that human error creates a risk that crude oil and/or propane will be released in the tunnel, that there will be a delay in recognizing a release, and that the released crude oil or propane will ignite.” 10 Tr 1335. He contended that the Staff is overly reliant on the protection afforded by compliance with PHMSA regulations and CPM, stating that these standards and technology will not prevent a release of Line 5 products into the Straits.

5. Michigan Propane Gas Association

Michael D. Sloan, Managing Director of the natural gas and liquids advisory services practice at ICF, provided rebuttal testimony on behalf of the Associations. Mr. Sloan testified that Dr. Stanton’s recommended conversion to electric heat pumps fails “to provide any assessment of the timeline of a conversion away from propane, hence does not provide any insight into whether or not her proposed solution to the Line 5 shutdown would address the impacts on Michigan propane customers in the near to medium term (one to ten years).” 8 Tr 905. He noted that Dr. Stanton seems to rely on the recommendations from the U.P. Energy Task Force to address the near-term impacts of a potential Line 5 shut down. However, Mr. Sloan contended that:

the Upper Peninsula Task Force proposals are unlikely to reduce the price impacts of the termination, and . . . will have only a limited impact on the ability of the system to respond to extreme weather conditions or other supply shortages. They do not and cannot replace the supply flexibility provided by the regional propane production facilitated by Line 5. In addition, they are focused on propane markets in the Upper Peninsula and will have limited impact on Michigan propane consumers outside of the Upper Peninsula. While the Upper Peninsula represents the highest concentration of propane consumers per capita, the impacts on consumers in the rest of Michigan are also important to consider.

8 Tr 907.

Mr. Sloan stated that in the near term, to replace products transported by Line 5 following a shutdown, there would be an increased reliance on rail and truck transport, although “neither would be capable of offsetting the loss of Line 5 given the lack of existing infrastructure at locations dependent on propane deliveries manufactured from Line 5 volumes.” 8 Tr 906. In addition, he asserted that rail and truck transport each have economic and environmental impacts that must be considered such as road safety issues, environmental accidents, and increased direct GHG emissions.

Mr. Sloan disagreed with Dr. Stanton’s claim that “propane customers do not need a healthy propane distribution industry” in order to address heating and other energy uses. 8 Tr 908. He asserted that Dr. Stanton misjudges the complexity of the propane distribution and storage system when she states that homes and businesses can self-deliver propane in bottles or small tanks.

Mr. Sloan explained that Dr. Stanton “fails to recognize that propane used for most home heating is delivered via pressurized tanker trucks (bobtails) and stored in permanently mounted residential storage tanks that are permanently connected to the permanently mounted residential propane appliances.” 8 Tr 908-909. Furthermore, he stated that self-delivery “is generally limited to the 20 pound cylinders that are typically used by outdoor grills and portable outdoor space heaters and

firepits. A very small share of the propane market uses portable cylinders larger than 20 pounds.”
8 Tr 909.

Mr. Sloan also testified that the examples of heat pumps cited by Dr. Stanton are not relevant to Michigan or the U.P. He disputed Dr. Stanton’s reliance on heat pump studies from Massachusetts and San Francisco and on national averages, stating that these studies “do not reflect the actual conditions that heat pumps would face in the Upper Peninsula or the rest of Michigan” because: (1) temperatures in Michigan and the U.P. are much colder than the temperatures cited in the studies, (2) air conditioning requirements in the U.P. and propane prices in Michigan are lower than in the areas reflected in the studies, and (3) electricity prices in the U.P. are “significantly higher than national average electricity prices.” 8 Tr 910-911. He further explained that Michigan has more annual heating degree days compared to California and Massachusetts and “the difference in temperature affects the performance and the cost of the heat pumps.” 8 Tr 911. Mr. Sloan contended that for Michigan’s colder climate, “the heat pump needs to be a larger size, or have a larger backup heat source in order to meet peak space heating requirements,” which makes the units more expensive. 8 Tr 911-912. Furthermore, he testified that because Michigan has less cooling degree days compared to the national average, the economic impact of the heat pump’s air conditioning capability is reduced.

Regarding propane prices, Mr. Sloan noted that “[r]esidential propane prices are generally more than 50% higher in Massachusetts than in Michigan,” which indicates that heat pump economics for Massachusetts are not relevant for Michigan. 8 Tr 912 (footnote omitted). Concomitantly, he stated that Michigan’s electric prices are approximately “23 percent higher than the national average,” and the U.P.’s electric rates are “nearly 39 percent higher than the national

average. Hence the use of national average data to estimate heat pump economics is not useful for either Michigan or the Michigan Upper Peninsula.” 8 Tr 913-914 (footnotes omitted).

Mr. Sloan averred that Dr. Stanton’s indication that heat pumps are available in Michigan is not helpful and may be misleading. He explained that although heat pumps are widely available across the nation, only 10 percent of households in Michigan use electric space heating, which may include electric resistance space heating in addition to, or in lieu of, heat pumps. Mr. Sloan stated that the new generation cold climate heat pumps referred to by Dr. Stanton “still face significant challenges and are not yet widely available.” 8 Tr 914.

Mr. Sloan further opined that “[c]onversions of propane heating customers to heat pumps will not significantly reduce the propane supply issues associated with a potential Line 5 shutdown in the near to mid-term (one to ten years)” because, absent a mandate by the government with financial incentives, there is unlikely to be a transition to heat pumps. 8 Tr 915. He noted that when reviewing historical data, the transition will take time and, even with market intervention, the transition will be too gradual to affect the near to mid-term. Mr. Sloan estimated that “[e]ven if the State of Michigan halted all sales of propane appliances, it would take up to 20 years or more before the likely appliance replacement rate would offset the loss of propane supply associated with a shutdown of Line 5.” 8 Tr 916. He indicated that he has not observed evidence showing that heat pumps can take a market share from propane. Mr. Sloan opined that in the event of a Line 5 shut down in the near- to mid-term, it is more likely that customers would shift from propane to wood rather than to heat pumps. However, he stated that in the longer term, a slow transition to heat pumps is likely, given that the technology is improving.

Mr. Sloan also stated that, in addition to some U.P. customers converting to heat pumps, he “would also expect a significant number to convert (or convert back) to wood and to electric

resistance heat” if propane is not available or sales of propane appliances are prohibited. 8 Tr 918.

He reiterated that there are a number of lower-than-average cooling degree days in the U.P. and, therefore, the value of a heat pump is significantly reduced in this region. Mr. Sloan asserted that “customers that are forced to move away from propane are likely to look for other lower cost space heating sources, including wood burning stoves, instead of installing a heat pump.”

8 Tr 918. He also indicated that heat pumps may be more attractive in the remainder of Michigan given the lower heating load and higher cooling load, when compared to the U.P.

Mr. Sloan indicated that there is a lack of industry standards for utilizing heat pumps as heating systems and that contractors have struggled to properly size systems based upon heating loads. He opined that it will take significant incentives for customers and increased education efforts to accelerate the conversion from propane to electric heat pumps.

In response to Dr. Stanton’s testimony that, compared to air source heat pumps, propane heaters are less efficient and emit more GHGs, Mr. Sloan averred that Dr. Stanton’s estimated emissions benefits are not realistic in the short term. Based on ICF data, he stated that when assuming:

a new propane furnace has an efficiency of 82 percent, the heat pump would require an annual COP [coefficient of performance] of about 3.4 in order to support Dr. Stanton’s conclusions. While there will be some heat pumps capable of reaching this COP in practice, many will not, particularly when operating in a colder environment including both Michigan and the Michigan Upper Peninsula.

8 Tr 920. He noted that Dr. Stanton’s evidence “references a Minnesota heat pump study with a COP of 2.3, which would lead to a moderately lower carbon emissions for the heat pump relative to a propane furnace when combined with the current carbon intensity of electricity.” 8 Tr 920 (footnote omitted). However, Mr. Sloan noted that this is a laboratory calculation and, in reality, many customers would continue to utilize their propane furnace to supplement a heat pump during

the coldest parts of the year. Specifically, he stated that “[t]he electric utilities in Massachusetts that participate in the Mass Save program are currently recommending that customers not remove their existing fossil [fuel] heating systems, but rather keep them in operation for backup use.”

8 Tr 921 (footnote omitted).

In addition, Mr. Sloan testified that Dr. Stanton did not consider the impact that a transition to heat pumps would have on the electric grid, noting that “[t]he increase in power requirements is potentially significant, particularly if the transition occurs in an accelerated fashion.” 8 Tr 921 (footnote omitted). He averred that an increase in demand would require significant investments in the electrical grid, and he expected an increase in electricity prices even though the U.P. already has some of the highest electricity prices in the nation.

Finally, Mr. Sloan objected to Dr. Stanton’s testimony regarding stranded assets. He alleged that Dr. Stanton “has not conducted any analysis of the costs of potential stranded assets, and has ignored the costs of the assets that would of necessity become stranded in the event that service on Line 5 is terminated and Michigan shifts to a net zero energy economy.” 8 Tr 922. Mr. Sloan further disputed Dr. Stanton’s suggestion that propane use will need to be eliminated by 2050 to achieve the goal of net zero emissions. He indicated that, currently, “there is very little clarity on how Michigan consumers will meet net zero requirements, and it is clear that Michigan is considering alternative approaches, including approaches that would rely on carbon-based fuels.” 8 Tr 923. Mr. Sloan opined that renewable propane may be available before 2050, which would be consistent with environmental policies. He also noted that other low carbon technologies will develop in the next 30 years that “would allow existing propane households to be adapted to use hydrogen or other net zero emissions delivered fuels in the future, without requiring conversion to electric heat pumps.” 8 Tr 923.

Ms. Pastoor responded to Dr. Stanton's proffered no-action alternative. She asserted that no action means maintaining the status quo, which would result in continued operation of the dual pipelines. She stated that the purpose of the Replacement Project has always been to ensure the continued operation of Line 5 and that the need for Line 5 is evidenced by the 1953 order and the Second and Third Agreements. Ms. Pastoor posited that the litigation over the 1953 easement has not changed this purpose and she noted that the State of Michigan voluntarily dismissed its suit in federal court on November 30, 2021.²⁷

Ms. Pastoor also responded to Mr. Ponebshek's recommendation for a risk management plan. Noting that the construction of the tunnel is governed by the Tunnel Agreement, she stated that:

[i]t is anticipated that probe-hole testing ahead of the TBM will be addressed in the Construction Execution Plan. As far as access to real time data gathered during construction, the Tunnel Agreement requires an Independent Quality Assurance Contractor who is unaffiliated with Enbridge to report to the [MSCA]. The Independent Quality Assurance Contractor will have access to construction documents, monthly progress reports, and the construction sites. Exhibit A-5, p. 13 ¶7.8. Risk management is important to both Enbridge and the [MSCA] and it is and will be continuously addressed within the framework created by Act 359 and the Tunnel Agreement.

7 Tr 578.

Mr. Dennis responded to Mr. Cooper's testimony regarding the heat treatment of girth welds, stating that:

[f]or each project, Enbridge establishes a Welding Procedure Specification (WPS) that will require that the girth welds meet or exceed the strength, ductility, and hardness of the pipe used in the project. (See, Exhibit A-7, page 3 for the description of the pipe to be used this project.) This standard is established by Enbridge's own requirements, API [American Petroleum Institute] 1104 – "Welding of Pipelines and Related Facilities," and applicable provisions of ASME/ANSI B31.

²⁷ The State of Michigan filed a notice with the U.S. District Court in Grand Rapids, Michigan on November 30, 2021, stating that it was withdrawing its lawsuit against Enbridge from federal court so that the State could focus its efforts on a separate lawsuit that was filed in state court.

8 Tr 794.

Responding to Dr. Cleland, Mr. Dennis posited that the Replacement Project will not result in any release from the dual pipelines because the portal and shaft locations are safely offset from the dual pipelines. He explained that vibrations will be monitored and that the TBM supports the rock face during advancement through the tunnel. 8 Tr 795-796. Mr. Dennis averred that the expected vibrations at shallow depths will be well below industry limits. He also disagreed with Mr. Rodwan's assertions regarding untreated drilling fluid. Mr. Dennis opined that Mr. Rodwan is confusing inadvertent returns from HDD with the tunneling process proposed here, which does not rely on HDD. 8 Tr 797.

Mr. Eberth stated that he is the Director of Tribal Engagement, Public Affairs, Communication, and Sustainability for Enbridge. He provided rebuttal testimony on Enbridge's relations with First Nations People. Mr. Eberth stated that Enbridge seeks to reduce its operational impact on First Nations People while seeking to partner with them. He cited a 2017 shareholder resolution to implement an Indigenous Peoples Policy and to "integrate Indigenous rights sensitivities into our investment processes through early identification across our different types of investments." 7 Tr 770; Exhibit A-19. Mr. Eberth stated that Enbridge seeks to achieve Indigenous awareness training for all employees and contractors by the end of 2022. He asserted that in 2018, Enbridge attended a meeting with all of the 1836 Treaty Tribes and in 2019, Enbridge offered to meet with the Tribes. Mr. Eberth stated that the Tribes have participated in the regulatory process by filing comments with both EGLE and the Commission. He added that 13 Tribes have been invited to observe activities that are part of the USACE review process. *See*, 7 Tr 773; Exhibit A-23.

Jeffrey Bennett testified that he is a Senior Air Quality Engineer for Enbridge. He responded to Mr. Erickson's testimony regarding the GHG emissions associated with transportation by rail, stating that:

[a]ssuming rail transportation is available, my calculations show the GHG emissions from shipping crude oil by Line 5 by rail depending on the route would result in 0.9 to 1.9 million metric tons CO₂e per year. This represents a 4-to-9-fold increase in GHG emissions for rail transport compared to relocating Line 5's Straits crossing within a tunnel. Overall, my analysis shows that from a GHG emission standpoint only, the best alternative would be the no action alternative where the Dual Pipelines continued to be operated. The next best alternative would be to relocate Line 5's Straits crossing within a tunnel. The worst approach by far among these three alternatives would be the use of rail transport.

7 Tr 763. Mr. Bennett conceded that neither he nor Mr. Erickson determined whether rail transport is actually feasible. However, he stated that by his calculations, both northern and southern rail routes will result in significantly more GHG emissions than the Replacement Project. *See*, 7 Tr 763, p. 765; Exhibit A-26. Mr. Bennett disagreed with the notion of using the lifecycle GHG emissions for consideration in the analysis of whether rail transportation is an appropriate alternative, positing that the responsibility for GHG emissions should be placed on the causer of the emissions, such as the producer or end user.

Neil K. Earnest testified that he is a Professional Engineer and President of Muse, Stancil & Co. He responded to Mr. Erickson's testimony regarding GHG emissions associated with the use of rail transport. Mr. Earnest argued that Mr. Erickson's methodology is flawed and that Mr. Erickson made substantive mathematical errors in his calculations. He also questioned Mr. Erickson's assumption that Line 5 will close if the Replacement Project is not completed. *See*, 7 Tr 656-659.

Mr. Earnest asserted that Mr. Erickson failed to consider and analyze the pipeline takeaway capacity from North Dakota or any other region of the U.S. He also noted that the CER draft

report disagrees with Mr. Erickson's conclusions on takeaway capacity from Western Canada. In addition, Mr. Earnest opined that Mr. Erickson has no basis for his claims on higher Canadian crude oil supply costs or constraints caused by the failure to complete the Trans Mountain Expansion Project in Canada. *See*, 7 Tr 662-663.

Mr. Earnest argued that Mr. Erickson fails to demonstrate that a closure of Line 5 will force Bakken oil producers to shift from pipeline transportation to rail transportation; he noted that Line 5 is not a major route for oil producers. He further explained that Western Canadian oil producers "have pipeline transportation alternatives, and Mr. Erickson offers no evidence that the U.S. Bakken crude oil **producers** have pipeline transportation constraints. However, the U.S. and Canadian **refiners** that currently receive crude oil via Line 5 may have to use rail, to the extent that it is even possible, to transport crude oil to their refineries." 7 Tr 665 (emphasis in original). Mr. Earnest contended that the rail cost would be borne by the refiners and their customers, not the crude oil producers.

Mr. Earnest stated that Mr. Erickson's analysis regarding GHG emissions associated with rail transportation is unsupported and contains errors. Regarding the additional cost per barrel, Mr. Earnest argued that Mr. Erickson failed to include the one million barrels per day of light crude produced in Western Canada, and that, when the correct denominator is applied to the formula, the actual increased cost is \$0.78 per barrel, not \$6 per barrel. 7 Tr 667.

Next, Mr. Earnest averred that Mr. Erickson's calculation of the impact on crude oil production volume of the higher U.S. and Canadian crude oil supply cost is also in error. He stated that volume would be decreased (as a result of constraints caused by the loss of Line 5) by 80 b/d, not 286,000 b/d; he contended that this is a negligible change. Mr. Earnest stated that by correcting this error, Mr. Erickson's estimate of the impact to the global supply costs is

unsupported. He opined that in addition to the calculation error, Mr. Erickson's methodology has an arbitrary element that renders his conclusions invalid. 7 Tr 671.

Finally, Mr. Earnest asserted that Mr. Erickson's calculation of the increase in the global marginal crude oil supply price is in error because "the elasticity of supply (E_s) value and the data set used to calculate the elasticity of supply value are inappropriate." 7 Tr 672. He objected to the \$53/bbl value selected by Mr. Erickson based on the CER draft report and noted that Mr. Erickson was aware that the EIA forecasted \$73/bbl for 2030, which is the same time period. Mr. Earnest opined that the EIA forecast is more appropriate.

C. Surrebuttal Testimony

Mr. Dennis provided surrebuttal testimony in response to Mr. Kuprewicz's claims regarding the risk of explosion in the tunnel. In Mr. Dennis's opinion:

There is no credible scenario that would result in an explosion within the tunnel. To have an explosion three events must occur: (1) there must be a release; (2) the release must be sufficient to create an explosive atmosphere; and (3) there must be an ignition source. While it is theoretically possible for these events to occur, the tunnel and replacement pipe segment have been designed and will be constructed, operated, inspected, and maintained to prevent the occurrence of these events, thereby effectively eliminating the possibility of any explosion.

8 Tr 799.

Elaborating on his claim that there is virtually no risk of explosion in the tunnel, Mr. Dennis averred that the risk of release of products from the replacement segment is less than 0.000001, or one in one million. 8 Tr 800. He explained that the risk of release is less than one in one million because the design and construction of the replacement pipe segment will exceed federal standards. In addition, he asserted that the pipeline will be subjected to multiple periodic inspections to allow for early identification and repair of pipe degradation. Moreover, Mr. Dennis stated that the location of the replacement pipe segment within a tunnel eliminates the risk of

excavation or third-party damage to the pipeline. Therefore, in his opinion, there is effectively no risk of release from the replacement pipe segment. Mr. Dennis contended that in the unlikely scenario that there is a release of products from the replacement pipe segment in the tunnel, the leak detection systems will detect the release and initiate shutdown procedures. *See*, 8 Tr 802-803.

Next, Mr. Dennis stated that all of the equipment in the tunnel will be Class 1, Division 2, which “are designed to not arc or spark and will not serve as an ignition source. Thus, even in the extremely unlikely scenario of a release[,] which then went undetected long enough to create an explosive atmosphere, there is still not an ignition source within the tunnel.” 8 Tr 803. He also asserted that there will be procedures to prevent personnel from introducing an ignition source in the tunnel.

Finally, Mr. Dennis disputed Mr. Kuprewicz’s claim that the replacement pipe segment will allow Enbridge to increase the shipping capacity of Line 5. Mr. Dennis stated that “the design decision to have the replacement pipe segment be 0.625 inches thick and be able to withstand 1440 psig is based on safety[;] it has nothing to do with increasing the overall capacity of Line 5. As a practical matter, one does not increase the capacity of an entire 645-mile pipeline by replacing 4-miles of it with thicker or larger diameter pipe.” 8 Tr 804-805.

D. Sur-surrebuttal Testimony

Mr. Kuprewicz disputed Mr. Dennis’s claim that the replacement segment will be “manufactured specifically for this project in a manner that exceeds API 5L Pipeline Specification Level,” and, therefore, the risk of release from the pipeline is less than 0.000001. 10 Tr 1340 (quoting 8 Tr 800). Mr. Kuprewicz asserted that a pipeline that meets or exceeds this standard is still vulnerable to failure at its girth welds and associated heat affected zones. In support, he cited the Joint Industry Report, set forth in Exhibit BMC-43, and he noted that the report “identifies

some failures of X70 girth welds and their associated heat affected zones and found that the X70 pipeline has demonstrable issues of failure. The admission of this Joint Industry Report provides a credible warning about the specific grade of pipe to be used in the Tunnel Project that the Commission should consider.” 10 Tr 1340.

E. Sur-sur-surrebuttal Testimony

In response to Mr. Kuprewicz’s claim that there are failure issues associated with X70 pipe, Mr. Cooper asserted that he has no concerns about the specific grade of pipe proposed for the Replacement Project. He explained that:

[t]he Joint Industry Report raises a concern that when longitudinal strain is placed on a pipeline where the girth welds, including adjacent heat-affected zones in the pipes, under-match the original longitudinal tensile properties of the pipes (i.e., the girth weld is weaker than the pipe), the strain will be focused in the girth weld and result in high local strain and an increased risk of failure at the under-matched girth weld. From a design perspective, longitudinal strains on the replacement pipe segment are expected to be small (well within elastic limits) relative to the strain capacity of a pipeline with overmatched girth welds.

There are two main reasons why the issues raised in [the] Joint Industry Report should not be a concern for the replacement pipe segment within the tunnel. First, the replacement pipe segment in the tunnel will not experience the same longitudinal strain as a pipeline buried in the ground. A buried pipeline is subject to strain created by ground movement and the interaction of thermal or pressure-related expansion and contraction of the pipe with frictional forces between the pipe and surrounding soil. No such environment exists for the replacement pipe segment within the tunnel. The replacement pipe segment in the tunnel is not buried and is not subject to ground movement or frictional forces and the temperature in the tunnel will be relatively stable. When the replacement pipe segment does expand or contract due to temperature or pressure changes, it will be on supports with rollers which will allow the replacement pipe segment to expand or contract freely toward or from the expansion loops located outside the tunnel. This is an entirely different environment and does not impose the type of longitudinal stress and strain experienced by buried pipe.

Second, as set forth in the Joint Industry Report (BMC-43), Enbridge states that it has already implemented the Joint Industry Report’s recommendations intended to eliminate under-matched girth welds and minimize weld heat-affected zone softening. (Appendix B.)

Since the replacement pipe segment will not be subject to the longitudinal strain of a buried pipeline and Enbridge states it has adopted the recommendations in the Joint Industry Report (BMC-43) with respect to under-matched girth welds and heat-affected zones, the Commission should not be concerned by the proposed use of Grade X70 pipe in the Tunnel Project.

12 Tr 1886-1887.

F. Initial Briefs

1. Enbridge Energy, Limited Partnership

Enbridge asserted that it has satisfied the Act 16 criteria required for Commission approval of the Replacement Project, namely: (1) there is a public need for the Replacement Project, (2) the replacement pipe segment is designed and routed in a reasonable manner, and (3) the construction of the replacement pipe segment will meet or exceed safety and engineering standards. Enbridge's initial brief, p. 1. Enbridge stated that it has also satisfied its MEPA obligations because the Replacement Project is not likely to pollute, impair, or destroy natural resources in Michigan. The company contended that even if the Replacement Project was likely to cause pollution, there are no feasible and prudent alternatives to eliminate the perceived environmental threat caused by the continued operation of the dual pipelines. *See*, MCL 324.1705.

Enbridge stated that in the April 21 order, p. 63, the Commission found that the three Act 16 criterion must be applied to the Replacement Project and not to Line 5 in its entirety. For the first prong of the Act 16 determination—demonstrated public need—Enbridge argued that by enacting Act 359 and executing the First, Second, and Third Agreements, the Michigan Legislature and the State of Michigan, respectively, determined that relocating the Line 5 Straits crossing into a State-owned utility tunnel would serve a public need. Specifically, Enbridge noted that according to the First Agreement, “the continued operation of Line 5 through the State of Michigan serves important public needs by providing substantial volumes of propane to meet the needs of Michigan

citizens, supporting businesses in Michigan, and transporting essential products, including Michigan-produced oil to refineries and manufacturers.” Enbridge’s initial brief, pp. 2-3 (quoting Exhibit A-8, p. 1); *see also*, Enbridge’s initial brief, pp. 11-13. In addition, Enbridge contended that:

[t]he NGL and crude volumes transported by Line 5 to [fuel] markets cannot be transported by other pipelines given the lack of available capacity on other pipelines. The [fuel] markets currently served by Line 5 will continue to require the volumes and types of light crude oil, light synthetic crude and NGLs transported by Line 5 long after the location of the replacement pipe segment within the utility tunnel.

Id., p. 4 (citing 7 Tr 757) (internal citations omitted). Enbridge asserted that according to the Second Agreement, the Replacement Project will meet the public need for NGLs and light crude oils in Michigan and **“can essentially eliminate the risk of adverse impacts that may result from a potential release from Line 5 at the Straits.”** Enbridge’s initial brief, p. 5 (citing Second Agreement, p. 4) (emphasis in original). Accordingly, Enbridge averred that the Michigan Legislature and the State of Michigan have determined that there is a public need for the Replacement Project.

Regarding the second prong of the Act 16 analysis, Enbridge contended that the replacement pipe segment is designed and routed in a reasonable manner. Beginning with design, Enbridge averred that the replacement pipe segment will meet or exceed all applicable PHMSA standards. Enbridge explained that the segment will be manufactured specifically for this project and will exceed API 5L Specification Level 2. Enbridge’s initial brief, p. 17 (citing Exhibit A-14, pp. 133-178). In addition, Enbridge noted that the pipe wall thickness will be greater than what is required by applicable federal regulations. Enbridge also stated that the pipe segment is designed for a maximum operating pressure (MOP) of 1440 psig, whereas normal operating pressure is 480 psig. Enbridge’s initial brief, p. 18 (citing 8 Tr 801). Enbridge posited that the increased MOP,

combined with installation of the automatic shutoff valves at both ends of the segment, “effectively eliminates the risk of a breach of the replacement pipe segment due to operations.” Enbridge’s initial brief, p. 18. Moreover, Enbridge noted that all pipeline appurtenances are located outside the tunnel and the segment will be subject to visual inspection within the tunnel. Enbridge asserted that because of these enhanced design factors, the risk of a release from the replacement pipe segment is one in a million (0.000001). Enbridge’s initial brief, p. 19 (citing 8 Tr 802, 877, and 880-881). Enbridge contended that the Staff, MSCA, and PHMSA had no concerns with the safety of the replacement pipe segment. Enbridge’s initial brief, p. 20 (citing 9 Tr 1240-1242, 12 Tr 1752-1755, and Exhibit S-26, p. 1).

Enbridge disputed Mr. Kuprewicz’s claim that the grade X70 pipe, proposed for use in the Replacement Project, has had issues of failure. Enbridge’s initial brief, p. 20 (citing 10 Tr 1340 and Exhibit BMC-43). Enbridge noted that Mr. Cooper, testifying on behalf of MSCA, points out that the replacement pipe segment will not be buried in the ground and thus will not experience the same longitudinal strains identified by Mr. Kuprewicz. Enbridge’s initial brief, p. 21 (citing 12 Tr 1886-1887). Additionally, Enbridge stated that it has already adopted the recommendations in the Joint Industry Report, set forth in Exhibit BMC-43, that are intended to address this pressure-related concern.

Next, Enbridge asserted that the replacement pipe segment is routed in a reasonable manner, noting that the route was chosen by the DNR and is the shortest distance between the U.P. and the Lower Peninsula of Michigan. Enbridge contended that by placing the replacement pipe segment in a tunnel, the possibility of an anchor strike is eliminated and, in the unlikely case of a release, the tunnel will act as a secondary containment feature. Enbridge reiterated that the likelihood of a release was described in the Alternatives Analysis as “negligible, and un-quantifiably low.”

Enbridge's initial brief, p. 22 (quoting Exhibit ELP-24, pp. 3-60). The company noted that this low risk of release is supported by the testimony of Dr. Mooney and Mr. Adams. Enbridge's initial brief, p. 22 (citing 9 Tr 1204 and 12 Tr 1811-1816).

Enbridge objected to Mr. Kuprewicz's testimony that there is a possibility of an explosion in the tunnel. The company argued that Mr. Kuprewicz "offers no quantification or likelihood of the risk of an explosion that might result in any hypothetical release impacting the Great Lakes." Enbridge's initial brief, p. 24. In addition, Enbridge asserted that Mr. Kuprewicz failed to indicate how the risk of a release from the tunnel compares to the risk of a release from the dual pipelines. In any event, Enbridge asserted that there is no credible scenario that would lead to an explosion in the tunnel and reiterated the explanation provided by Mr. Dennis. *See*, Enbridge's initial brief, p. 24 (quoting 8 Tr 799) (internal citations omitted). Enbridge also argued that the design, construction, inspection, and maintenance of the replacement pipe segment, along with the leak detection system, make an explosion extremely unlikely. Furthermore, the company explained that there are various procedures for manual and automatic shutdown of the pipeline based on the leak detection system, and Enbridge contended that there will be no ignition sources in the tunnel.

Enbridge disputed Mr. Kuprewicz's testimony that Class 1, Division 1 equipment and instrumentation should be required in the tunnel. Enbridge stated that, "[i]n making these assertions, Mr. Kuprewicz did not consult with the fire protection code, the state or national electric code, or an electric engineer. While Mr. Kuprewicz claims to be an expert with respect to pipeline safety, he admits he has never been involved in the design or construction of a utility tunnel." Enbridge's initial brief, p. 25, n. 19 (internal citations omitted). The company explained that there is nothing in the tunnel that would provide an ignition source. In addition, Enbridge contended that inspection and maintenance personnel will not create an ignition source in the

tunnel because personnel will be barred from entering the tunnel unless they undergo a permitting process that includes, at a minimum, issuance of a safe work permit, a plan for appropriate personal protective equipment and air monitoring, and the presence of a rescue team on standby, as well as several other safety measures.

For the third prong of the Act 16 analysis, Enbridge asserted that the replacement pipe segment will meet or exceed safety and engineering standards. The company noted that Mr. Cooper found Enbridge's installation plans to be technically sound and in compliance with applicable federal regulations. In addition, Enbridge stated that according to Dr. Mooney, if the tunnel is built to the Project Specifications, it will be safely constructed and meet industry standards. Furthermore, the company noted that Mr. Adams concluded that the tunnel design is state of the art for secondary containment. Enbridge's initial brief, pp. 28-29.

Enbridge argued that the parties who are opposing the Replacement Project have a different policy objective, namely, the shutdown of Line 5, which is beyond the scope of this proceeding and is contrary to the goal of providing greater protection for the Great Lakes. Enbridge contended that "[t]he Michigan Legislature through its enactment of Act 359 conclusively determined the need for the state-owned utility tunnel beneath the Straits" Enbridge's initial brief, p. 14. The company asserted that this proceeding cannot be used to second guess the determination of the Michigan Legislature and is limited to the question of whether the replacement pipe segment should be sited within the proposed tunnel.

Next, Enbridge averred that it performed the required MEPA analysis for the Replacement Project. The company contended that Exhibit A-12, which contains the EIR, and Exhibit A-12.1, which provides updates to the EIR, demonstrate that locating the replacement pipe segment within the proposed utility tunnel is not likely to have the effect of polluting, impairing, or destroying the

air, water, or other natural resources, or the public trust in these resources. Enbridge explained that there will be no permanent impact to groundwater, surface water, or lakes. Enbridge's initial brief, p. 31 (citing Exhibit A-12, pp. 11-12, 15). The company added that there are no expected impacts to geology, soils, terrestrial resources, or drinking water resources. Moreover, the company argued that the emissions associated with the Replacement Project are not likely to pollute, impair, or destroy natural resources "because Line 5's capacity will not be increased due to the project." Enbridge's initial brief, p. 33. As a result, the company asserted that the first step in the MEPA analysis is satisfied, and no further MEPA inquiry is required. Enbridge also argued that the result is the same even if the Commission considers construction of both the replacement pipe segment and the utility tunnel (rather than the replacement pipe segment alone). Enbridge's initial brief, p. 32 (citing Exhibit A-18, pp. 2, 6).

Enbridge stated that it expects that the Replacement Project will minorly impact wetlands; however, pursuant to the standard set forth in MEPA, the impact will not pollute, impair, or destroy the natural resource because the impact will be mitigated. The company explained that:

[w]hile the Water Resource Permit allows Enbridge to place clean fill in up to 0.13 acre of wetlands, the planned mitigation will require Enbridge to: (a) place 1.3 (which is ten times the wetland impact) acres of Great Lakes coastal wetlands into a conservation easement, and (b) either construct a new 0.26 (which is two times the wetland impact) acres of coastal forested wetland or purchase 0.26 (which is two times the wetland impact) wetland mitigation bank credits. (Exhibit A-17, pp. 7-8.) Even if one considers the impacts caused by the construction of the tunnel, which are unnecessary for the Commission's MEPA review, the standard imposed by MEPA is satisfied.

Enbridge's initial brief, pp. 32-33 (citing to *Friends of Crystal River v Kuras Properties*, 218 Mich App 457, 470-471; 554 NW2d 328 (1996) (finding no impairment to natural resources where wetlands are replaced by "almost twice as many acres of mitigation wetlands"))).

Enbridge stated that if the Commission continues to step two of the MEPA analysis, there are no feasible and prudent alternatives to the Replacement Project consistent with the public health, safety, and welfare. The company argued that in the April 21 order, “the Commission determined that the public need for Line 5 has been established and that need is not subject to dispute in this proceeding.” Enbridge’s initial brief, p. 33 (citing April 21 order, p. 63). In addition, the company reiterated that through the enactment of Act 359 and the execution of various agreements, the Replacement Project was selected as the most feasible and prudent option. Enbridge asserted that, “[i]f the Commission denies Enbridge’s Application, then the Dual Pipelines will continue to operate in their current location, because there is a need for Line 5 and there is no other feasible or prudent alternative to its current Straits crossing.” Enbridge’s initial brief, p. 34.

In response to Dr. Stanton’s claim that a voluntary shutdown of Line 5 is a feasible and prudent alternative to the Replacement Project, Enbridge contended that this option is not before the Commission in the company’s application. In any event, Enbridge noted that “Line 5 provides critical energy transportation services for the State and the surrounding region.” Enbridge’s initial brief, p. 34 (citing 7 Tr 755-756). Enbridge maintained that the shutdown of Line 5 would not be consistent with the public health, safety, and welfare.

Enbridge noted that in the April 21 order, “the Commission stated it wished to consider the GHG impacts resulting from the potential resumption of service through the replacement pipe segment compared to other alternatives in case there was a shutdown of the Dual Pipelines.” Enbridge’s initial brief, p. 35 (citing April 21 order, p. 67). The company contended that any temporary shutdown of Line 5 is unlikely. Enbridge pointed out that the legal landscape of this case has changed significantly since the issuance of the April 21 order, namely, the State of Michigan’s civil action to enforce the Notice has been dismissed and a federal court has

determined that the issues should be litigated in federal court, and the Government of Canada has invoked formal treaty dispute resolution provisions. Therefore, Enbridge requested that the Commission “take the changed circumstances into account in weighing the GHG impact evidence and acknowledge that a closure of Line 5 will not occur.” Enbridge’s initial brief, p. 36.

In any case, according to Enbridge, other fuel transportation methods produce more GHGs than Line 5. The company noted that Mr. Bennett testified that shipping the same amount of crude oil by rail would result in a four-to-nine-fold increase in GHG emissions compared to shipment on Line 5. *Id.* (citing 7 Tr 763-764). Enbridge also asserted that there is no other pipeline transportation available to ship the volume of product currently shipped on Line 5. Enbridge’s initial brief, p. 36 (citing 7 Tr 757; 12 Tr 1775, 1790, 1801).

Enbridge disagreed that a closure of Line 5 will ultimately reduce demand for the fuel products transported on the pipeline; rather, the company asserted that demand will remain static and prices will increase modestly. Enbridge’s initial brief, pp. 38-39 (citing 7 Tr 660, 666-667; 12 Tr 1779). Enbridge explained that even if Line 5 were closed and there was reduced production in Western Canada or the Bakken region, those fuel products could be easily replaced by other global producers such as Russia and Saudi Arabia.

2. The Commission Staff

In its initial brief, the Staff stated that “[t]he possibility that the Dual Pipelines could continue to operate if Enbridge’s application is denied requires a candid assessment of the risk of an oil spill from the Dual Pipelines and a plan for an alternative that minimizes the risk of a spill as much as possible. This is the approach that Staff took when evaluating Enbridge’s application.” Staff’s initial brief, p. 2. The Staff recognized that, currently, an anchor strike to the dual pipelines poses a risk and requires the implementation of numerous measures to mitigate that risk.

The Staff stated that it analyzed the comparative risk of operating the dual pipelines with the Replacement Project, evaluated the Act 16 criterion, and considered the environmental impact of the Replacement Project. The Staff concluded that the Replacement Project meets the public need, is in the public interest, and “is the best option out of the alternatives.” Staff’s initial brief, p. 4 (quoting 12 Tr 1736). Accordingly, the Staff recommended that the Commission approve Enbridge’s Act 16 application subject to several conditions.

To begin, the Staff stated that pursuant to ED 2019-17, State of Michigan agencies must “implement a process for engaging in consultation with Michigan’s 12 federally recognized Tribes,” and ED 2019-17 “requires that the consultation process be used before a department or agency makes any decision that may affect one or more of the Tribes.” Staff’s initial brief, p. 36. The Staff noted that direct communication between the Tribes and the Commissioners is impermissible under MCL 24.282 in this contested case. Thus, to implement the consultation process, the Commission promulgated the Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission (Involvement Guide), which appears in the record as Exhibit S-30, pp. 5-10. The Staff contended that consistent with the Involvement Guide, it made extensive efforts to seek input from the Tribes and logged numerous meetings and communications as set forth in Exhibits S-2 and S-3. The Staff stated that the purpose of the consultation process in the Involvement Guide was to “facilitate meaningful and mutually beneficial exchanges to inform Staff’s direct testimony.” Staff’s initial brief, p. 38. The Staff observed that the Involvement Guide describes three potential methods for involvement in cases: formal intervention, consultation with the Staff, and public comment. *Id.*, p. 40 (citing Exhibit S-30, pp. 8-10). The Staff noted that the Tribes chose differing routes for involvement, which lead to all three methods being used.

The Staff disagreed with Bay Mills' assertion that in written feedback, the Staff failed to explain how the Tribes' input was considered. The Staff noted that it issued a request for information and a memo describing how the Staff considered the concerns raised by the Tribes. *See*, Exhibits BMC-46 and S-25. The Staff contended that both intervening and non-intervening Tribes were given many opportunities to provide input and explain their concerns. The Staff noted that ED 2019-17 allows for disagreement between tribes and agencies and does not bar the agency from acting despite disagreement. Staff's initial brief, p. 43 (citing ED 2019-17, ¶ 6).

The Staff also disagreed with Bay Mills' assertion that Mr. Yee's testimony and memo are unrepresentative of the Tribes' views and concerns. The Staff stated that:

[b]eing a party in the case, Bay Mills had the opportunity to present its own concerns about the project without having to rely on an expert retained by Staff. Correspondingly, Staff did not set out to present all of Bay Mills' concerns to the Commission with the assumption that Bay Mills was much better suited to make these arguments on its own. . . . Mr. Yee's recommendations were not averse to the Tribal Government's concerns or even oppositional. Mr. Yee recommended that the Commission "[c]onsider coordination with SHPO on recommended cultural resources" and that it "also monitor the conclusions of a Section 106 review process . . . for these upland areas and reassess as needed." (Exhibit S-25, pp 2–4.)

Staff's initial brief, pp. 43-44. The Staff contended that, although the goals of each party in the consultation and litigation process are not always in harmony, in this case, the objectives of ED 2019-17 were satisfied, if not surpassed. However, if Bay Mills feels that the final requirement of ED 2019-17 (written follow-up) was not satisfied, the Staff asserted that the Commission's final order "may ultimately do more to satisfy this requirement." Staff's initial brief, p. 47.

For the first prong of the Act 16 analysis, the Staff averred that there is a clear public need to replace the dual pipelines. In the Staff's opinion, the Replacement Project will significantly reduce the risk of a release of NGLs and light crude oil into the Straits from Line 5. The Staff

stated that it “is not taking a position as to whether continued operation of the Dual Pipelines presents an acceptable or unacceptable level of risk to the State. Rather, Staff is comparing the risk of continued operation of the Dual Pipelines to that of the replacement project proposed.” Staff’s initial brief, p. 112. The Staff observed that there is no certainty regarding how long the dual pipelines will operate, and this uncertainty leads to “perpetual and unnecessary risk for an undetermined length of time into the future.” *Id.*

Regarding the second prong of the Act 16 analysis, the Staff stated that “[t]he route and location of the replacement pipeline is heavily constrained by the existing onshore Line 5 segments, the tunnel easement, geotechnical considerations, and the planned tunnel alignment.” *Id.*, p. 49. Because of these factors, the Staff contended that the proposed location for the Replacement Project is established and not subject to serious debate. In the Staff’s opinion:

the only routing determinations to be made in this case concern the “tie-in” segments that connect the replacement pipeline to the existing Line 5 segments on the north and south shores of the Straits. With this in mind, the goal should be to use existing facilities, previously disturbed land, and rights of way to the extent practicable to develop a reasonable route for these segments.

Staff’s initial brief, p. 50. The Staff asserted that Enbridge has shown that its proposed tie-in segments are reasonable and meet the required criteria, referencing Exhibit A-12.1 and 7 Tr 556-563.

Next, the Staff noted that the pipeline construction work-space is contained within areas that are already disturbed by tunnel construction and, therefore, Enbridge needs no additional land rights. The Staff stated that:

Bay Mills appears to believe that any route crossing through or under the Straits of Mackinac would be unreasonable. Thus, Staff views Bay Mills’ objection to the route as opposition to the tunnel and replacement project as a whole rather than an objection to the specific route proposed. Bay Mills did not provide any route variations or mitigative measures for the Commission to consider.

Staff's initial brief, pp. 51-52. The Staff asserted that the proposed crossing location is appropriate and recommended that the Commission approve the route. *Id.*, p. 52 (citing 12 Tr 1869).

The Staff also addressed the design component and safety standard under the third prong of the Act 16 analysis. The Staff asserted that the Replacement Project is designed to meet or exceed relevant safety standards, and going forward, Enbridge should incorporate the Staff's recommendations for additional safety measures. The Staff explained that its safety recommendations were made in consultation with PHMSA, which retains jurisdiction over the safety and inspection of interstate pipeline facilities. Staff's initial brief, p. 54 (citing 12 Tr 1751-1754).

The Staff objected to Bay Mills' claim that the Staff simply sanctioned the Replacement Project because PHMSA stated that there are "no noncompliance issues identified with the proposed design, construction and testing of the replacement segment." Staff's initial brief, p. 55 (citing Exhibit S-26, p. 1). The Staff responded that it:

has independently recommended that the Commission require the Company to exceed minimum pipeline safety requirements. The design is not likely to be finalized for the Commission's review and approval, and Staff's recommendations enhance the safety of the project with the understanding that ongoing and future work will ensure that the final designs will meet and exceed the requirements of the regulations.

Staff's initial brief, p. 55.

Additionally, the Staff recommended improvements to Enbridge's proposed welding procedures. The Staff stated that:

for all mainline girth welds, the Company "should be required to develop low-hydrogen welding procedures and qualify them per the requirements found in 49 CFR 195.214." (12 TR 1757.) Witness Chislea further recommended that "the procedures should include pre-heat requirements prior to starting welding and inter-pass temperature requirements" and that "the non-destructive testing of the mainline girth welds should include automatic phased array ultrasonic testing

methods.” (12 TR 1758.) If the above recommendations are met, then no further post heat-treatment should be required. (*Id.*)

Staff’s initial brief, pp. 56-57; *see also*, 9 Tr 1247. The Staff contended that if these recommendations are adopted, they will address Bay Mills’ concerns regarding girth welds and welding procedures. The Staff acknowledged that these specifications exceed the minimum requirements under federal regulations and argued that they will ensure quality welds in both the deposited material and in the heat-affected zones.

In response to Bay Mills’ concern regarding X70 girth weld failures, the Staff asserted that its recommendations will remedy this potential risk and that no further measures are required. The Staff stated that it:

still firmly recommends that the Company address Staff’s pre-filed recommendation that low-hydrogen welding procedures are in place for all mainline girth welds; that welding procedures require both preheat and inter-pass temperature requirements; and that the mainline girth welds are nondestructively tested using automatic phased array ultrasonic testing methods.

Staff’s initial brief, p. 59. The Staff stated that it expects to continue to coordinate with PHMSA and will make further recommendations where needed.

The Staff argued that the design of the Replacement Project will reduce the risk of a spill of hazardous liquids into the Straits because the tunnel will provide effective secondary containment.

The Staff explained that:

Staff witness Mr. Adams testified that several factors would limit a potential release from the tunnel; in “order of their performance of what prevents materials from escaping the tunnel, [these factors] are external hydrostatic pressures, gasketed segmental lining, annular grout, rock cover, and soil cover.” (12 TR 1816.) Thus, the likelihood of a release must overcome the external hydrostatic pressures and gasketed segmental lining as the best preventive factors in the tunnel design. Mr. Adams reports that this “combination of factors . . . results in a very low probability of a spill escaping from the tunnel.” (12 TR 1817.) As such, Staff does not have a further recommendation to the tunnel design to improve tunnel integrity or the secondary containment characteristics.

Staff's initial brief, pp. 61-62.

The Staff stated that although Bay Mills claims that there is a risk of explosion in the tunnel, Bay Mills does not quantify the risk of an explosion that could damage the tunnel. In any event, the Staff contended that the risk of explosion has been mitigated to an acceptably low level and that the Replacement Project presents a lower likelihood of a release reaching the Straits compared to the dual pipelines. And contrary to Bay Mills' argument that the Replacement Project will allow Enbridge to increase the volume on Line 5, the Staff argued that MSCA provided evidence that "the project will have 'very little influence on the overall transportation capacity of Line 5.'" *Id.*, p. 63 (quoting 9 Tr 1245). In addition, the Staff asserted that the Replacement Project will not increase the capacity of Line 5 "in any substantive way that would cause safety concerns or change Staff's evaluation of the risk of release or the risk of a serious explosion." Staff's initial brief, p. 63.

The Staff also agreed with Enbridge that the design of the replacement pipe segment, the pipeline material, and the tunnel reduce the likelihood of an explosion, as do the leak detection systems, which consist of both the CPM and the external leak detection system (which relies on gas monitors and liquid hydrocarbon detection). The Staff noted that 27 detectors will be located throughout the tunnel and a ventilation system will be installed. The Staff asserted that the leak detectors will be appropriately placed at low points in the tunnel to detect heavier-than-air vapors. The Staff concluded that:

[b]ased on all the above, it is extraordinarily unlikely that there will be an explosion in the tunnel resulting in product leaking into the Straits. Further, at this time, there are no additional mitigative measures for pipe material, gas and leak detection, or electrical equipment requirements that would further substantively reduce this likelihood. Staff fully intends to continue evaluating the risk of such a scenario in future discussions with Enbridge, the [MSCA], and PHMSA as it relates to the

construction and design of the project, and Staff will make further recommendations in those discussions as needed.

Staff's initial brief, p. 69.

Turning to the 10 potential environmental impairments identified by Staff witness Mooney in her testimony at 12 Tr 1849-1850, the Staff asserted that these potential impairments may be mitigated or minimized. As an initial matter, the Staff reiterated that its MEPA review is intended to complement, not replace, the environmental reviews performed by other agencies. In addition, the Staff noted that some potential environmental impairments and several concerns identified by intervening parties will be addressed through the permitting process performed by other agencies. *See*, Staff's initial brief, pp. 71-74. The Staff asserted that although there may be potential environmental impairments, no feasible and prudent alternatives to the Replacement Project have been identified that would more effectively promote the public health, safety, and welfare. *See*, Exhibits A-8 and A-9.

Regarding environmental impairments that may not be addressed by other agencies' permitting processes, the Staff stated that these "[o]ther potential impairments should be addressed when the Company finalizes its mitigation plans, which should be specific enough to minimize the environmental impacts." Staff's initial brief, p. 75. Specifically, the Staff recommended that Enbridge include additional details in its final environmental mitigation plan showing an evaluation of the impact of construction noise, increased dust, and increased light. Regarding impacts to surface water associated with construction equipment traffic and the five potential impacts to groundwater from construction identified by Ms. Mooney, the Staff pointed to Enbridge's evidence describing mitigation measures and the minor nature of the potential impacts. The Staff also noted Enbridge's spill mitigation plan for addressing the impact of hazardous materials on surface soils, vegetation, and surface water. *Id.*, pp. 78-82. The Staff stated that

“with the understanding that the Company will finalize its impairment mitigation plans to satisfy all local, state, and federal permitting requirements and to address the potential environmental impairments from construction discussed above,” the Staff recommended approval of the Replacement Project. *Id.*, pp. 85-86.

In the Staff’s opinion, the GHG emissions associated with construction of the tunnel are typical for a project of this size and scope. The Staff asserted that using the Greenhouse Gas Protocol standards, it is appropriate to consider Scope 1 and Scope 2 emissions from construction. *Id.*, p. 82 (citing 9 Tr 1042 and 12 Tr 1872, 1877). The Staff explained that “[g]enerally, Scope 1 activities for this project included construction of the tunnel, fuel used by trucks and vehicles, and land clearing activities, while Scope 2 activities included electricity used by the tunnel boring machine and other electric tools and equipment. (12 TR 1877.)” Staff’s initial brief, p. 83. The Staff contended that Mr. Erickson’s Scope 2 emissions estimates should be given little weight, if any, because he used emission factors for non-baseload electricity, which is contrary to the guidance provided by the EPA, and he included emissions associated with purchased concrete and steel. The Staff asserted that the Commission should rely on the estimates produced by Mr. Ponebshek.

Although construction of the Replacement Project is expected to result in temporary additional GHG emissions, the Staff contended that pursuant to MEPA, there are no alternatives that outweigh the benefits of the Replacement Project. The Staff explained that:

the only feasible alternative discussed by other parties in this case (the Open Cut with Secondary Containment approach) would likely cause more harm to the environment. (12 TR 1870.) All construction projects come with some associated impairments, including GHG emissions, and this project is no different. But the emissions from Enbridge’s proposed utility tunnel, while real, will cause far less environmental harm than the harm the project is intended to mitigate (i.e., a potential spill from the Dual Pipelines). In other words, the project’s risk-reducing benefits outweigh the impairments from construction.

Staff's initial brief, p. 86. Additionally, the Staff argued that the Replacement Project would reduce or eliminate some of the GHG emissions associated with the current operation of the dual pipelines, such as patrolling the Straits to monitor vessel traffic and periodic underwater visual inspection of the dual pipelines' exterior and spans. The Staff stated that, "[a]lthough the GHG emissions associated with these activities were not calculated, it's reasonable to conclude that GHG emissions would be reduced if these activities ceased. This reduction would help offset the increased GHG emissions caused by construction and operation of the tunnel." *Id.*

Next, the Staff objected to the no-action alternative described by Dr. Stanton, noting that she assumes that the dual pipelines will be shut down, which has not occurred. The Staff argued that the dual pipelines are not likely to be shut down, even if the Replacement Project is not approved, because the State of Michigan's lawsuit to enforce the Notice was voluntarily dismissed, Enbridge's federal lawsuit is still pending in federal court, and Canada has invoked the dispute resolution process under the 1977 Transit Treaty between the U.S. and Canada. *See*, Staff's initial brief, p. 89.

The Staff also argued that a true no-action scenario—continued operation of the dual pipelines—is not a prudent alternative to the Replacement Project. The Staff asserted that the status quo leaves the dual pipelines in their current position, which is vulnerable to anchor strikes, as was illustrated by the damage that occurred in April 2018 and June 2020. Staff's initial brief, p. 91 (citing 12 Tr 1724-1725). The Staff noted that any rupture to the dual pipelines results in a direct release of NGLs and light crude oils into the waters of the Straits.

The Staff disagreed with Mr. Erickson's assertion that a one cent per gallon increase to the price of gasoline would result in less petroleum being consumed worldwide and less overall GHG emissions. *See*, Staff's initial brief, p. 99 (citing 12 Tr 1801, 1805; 7 Tr 661, 667, 672).

Accordingly, the Staff asserted that Mr. Erickson failed to convincingly demonstrate that the shutdown of Line 5 would result in “product switching or a meaningful reduction in GHG emissions due to the cost and impracticability of such changes.” Staff’s initial brief, p. 102. Moreover, the Staff contended that alternative transportation methods, such as rail and truck, will produce more GHG emissions than the use of Line 5 for the same volume of product. *Id.*, pp. 103-104 (citing 12 Tr 1790-1791).

The Staff further argued that at this time, transitioning Michigan customers away from propane for home heating is not a feasible plan. *See*, Staff’s initial brief, p. 105 (citing 12 Tr 1781-1782). In addition, the Staff asserted that electrification and heat pumps currently are not economically feasible alternatives to propane for most Michigan customers who depend on propane for home heating. *See*, Staff’s initial brief, pp. 106-108 (citing 7 Tr 971; 12 Tr 1782-1783, 1791). Furthermore, the Staff observed that gas-powered vehicles and the need for motor fuels “will continue to play a large role in the transportation landscape for some time.” Staff’s initial brief, p. 109.

Regarding the issue of the Replacement Project’s impact on cultural resources, the Staff noted that SHPO has acknowledged that the Straits are an area of cultural and historical importance. *Id.*, pp. 113-115 (citing 12 Tr 1668-1669); *see also*, Exhibit S-25. The Staff urged the Commission to continue to monitor developments of the SHPO process and the USACE Clean Water Act Section 404 Nationwide Permit program process, and to consider any potential impacts to cultural and archeological resources within the context of these reviews. *See*, Staff’s initial brief, pp. 116-117.

Finally, the Staff objected to Bay Mills’ claims that the Replacement Project will accelerate climate change, harm Tribal resources, and damage the local environment because, in the Staff’s

opinion, Bay Mills provided generalized concerns and failed to quantify the alleged harm. *Id.*, pp. 122-125. The Staff stated that “the concerns regarding the tribal resources discussed above, though culturally and environmentally significant, should not serve as a basis for denial of the application.” Staff’s initial brief, pp. 123-124.

In conclusion, the Staff recommended that the Commission approve Enbridge’s application subject to the Staff’s conditions set forth above. Staff’s initial brief, pp. 125-126.

3. The Michigan Propane Gas Association and the National Propane Gas Association

Similar to Enbridge, the Associations argued that, pursuant to the Commission’s determination in the April 21 order, the question of public need under the first prong of the Act 16 analysis applies solely to the Replacement Project and not to Line 5 as a whole. *See*, Associations’ initial brief, p. 9; *see also*, April 21 order, p. 63. And, like Enbridge, the Associations asserted that the Michigan Legislature and the State of Michigan conclusively determined that there is a public need for the Replacement Project by passing Act 359 and executing the First, Second, and Third Agreements, respectively. Associations’ initial brief, p. 10 (citing 7 Tr 565; Exhibit A-8, p. 1; Exhibit A-1, p. 4; and Exhibit A-10, p. 1). In addition, the Associations averred that the DNR recognized the public need for the Replacement Project by granting a new easement for the tunnel to MSCA. Furthermore, the Associations noted that in the NREPA Parts 303 and 325 permits, “EGLE ‘considered the concerns raised by comments that this project is in the public interest, and . . . EGLE has determined that . . . the project is in the public interest.’” Associations’ initial brief, p. 10 (quoting Exhibit A-18, p. 8). The Associations also noted that the Staff concluded that the Replacement Project “serves a public need, is in the public interest, and is the best option out of the alternatives considered.” Associations’ initial brief, p. 12 (citing 12 Tr 1736).

Additionally, the Associations contended that the Replacement Project serves a public need because it will alleviate an environmental concern relating to the dual pipelines and will provide greater protection to the Great Lakes and the public. The Associations noted that according to witness testimony and the Alternatives Analysis, if the Replacement Project is constructed, the risk of release from the tunnel would be “negligible, and un-quantifiably low.” Associations’ initial brief, p. 11 (quoting Exhibit ELP-24, pp. 3-60); *see also*, 9 Tr 1204; Exhibit A-9, Appendix 7, p. 88.

For the second prong of the Act 16 analysis, the Associations asserted that the replacement pipe segment is designed and routed in a reasonable manner and will meet or exceed PHMSA regulations and standards. *See*, Associations’ initial brief, p. 13; *see also*, 8 Tr 800; Exhibit A-13, p. 12; Exhibit A-14, pp. 133-178; Exhibit S-26, p. 1. The Associations also posited that the route is reasonable because it is the shortest distance between the two peninsulas. Associations’ initial brief, p. 13 (citing 7 Tr 584; 8 Tr 788; and Exhibits A-6 and A-13).

Regarding the third prong of the Act 16 analysis, the Associations averred that the Replacement Project meets or exceeds applicable safety and engineering standards as demonstrated by the testimony of MSCA witness Mr. Cooper. Associations’ initial brief, pp. 13-14.

Regarding the required MEPA analysis, the Associations asserted that the Commission’s MEPA review applies solely to the replacement pipe segment and not to the construction of the tunnel. The Associations argued that the record demonstrates that the replacement pipe segment will not pollute, impair, or destroy the air, water, or other natural resources, or the public trust in these resources. Associations’ initial brief, p. 15. In addition, the Associations noted that the EIR concluded that there are no anticipated impacts on geology, soils, terrestrial resources, air

emissions, groundwater, or drinking water. *Id.* (citing Exhibit A-12, pp. 11-15, 18). Thus, in the Associations’ opinion, the MEPA analysis should end here.

However, if the Commission were to consider the impacts of the tunnel construction, the Associations contended that there will be no pollution, impairment, or destruction of natural resources. *See*, Associations’ initial brief, pp. 16-17. The Associations further asserted that because the Replacement Project will not increase the capacity of Line 5 or alter the nature of its transportation services, GHG emissions will not pollute, impair, or destroy natural resources. Associations’ initial brief, p. 18 (citing 7 Tr 564, 757). Moreover, the Associations argued that:

it would be inappropriate to compare the GHG emissions from the proposed [Replacement] Project to a scenario where the dual pipelines are non-operational. The State of Michigan has abandoned its effort to enforce the Notice and the Commission has already ruled that Enbridge has the authority under the 1953 Order to continue to operate Line 5. (7 Tr. 576; Order, at 60.) While the Commission in April of 2021 was “unwilling to exclude evidence under MEPA that compares the pollution, impairment, or destruction attributable to an operating 4-mile pipeline segment in the Straits with nonoperational 4-mile dual pipeline segments,” that decision was premised on “uncertainty” created by the Notice and the possibility that the State would “succeed[] in its action to enforce the Notice.” (Order, at 67.) But much has taken place since the Commission’s decision, and the facts simply do not support a comparison of the proposed Project to a non-operational Line 5.

Associations’ initial brief, p. 18.

The Associations asserted that there is no feasible and prudent alternative to the Replacement Project that is consistent with the public health, safety, and welfare. Specifically, the Associations argued that the no-action alternative, which involves Commission rejection of the Replacement Project, is not feasible or prudent. The Associations explained that the litigation regarding the Notice has been dismissed and “Enbridge has the right to continue to operate the [dual pipelines] under the authority granted by the Commission in 1953.” Associations’ initial brief, p. 20. Therefore, the Associations contended that if the Replacement Project is not approved, the dual

pipelines will continue to operate and the Great Lakes will not benefit from the tunnel project as a means of secondary containment in the event of a release from the Straits Line 5 segment.

The Associations also rejected Dr. Stanton’s conclusion that the state’s energy needs can be met through electrification. The Associations asserted that Line 5 provides a critical supply of affordable propane for Michigan residents that cannot be met with existing rail infrastructure or truck transport. Associations’ initial brief, p. 22. In addition, the Associations averred that electric heat pumps are not a feasible alternative for heating needs because installation costs are high, Michigan has more than twice the heating load than the national average, and the price of electricity in Michigan “is more expensive, with electricity prices in the Upper Peninsula among the highest in the lower-48 states.” *Id.*, p. 23.

4. Michigan Laborers’ District Council

MLDC requested that the Commission approve Enbridge’s application for the Replacement Project. To begin, MLDC explained that it represents seven local labor unions and that Line 5 provides direct and indirect employment to MLDC members. MLDC asserted that the Replacement Project is expected to generate almost two million labor hours for approximately 200 Michigan workers over a multi-year period in the U.P. and the northern Lower Peninsula, along with hundreds of maintenance jobs after completion. MLDC’s initial brief, p. 3. MLDC averred that the Replacement Project will also provide the union with the ability to recruit new talent because of these long-term jobs. In addition, MLDC stated that the Replacement Project “will positively impact Michigan and regional and local governments, that will benefit from enhanced taxes, broadened employment, pension benefits and healthcare earned by private-sector labor, and an expanded trained and experienced workforce that will be available for future government road and infrastructure construction and maintenance.” *Id.*, p. 4. Moreover, MLDC

argued that Line 5 benefits Michigan businesses and residents because a substantial amount of Line 5 product is sent back to Michigan to meet business and residential energy needs. *Id.*, p. 5. Finally, MLDC contended that the Replacement Project should be approved because it will eliminate the risk of an anchor strike to the dual pipelines and will improve environmental safety.

5. Bay Mills Indian Community

Bay Mills²⁸ asserted that there are three reasons for the Commission to deny Enbridge's application: (1) the route is unreasonable, (2) Enbridge has failed to demonstrate that the design of the pipeline is reasonable, and (3) the Replacement Project fails the MEPA analysis.

Beginning with the route, Bay Mills argued that the Straits area is a traditional cultural landscape and specific historical sites will be negatively impacted by the Replacement Project. Bay Mills averred that no party disputed that the Straits are of deep spiritual and cultural significance as the center of the Tribal Nations' creation story and a place of treaty-protected fishing rights. In addition, Bay Mills stated that SHPO has recognized that the Straits area "is sensitive for the presence of terrestrial and bottomland archeological sites" Bay Mills' initial brief, p. 15 (quoting Exhibit BMC-40, p. 1). Bay Mills contended that the Replacement Project will degrade the integrity and the values associated with this cultural landscape and for this reason alone the Commission should find the route to be unreasonable.

Bay Mills asserted that the Straits area contains 141 recorded archeological sites, including culturally significant village and burial sites, and that SHPO has stated that there are likely to be more. Bay Mills' initial brief, p. 16 (citing Confidential Exhibit BMC-34, and Exhibit BMC-40, p. 1). Bay Mills stated that:

[c]onstruction activities and disturbances on and near Point La Barbe, including construction of proposed outfalls, operation of the tunnel boring machine, and

²⁸ In its initial brief, Bay Mills is joined by the GTBOC, LTBB, and NHBP.

excavation of a large retrieval shaft for the tunnel boring machine, will disturb and degrade the cultural values associated with particular sites. One such site is a prehistoric burial mound, recorded in the SHPO files as 20MK15, that is mapped near the [Replacement] Project area and within the limits of disturbance.

Bay Mills' initial brief, p. 17 (citing Confidential Exhibit BMC-42, pp. 10 and 21, and Confidential Exhibit BMC-34, p. 5). Bay Mills contended that similar disturbances will occur on McGulpin Point, arguing that the vibrations from the massive TBM may cause damage to cultural and archeological sites around the work area. Bay Mills asserted that Enbridge has failed to properly mitigate this risk because there is no plan for the company to adhere to a vibratory limit that would protect these sensitive structures. Finally, Bay Mills averred that the route is unreasonable because Enbridge has not completed the necessary investigation of the cultural and historical resources that may be affected by the Replacement Project. Bay Mills maintained that these investigations are ongoing and incomplete. Bay Mills' initial brief, p. 19 (citing 7 Tr 625; Exhibit BMC-40, p. 1; and Exhibit BMC-41).

Next, Bay Mills argued that the design of the pipeline and tunnel is unreasonable because it is hazardous and untested. Bay Mills stated that:

Enbridge plans to run a pipeline of liquid propane and crude oil, two highly volatile and flammable substances, through an enclosed underground tunnel. It is undisputed that this type of project has never been implemented anywhere else in the world. And for good reason. What is unique—and potentially catastrophic—about the Proposed Project is that it includes a 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.

Bay Mills' initial brief, p. 20 (citing 10 Tr 1327-1329, 8 Tr 803-807). Bay Mills asserted that a failure of the X70 pipe selected by Enbridge could lead to an explosion that damages the tunnel which, in turn, could lead to a release of Line 5 products into the Straits.

Bay Mills contended that the X70 pipe that is proposed for use in the Replacement Project has a demonstrated risk of failure at girth welds or heat affected zones. Bay Mills' initial brief, p. 20 (citing 10 Tr 1339-1340 and Exhibit BMC-43, pp. 11-14). Bay Mills asserted that the X70 pipe carries this risk of failure even where all applicable safety standards have been met. *See*, Bay Mills' initial brief, pp. 23-24 (citing 10 Tr 1336). In addition, Bay Mills stated that the fact that the pipeline will not be buried is irrelevant, explaining that "[t]he proposed design anchors the pipeline in the middle of the tunnel and uses rollers to allow for movement on either side. The movement will create additional stress on the girth welds and heat affected zones. And, as the [Joint Industry Report] recognizes, stress on the girth welds and heat affected zones leads to failure." Bay Mills' initial brief, p. 25.

Bay Mills argued that Enbridge's calculation of 0.000001 chance of an explosion in the tunnel and release of Line 5 products into the Straits is not credible or verified. Bay Mills stated that the "[assignment of] a probability to a risk through a Quantitative Risk Analysis ('QRA') is not utilized in the United States on pipeline projects, nor is it even defined in federal regulations." Bay Mills' initial brief, p. 25 (citing 10 Tr 1404-1405). Bay Mills contended that Enbridge provided no evidence to support its calculation and that Enbridge's witness, Mr. Dennis, "could not testify who calculated the number, when it was calculated, or crucially, what data points or equations were used to determine the probability." Bay Mills' initial brief, p. 25 (citing 8 Tr 812-818). Bay Mills asserted that the record is devoid of evidence to assist the Commission in confirming or refuting the credibility of the calculation.

Furthermore, Bay Mills posited that the design of the Replacement Project is unreasonable because it "lacks independency, meaning that each aspect of the design is linked to a common failure—a hydrocarbon release that produces a heavier than air vapor cloud. Multiple design

features within the Tunnel Project are all vulnerable to this same failure and therefore the design fails to provide independent, multi-level protection.” Bay Mills’ initial brief, p. 26. Bay Mills asserted that all of Enbridge’s alert systems, including the CPM, gas detection equipment, automatic shutoff valves, and Class 1, Division 2 electrical equipment, are subject to this same vulnerability, due to faulty design. Bay Mills argued that both the Staff and the company rely too heavily on the CPM system, which Bay Mills contended is not foolproof or sufficiently rapid to identify the heavier-than-air vapor cloud. Additionally, in Bay Mills’ opinion, the “design proposal . . . rests on the ventilation system working properly and there is no guarantee in Enbridge’s proposal that the ventilation system will succeed in sweeping the low-lying vapor clouds upwards within the tunnel” so that the vapor is clear of potential sources of electricity and protected from flammability. *Id.*, p. 27 (footnote omitted).

Turning to the MEPA analysis, Bay Mills contended that there is no dispute that the Replacement Project will result in GHG emissions and argued that these emissions will “harm the Tribal economies, cultural practices, and traditional knowledge that depend on those treaty-protected natural resources.” Bay Mills’ initial brief, p. 29. Bay Mills noted that construction of the Replacement Project will produce a significant amount of GHG emissions, and operation of the replacement pipe segment results in hundreds of metric tons of emissions annually. In addition, Bay Mills asserted that GHG emissions will be released through the production, processing, and combustion of the products that are transported by the replacement pipeline, which will result in 87,000,000 metric tons of CO₂e annually. *See, id.*, p. 30 (citing 9 Tr 1057).

Bay Mills argued that the Staff’s GHG emissions calculation is flawed because the Staff failed to include several sources of emissions during construction. Moreover, Bay Mills asserted that both the Staff’s and Enbridge’s GHG emissions calculations fail to account for the emissions

associated with the products that will be shipped through the new pipeline. Bay Mills stated that these emissions will contribute to climate change and will harm Michiganders and the Tribal Nations. *See*, Bay Mills’ initial brief, pp. 32-38.

Next, pursuant to the MEPA analysis, Bay Mills argued that there is a feasible and prudent alternative to the Replacement Project: the potential shut down of the dual pipelines or the no pipeline alternative. Bay Mills stated that:

[a]t the outset of this proceeding, Enbridge defined the purpose of the project as alleviating environmental risk to the Great Lakes. The Commission recognized this as the purpose, stating that the “purpose of the Replacement Project is to improve the safety of the 4-mile segment that crosses the Straits.” Ceasing operation of the dual pipelines and not building the tunnel would achieve that purpose. Indeed, in June 2020, ceasing operations of the dual pipelines is exactly how Enbridge temporarily alleviated environmental risk to the Straits. The most obvious way to prevent an oil spill to the Straits is to stop transporting oil through the Straits. That means of achieving the purpose must be considered by the Commission.

Bay Mills’ initial brief, pp. 40-41 (footnotes omitted). In addition, Bay Mills noted that other alternatives would be Enbridge’s voluntary compliance with the Notice or forced shutdown of the dual pipelines through litigation.

Bay Mills further opined that the 1953 order does not constrain the Commission’s MEPA analysis. Specifically, Bay Mills explained that MEPA does not require the permitting agency to consider only the alternatives that the permitting agency has the authority to implement. Rather, Bay Mills asserted that “[a]n agency can and should consider multiple possible alternatives” and that the agency’s MEPA analysis should consider whether each of those alternatives is feasible and prudent. Bay Mills’ initial brief, p. 42.

According to Bay Mills, the no pipeline alternative is feasible because “current consumers of propane [will] purchase fuels transported by other means or [will] switch energy sources, such as through electrification.” Bay Mills’ initial brief, p. 45 (citing 9 Tr 948-953, 1017-1018). Bay

Mills contended that the no pipeline alternative will eliminate the environmental risk to the Straits, will further the State's climate goals and policies, and will honor and respect the Tribal Nations' cultures and economies. *See*, Bay Mills' initial brief, p. 46 (citing 9 Tr 1043, 1063).

In conclusion, Bay Mills requested that the Commission deny Enbridge's Act 16 application, or, in the alternative, grant Bay Mills' petition for rehearing so that a full and complete record may be developed.

6. For Love of Water

FLOW asserted that the State of Michigan has a duty to protect public trust resources such as the Straits. In addition, FLOW contended that the law strictly limits the circumstances under which a state may convey a property interest in a public trust natural resource to a private entity, the narrow exceptions being: (1) when the conveyance results in the improvement of the interest thus held or (2) when parcels can be disposed of without detriment to the public interest in the lands and waters remaining. FLOW's initial brief, p. 2 (citing *Obrecht v Nat'l Gypsum Co*, 361 Mich, 399; 105 NW2d 143 (1960)). FLOW asserted that the Commission's "sister agencies" have failed to make the necessary findings to support the conveyance of the 2018 easement to MSCA and Enbridge. FLOW's initial brief, p. 2.

FLOW stated that the GLSLA "requires that any conveyance, lease, agreement, occupancy, use or other action in the waters or on, in, through or under the bottomlands of the Great Lakes, be authorized by [EGLE] pursuant to the public trust standards in the GLSLA and the common law of the public trust doctrine." FLOW's initial brief, p. 3 (citing MCL 324.32502-324.32508). FLOW contended that before the State of Michigan may convey an interest in Great Lakes waters and bottomlands to a private entity, the State of Michigan must determine that the public trust will not be impaired or substantially affected. FLOW further argued that pursuant to MEPA, the

Commission must prevent or minimize environmental degradation, which is a duty independent of the Commission's Act 16 determination. FLOW's initial brief, p. 4 (citing MCL 324.1705 and *State Hwy Comm v Vanderkloot*, 392 Mich 159, 186; 220 NW2d 416 (1974) (*Vanderkloot*)).

In addition, FLOW stated that Act 359 requires that all parties to the Replacement Project obtain all requisite permits and approvals under MCL 254.324d(4)(g). FLOW contended that "Enbridge . . . did not apply for or obtain any authorization for the 2018 Easement or 2018 Assignment of Easement under the conveyance or occupancy and use sections of the GLSLA." FLOW's initial brief, pp. 8, 13-15. FLOW also argued that the DNR failed to make the necessary findings to convey the property interests to MSCA and Enbridge pursuant to public trust law or the GLSLA. Furthermore, FLOW maintained that the Agreements do not provide the requisite findings. Thus, FLOW contended that the 2018 easement conveyance is unlawful and the Commission cannot grant the Act 16 application because the Replacement Project would, if approved, unlawfully occupy submerged public trust lands and waters of the Straits. Similarly, FLOW asserted that Enbridge failed to obtain proper authorization from the State Administrative Board or from the relevant Tribes "and failed to consider and determine the effect on[,] and potential impairment to the substantial tribal property rights of the 1836 Treaty Tribes in, fishing, fishery habitat and other usufructuary activities protected by the Treaty of 1836." FLOW's initial brief, p. 16.

FLOW stated that Enbridge did not consider or evaluate a no-action alternative and did not consider the capacity available on other pipelines on Enbridge's pipeline system. FLOW's initial brief, p. 10 (citing 7 Tr 585-586). FLOW argued that ELPC/MiCAN made a prima facie showing that the Replacement Project will result in pollution or impairment of the air, water, natural resources, and public trust in those resources. *See*, FLOW's initial brief, p. 10.

Regarding the MEPA analysis, FLOW asserted that Enbridge's Act 16 application must be denied because the Replacement Project will likely result in pollution, impairment, or destruction of public trust resources. In addition, FLOW averred that as part of its MEPA analysis, the Commission must consider a no-action alternative and must evaluate whether Line 6B has "the capacity to meet market demand if Line 5 closes" and whether the Replacement Project may potentially become a stranded asset. *Id.*, p. 24.

7. Environmental Law and Policy Center and Michigan Climate Action Network

ELPC/MiCAN asserted that the Replacement Project will result in pollution, impairment, and destruction of natural resources, and as a result, Enbridge's Act 16 application must be denied pursuant to the requirements of MEPA. They argued that the no pipeline alternative²⁹ is reasonable and prudent and should not have been dismissed by Enbridge. ELPC/MiCAN's initial brief, p. 9.

ELPC/MiCAN contended that Mr. Erickson's testimony demonstrates that there are two reasons why the Replacement Project will result in increased GHG emissions, which are a pollutant under MEPA. *See*, ELPC/MiCAN's initial brief, pp. 9-13. First, ELPC/MiCAN noted that according to Mr. Erickson, the equipment used to build and operate the tunnel will produce GHG emissions, and he used standard GHG emissions accounting practices to determine the resulting amount. ELPC/MiCAN stated that "[n]o party disputes the propriety of [the GHG emissions accounting] methodology, though Staff inappropriately narrows the scope of the methodology when it is undertaken by Staff experts" (referring to Weston). *Id.*, p. 12.

²⁹ ELPC/MiCAN explained that they prefer the term "no pipeline alternative" over "no action alternative," in order to distinguish it from the no-action alternative described by the Staff in which the dual pipelines continue to operate. ELPC/MiCAN's initial brief, pp. 49-50, note 9. The Commission also notes that, when addressing this issue of terminology, "alternative" and "scenario" are used interchangeably in this order.

ELPC/MiCAN asserted that Mr. Erickson calculated about 87,000 metric tons of CO₂e (in total) related to the construction of the Replacement Project and 520 metric tons CO₂e annually for operation of the Straits Line 5 segment. ELPC/MiCAN averred that Enbridge provided no rebuttal on this issue. *Id.*, pp. 13-14 (citing 9 Tr 1048-1052 and 7 Tr 707). ELPC/MiCAN noted that the Staff's estimates were lower, but they asserted that the Staff mistakenly restricted the types of indirect emissions included in the analysis.

Second, ELPC/MiCAN asserted that GHG emissions result from the product that flows through the Straits Line 5 segment. *See*, ELPC/MiCAN's initial brief, pp. 14-15. ELPC/MiCAN noted that, according to Enbridge, the same amount of product will be transported through the Replacement Project as is currently transported through the dual pipelines "for an indeterminate number of years." *Id.*, p. 17. ELPC/MiCAN stated that "GHG emissions are released at each stage of producing, processing, and combusting petroleum." *Id.* Therefore, ELPC/MiCAN contended that the product's lifecycle emissions upstream stage ("all stages that happen before, or upstream, of final combustion") and downstream stage ("combustion at the point of end use") should be included in the MEPA analysis. *Id.*

According to ELPC/MiCAN, Mr. Erickson found that if the Replacement Project was not constructed, it would not mean that these emissions would be avoided. Rather, ELPC/MiCAN noted that Mr. Erickson estimated that in a no pipeline scenario, the GHG emissions would be 27,000,000 metric tons of CO₂e annually, compared to 87,000,000 CO₂e metric tons annually from the Replacement Project. ELPC/MiCAN's initial brief, p. 19 (citing 9 Tr 1061). Therefore, because the no pipeline alternative would result in substantially less GHG emissions than the Replacement Project, ELPC/MiCAN asserted that it is the most feasible and prudent alternative, as demonstrated by the testimony on the record. *See*, ELPC/MiCAN's initial brief, pp. 19-38 (citing

7 Tr 661-675, 697, 709, 711, 713, 718-721, 725-726, 733-734; 9 Tr 972-974, 1047-1048, 1061-1079, 1087-1092; 12 Tr 1777, 1801-1802).

ELPC/MiCAN argued that these increased GHG emissions will pollute, impair, and destroy Michigan air, water, and other natural resources and contribute to climate change. ELPC/MiCAN asserted that Michigan is already experiencing the effects of climate change through increased temperatures, precipitation, and drought. ELPC/MiCAN contended that the increased GHG emissions from the Replacement Project will further exacerbate climate change in Michigan and impact the state's natural resources. ELPC/MiCAN's initial brief, pp. 43-44 (citing 9 Tr 1148-1164).

ELPC/MiCAN stated that Dr. Howard quantified the social cost of GHG emissions, also known as the social cost of carbon, to monetize the incremental costs associated with both the construction/operation of the Replacement Project as well as the lifecycle GHG emissions associated with the products that will be transported through the Replacement Project. ELPC/MiCAN's initial brief, p. 45 (citing 9 Tr 1105-1116). ELPC/MiCAN noted that according to Dr. Howard, a conservative estimate of the cost associated with the increased GHG emissions is \$41 billion. ELPC/MiCAN explained that:

[t]his means at least \$41 billion of damage to Michigan, the United States, and globally, manifesting as energy system disruptions, air quality impacts, extreme temperatures, water quality and water scarcity impacts, agricultural productivity losses, property damage, biodiversity losses, and costs to other climate-vulnerable market sectors and natural resources important to Michiganders.

ELPC/MiCAN's initial brief, p. 46.

ELPC/MiCAN argued that the no pipeline scenario is a feasible and prudent alternative that is consistent with Enbridge's stated environmental safety goal, as well as with the State's duty to protect natural resources and its policy goal of reducing GHG emissions. ELPC/MiCAN

contended that Enbridge erred in limiting its alternatives analysis to only those options identified in the First Agreement, arguing that a party may not simply use an agreement to avoid the required review under MEPA. They argued that an Act 16 applicant may not simply choose to exclude a feasible alternative, and they objected to Enbridge's decision to define "the alternatives analysis to exclude any alternative that does not include the flow of oil across the Straits of Mackinac."

ELPC/MiCAN's initial brief, p. 48. ELPC/MiCAN asserted that the Staff is mistaken in describing the no-action alternative as one where the dual pipelines continue to operate "until Enbridge determines to voluntarily cease operations or a legal or regulatory action forces Enbridge to cease operations." *Id.*, p. 49 (quoting 12 Tr 1728). ELPC/MiCAN observed that the Staff is asking the Commission to simply assume that the Notice is invalid.

ELPC/MiCAN argued that the no pipeline scenario is a feasible and prudent alternative. ELPC/MiCAN posited that in the absence of the Line 5 Straits segment, propane will be transported to Michigan by alternative methods or customers will switch to other alternatives, such as electric heat pumps. ELPC/MiCAN contended that in the no pipeline scenario, "losses to Michigan refineries would be limited to 15 percent of supply and . . . the related increase in gasoline prices would be lower than 1 cent per gallon." ELPC/MiCAN's initial brief, p. 53 (citing Exhibit ELP-24; 9 Tr 959). In addition, ELPC/MiCAN asserted that Michigan households could continue to use the same amount of propane at an additional cost of \$55.00 to \$209.00 per year. *See*, ELPC/MiCAN's initial brief, p. 53 (citing 9 Tr 959, 968, and Exhibit ELP-24, p. ES-2). ELPC/MiCAN contended that the U.P. Energy Task Force identified several alternative methods of shipping propane to the U.P., and Public Sector Consultants observed that rail transport is a feasible option for the supply of propane.

Finally, ELPC/MiCAN asserted that the no pipeline alternative is consistent with the State's climate policies while accomplishing the purpose of the Replacement Project, and they state that "Michigan propane users may face some increases in costs of propane, but most would eventually transition to cost-effective electric heat pumps that are more in line with state and national climate goals." ELPC/MiCAN's initial brief, pp. 58-59.

G. Reply Briefs

1. Enbridge Energy, Limited Partnership

As an initial matter, Enbridge contended that FLOW, ELPC/MiCAN, and Bay Mills do not dispute that the public interest will be better served by the Replacement Project as compared to the continued operation of the dual pipelines.

Turning to Bay Mills' claim that "the Straits is an inappropriate location for the tunnel and pipeline," Enbridge argued that Bay Mills disregards the fact that the dual pipelines are already located in the Straits and will continue to operate with or without the Replacement Project. Enbridge's reply brief, p. 2. Rather, Enbridge asserted that the material issue in this proceeding is determining the appropriate route for the Replacement Project so that the dual pipelines may be replaced and the Great Lakes better protected. Additionally, Enbridge objected to Bay Mills' contention that the design of the Replacement Project is unsafe. Enbridge stated that "[t]he fatal flaw with this argument is that every qualified expert who has examined the risk associated with locating the Line 5 Straits crossing within a tunnel has determined that its relocation within a tunnel is safer than the existing Line 5 Straits crossing and by any measure extremely safe." *Id.*, p. 3 (citing Exhibit ELP-24, pp. 3-60; 12 Tr 1737; 9 Tr 1204; and Exhibit A-9, Appendix 7).

Enbridge also disputed Bay Mills' claim that pursuant to the Commission's MEPA analysis, the company's application should be denied because the Replacement Project will result in

increased GHG emissions and irreparable damage to tribal, cultural, and natural resources.

Enbridge reiterated that the dual pipelines will continue to operate whether or not the Replacement Project is approved, thus resulting in the same, or a similar, amount of GHG emissions. In addition, Enbridge noted that there are no meaningful alternative fuel sources and that demand for Line 5 products is not expected to change. Finally, Enbridge stated that there is no dispute that truck and rail transportation result in more GHG emissions, rather than less, as compared to pipeline transportation.

Next, Enbridge addressed Bay Mills' claim that vibrations from tunnel construction will negatively impact cultural and natural resources. Enbridge noted that EGLE "determined that the construction activities associated with the tunnel project 'do not authorize impairment of, and are not anticipated to adversely affect fish, wildlife, or habitat, nor the ability to hunt, fish, or gather in the Straits.'" Enbridge's reply brief, p. 8 (quoting Exhibit A-8, p. 2). In addition, Enbridge stated that SHPO identified a total of 11 archaeological sites within one mile of the project work area and:

[w]ith respect to those identified sites, the survey revealed only one historic structure (a residence and modern outbuilding) actually within the south workspace, and two archaeological sites located within the north workspace. Based on the established review criteria, the one historic structure and the two archaeological sites were recommended as **not** eligible for listing in the National Register of Historic Places.

Enbridge's reply brief, p. 9 (emphasis in original) (citing 7 Tr 633) (internal citations omitted).

Furthermore, Enbridge asserted that any potential impact on Tribal and natural resources will be appropriately addressed through USACE's Section 106 process. Concomitantly, Enbridge noted that it is performing additional surveys addressing a potential burial ground near Outfall 002 in response to a request by USACE. Enbridge's reply brief, p. 10, n. 11 (citing 7 Tr 627).

Enbridge disputed Bay Mills' claim that the design of the Replacement Project is unique and untested. Enbridge cited Exhibit BMC-41, p. 21, which contains a list of hydrocarbon pipelines that are located and operating safely within tunnels. Enbridge reiterated the arguments set forth in its initial brief regarding the design of the tunnel, the grade of pipe, and the low risk of a release of Line 5 products from the tunnel. *See*, Enbridge's reply brief, pp. 11-19.

Enbridge asserted that Bay Mills provided only one alternative to the Replacement Project—the shut-down of Line 5—which is not feasible or prudent. Enbridge contended that the no pipeline alternative was not presented in the company's application and is not an alternative pending before the Commission. Enbridge stated that in any case, a shutdown of Line 5 is not consistent with the requirements of public health, safety, and welfare pursuant to the standard set forth in MEPA. *See*, Enbridge's reply brief, pp. 19-21.

In reply to ELPC/MiCAN and FLOW, Enbridge contended that the no pipeline scenario is not feasible or prudent to alleviate or eliminate potential environmental impairment. Enbridge reiterated that the additional GHGs emitted during construction of the tunnel are minor compared to the GHGs emitted in the no pipeline scenario, which would require transporting the fuel products by rail. *See*, Enbridge's reply brief, pp. 23-24 (citing 7 Tr 665). Additionally, Enbridge asserted that contrary to the arguments made by ELPC/MiCAN, a shutdown of Line 5 would not strand oil in Western Canada and the Bakken regions, would not significantly increase the cost of fuels, would not reduce the demand for the fuels, and would not reduce GHG emissions. *See*, Enbridge's reply brief, pp. 24-32. Therefore, Enbridge concluded that "[t]he 'no pipeline alternative' creates far more environmental harm than the approval of Enbridge's Application." *Id.*, p. 34.

Enbridge disputed FLOW's claim that the company's application must be denied "until the tunnel easement and assignment (Exhibit A-6) have been authorized pursuant to the common law public trust doctrine, the Great Lakes Submerged Lands Act and Act 10." Enbridge's reply brief, p. 34 (footnote omitted). Enbridge contended that the Commission has no jurisdiction to resolve these disputes and FLOW provides no statutory or other legal support that would empower the Commission to do so. Rather, Enbridge argued, the Commission has the obligation to comply with the public policy set forth in Act 359 to approve the construction of a pipeline in a utility tunnel beneath the Straits.

Responding to the Staff's initial brief, Enbridge "commends the Staff for its thorough and accurate assessment of the issues and arguments," however the company "believes that the Staff has overreached in imposing conditions beyond this Commission's jurisdiction." *Id.*, p. 39.

Enbridge explained that:

[t]hese conditions are that Enbridge "commit to finalize its impairment mitigation plans to satisfy all local, state, and federal permitting requirements and to address potential environmental impairments from construction identified in Staff's testimony." Staff also stated that the "Commission should condition any approval such that it would be considered null and void if the [USACE] rejects Enbridge's application, or the [USACE's] review results in significant changes to the design of the proposed utility tunnel and replacement pipeline that are inconsistent with any proposal approved in this case."

Enbridge's reply brief, pp. 39-40 (quoting Staff's initial brief, pp. 117, 125) (internal citations omitted) (footnote omitted).

Regarding the Staff's first condition, which involves 10 potential environmental impacts identified by Ms. Mooney, Enbridge stated that it has addressed each issue. *See*, Enbridge's reply brief, p. 40 (citing 12 Tr 1849-1850; 7 Tr 610-624). In addition, Enbridge asserted that it will develop an EPP that will be continuously updated and will meet or exceed all federal, state, and local environmental protection and erosion control requirements. Enbridge noted that the baseline

EPP is set forth in Exhibit A-11, pp. 228-359, and an updated EPP is set forth in Exhibit S-19, pp. 13-59. Enbridge's reply brief, p. 41, n. 43. Enbridge contended that, in any case, the Commission has no jurisdiction over tunnel construction, permitting, or environmental conditions; rather, the Commission only has jurisdiction over the replacement pipe segment. *See, id.*, pp. 41-42.

Next, Enbridge responded to the Staff's second condition that Commission approval of the company's Act 16 application should be null and void if USACE rejects Enbridge's Sections 7 and 106 applications or if USACE recommends significant changes to the design of the proposed tunnel and replacement pipeline that are inconsistent with Enbridge's Act 16 application.

Enbridge stated that:

were the issues that are properly before this Commission to be impacted by the USACE permitting process in a way such that it would affect the decision to be issued by the Commission, the Commission of course, on its own could reopen this proceeding as necessary to adjust its decision as may be warranted. Thus, no condition relating to the USACE process as Staff has proposed is warranted.

Enbridge's reply brief, p. 42. Enbridge concluded by requesting that the Commission issue an order approving the company's application without condition so as to fulfill the purpose of Act 359.

2. The Commission Staff

In response to the arguments set forth in the intervenors' initial briefs, the Staff stated that:

[a]t present, the Dual Pipelines operate with no buffer between the pipeline and the waters of the Straits. No one wants this to continue, but it may continue if Enbridge is not allowed to proceed with its proposed project. [ELPC/MiCAN] and the Tribes discount this possibility and instead argue that a no-pipeline alternative should be considered as the best way to fulfill Enbridge's stated purpose of alleviating the risk of a spill. The purpose of Enbridge's proposed replacement and relocation project, however, is not only to alleviate risk; it is also to maintain operation of the four-mile segment of Line 5 crossing the Straits. A no-pipeline alternative obviously does not fulfill this purpose. And because it does not fulfill one of the two primary purposes of the proposed project, it is not a viable alternative to the pipeline.

Staff's reply brief, pp. 1-2 (internal citations omitted) (footnote omitted). In addition, the Staff asserted that the April 21 order defined the scope of this proceeding and made clear that the no pipeline alternative is outside the scope of this case. *See*, Staff's reply brief, pp. 5-10.

The Staff noted that FLOW, ELPC/MiCAN, and Bay Mills argue that the no pipeline scenario is a feasible and prudent alternative. The Staff stated that "although this supposed alternative is not a direct challenge to the need for Line 5 as a whole, it implies that Line 5 is no longer needed. In other words, by suggesting that the Commission consider a scenario in which there is no Line 5, they question the need for Line 5 in violation of the Commission's scope order." Staff's reply brief, p. 11. In addition, the Staff asserted that the feasible and prudent alternatives considered by the Commission in its MEPA analysis must align with the purpose of the proposed project. The Staff noted that one purpose of Enbridge's Act 16 application is replacement of the dual pipelines, and "[t]he inherent purpose of the 'replacement,' to substitute the function of the Dual Pipelines, must be acknowledged in addition to the purpose of reducing the risk of an oil spill into the Great Lakes." Staff's reply brief, p. 14. Accordingly, the Staff asserted that a no pipeline alternative does not effectuate one of the purposes of the Replacement Project and, therefore, cannot be considered a "true alternative." *Id.*

Furthermore, the Staff noted that "no party in this proceeding has identified a past petroleum pipeline case under Act 16 of 1929, or even a natural gas pipeline case under [Public Act 9 of 1929], in which the Commission considered shutting down an existing pipeline as an alternative to a proposed replacement." Staff's reply brief, p. 16. In any case, the Staff argued that no party has provided convincing evidence that the no pipeline scenario is a feasible and prudent alternative. *See, id.*, pp. 18-22.

Next, the Staff objected to FLOW's claim that pursuant to the public trust doctrine and the GLSLA, the Commission may not approve Enbridge's Act 16 application. The Staff argued that "[t]he true threshold matter in this case is not the validity of Enbridge's property rights [subject to the public trust doctrine and GLSLA], as FLOW suggests, but whether the Act 16 criteria have been met and whether the project satisfies MEPA's requirements." Staff's reply brief, p. 23. The Staff averred that:

[t]hough the status of property rights and easements is undoubtably relevant to Act 16 proceedings, the Commission's four [Act 16] criteria do not require an applicant to obtain all property rights for a proposed project before approval. This has never been a prerequisite to Act 16 approval in the almost 100 years that Act 16 has been in effect. Rather, through an Act 16 application, qualifying entities have been able to request authority to obtain property rights through eminent domain. MCL 483.1; MCL 483.2. It follows that property rights may be obtained after Act 16 approval is granted. And the Commission has indeed granted approval in Act 16 proceedings where additional easement rights would be required.

Staff's reply brief, p. 24. Furthermore, the Staff contended that contrary to FLOW's claim, the Commission is not legally required, or even authorized, in its Act 16 review to find that the 2018 easement and assignment of easement by independent State of Michigan agencies were invalid. *See*, Staff's reply brief, pp. 25-27.

In response to Bay Mills' concerns about the route of the Replacement Project and its impact to cultural and natural resources, the Staff asserted that these concerns will be addressed by SHPO, EGLE, and USACE. *See*, Staff's reply brief, pp. 29-33. And, regarding Bay Mills' claim that the vibrations from the TBM will damage cultural and archaeological areas, the Staff stated that:

[t]he Tribes have not provided any testimony that the potential archeological sites would be impacted by vibration, let alone the small levels anticipated by McMillan Jacobs. Nonetheless, the Company explained in testimony that it is still analyzing data on this issue that will be provided to [USACE] in consultation with SHPO and the Tribes

Staff's reply brief, p. 34. In addition, the Staff asserted that it is "confident that the potential issues identified by the Tribes will be granted due attention given the rigor of the EIS process and the stakeholders involved. Consistent with this view, the Commission should make any approval contingent on approval from other state and federal permitting agencies, including [USACE]." *Id.*, p. 35.

The Staff disputed Bay Mills' claim that the Replacement Project has not been designed in a reasonable or safe manner. The Staff argued that while the configuration of the Replacement Project has not been previously used for this type of fuel mix, each separate feature of the Replacement Project has been used and has proven to be safe and reliable. *See*, Staff's reply brief, pp. 36-40. In addition, the Staff disagreed with Bay Mills that in the unlikely event of an explosion in the tunnel, the concrete lining in the tunnel would shatter and allow fuel products to escape into the Straits. The Staff asserted that "the tunnel lining material 'has been designed to be resilient against a hydrocarbon fire and any anticipated fire exposure condition,'" and in the unlikely event of a breach of the tunnel, outside hydrostatic pressure would prevent fuel products from reaching the Straits. Staff's reply brief, p. 41 (quoting Exhibit A-13, p. 12).

In response to Enbridge's claim that the Staff has no concerns with the safety of the Replacement Project, the Staff stated that it:

would like to clarify this point, recognizing that the Company cited Staff witness David Chislea's testimony, where Mr. Chislea said, "At this time, based on the preliminary design and construction plans," Staff does not have any concerns. Although this is still true, Staff will remain in ongoing communications with PHMSA during its inspections and review. Staff maintains that the Company can mitigate pipeline safety concerns and to do so, firmly recommends that the Company implement all of Staff's recommendations.

Staff's reply brief, pp. 43-44 (internal citation omitted).

The Staff noted that ELPC/MiCAN claim that the upstream and downstream GHG emissions will be significantly reduced if Line 5 is shut down. However, the Staff stated that “[t]he scenario envisioned by [ELPC/MiCAN] collapses if any of the [scenario] premises are wrong or any of the [scenario] predictions fail to reach fruition.” Staff’s reply brief, p. 47. Specifically, the Staff contended that ELPC/MiCAN’s Line 5 shut down scenario will likely result in a 0.3% increase in petroleum prices, which, in the Staff’s opinion, is not substantial (i.e., a penny increase in price). The Staff asserted that this modest increase will not deter consumption of petroleum products and, as a result, will not reduce GHG emissions. Therefore, the Staff states that the no pipeline scenario is not a prudent alternative that should be considered in the Commission’s MEPA analysis.

3. For Love of Water

In its reply brief, FLOW reiterated that Enbridge has not obtained the necessary property rights to occupy the bottomlands of the Straits and construct the Replacement Project. *See*, FLOW’s reply brief, pp. 2-7.³⁰ Additionally, FLOW restated that pursuant to the MEPA analysis, the evidence on the record demonstrates that the Replacement Project is likely to impair or destroy Michigan’s natural resources or the public trust in those resources. *See*, FLOW’s reply brief, pp. 7-14. Moreover, FLOW contended that “the environmental impacts of the proposed conduct are far greater than those in its construction phase alone.” *Id.*, p. 10. FLOW asserted that there are a variety of reasonable feasible and prudent alternatives to the Replacement Project that would better protect the air, water, natural resources or public trust in those resources. As a result, FLOW requested that the Commission deny Enbridge’s application for the Replacement Project.

³⁰ Because FLOW’s reply brief is not paginated, the Commission clarifies that page 1 starts in natural order with the first page of the brief.

4. The Michigan Propane Gas Association and the National Propane Gas Association

The Associations replied that on the record, the only feasible and prudent alternative proposed by the intervenors is to simply not construct the Replacement Project. However, the Associations argued that shutting down Line 5 “is not feasible, prudent, or consistent with the reasonable requirements of the public health, safety, and welfare.” Associations’ reply brief, p. 3. The Associations explained that the fuels transported on Line 5 supply a critical energy need in Michigan and the region.

Next, the Associations disputed the intervenors’ claim that construction of the Replacement Project will have a lasting negative impact on fish populations in Lake Michigan or that it will produce an excessive amount of GHG emissions that will pollute, impair, or destroy natural resources. The Associations argued that “the alternative of transporting the Line 5 products by truck or rail would produce more GHG emissions, not less.” Associations’ reply brief, p. 5. Furthermore, the Associations objected to the intervenors’ request that the Commission consider the lifecycle GHG emissions associated with the products transported on Line 5 that are “produced and processed and combusted by end users.” *Id.* They contended that the Commission should reject this request because if the Replacement Project is not approved, Line 5 will continue to operate in its current location; it will transport the same fuels for production, processing, and combustion, and it will result in the same amount of GHG emissions. In addition, the Associations argued that pursuant to its MEPA review, the Commission need not examine alternatives to the Replacement Project because the evidence shows that the Replacement Project will not pollute, impair, or destroy natural resources.

The Associations asserted that the intervenors “misconstrue what the purpose [of the Replacement Project] is, characterizing it as only alleviating an environmental risk to the Great

Lakes” Associations’ reply brief, p. 7. Rather, the Associations stated that “[t]he purpose of the [Replacement] Project is and always has been to allow Line 5 to continue operating, only with a safer crossing under the Straits.” *Id.* (citing 7 Tr 756 and 12 Tr 1740-1742). The Associations contended that the Commission should reject the no pipeline alternative because it does not achieve this purpose.

In the event the Commission considers the no pipeline alternative, the Associations requested that the Commission approve the Replacement Project because there are no feasible and prudent alternatives that are consistent with the public health, safety, and welfare. The Associations averred that Line 5 “serves a public need” because “it provides transportation for critical energy services in Michigan and the region, including propane to heat homes in the Upper and Lower Peninsulas of Michigan.” Associations’ reply brief, p. 8. According to the Associations, if the Commission declines to approve the Replacement Project, “substantial investment in new infrastructure” for fuel transportation would be required and new and expensive home heating pumps will be needed. *Id.*, p. 9. The Associations asserted that the intervenors fail to explain how these projects would be financed and economically constructed.

Finally, the Associations disputed the intervenors’ contention that “the no-pipeline alternative is prudent because it advances the State’s goals in the Governor’s MI Healthy Climate Plan.” Associations’ reply brief, p. 11. The Associations argued that the Legislature has determined the public need for the Replacement Project in Act 359, and the Governor’s MI Healthy Climate Plan cannot supplant that legislation.

5. Environmental Law and Policy Center and the Michigan Climate Action Network

ELPC/MiCAN asserted that Enbridge, the Staff, and the Associations failed to rebut ELPC/MiCAN’s *prima facie* MEPA case that “[t]he Proposed Project will exacerbate climate

change through the direct and indirect emission of greenhouse gases” and that the only feasible and prudent alternative is the no pipeline scenario. ELPC/MiCAN’s reply brief, p. 1. They also argued that the conclusions offered by MLDC regarding employment and commerce are unsupported and irrelevant. ELPC/MiCAN’s reply brief, p. 1, n. 1.

ELPC/MiCAN noted that “Enbridge, [the] Staff, and the Propane Associations recite the development and content of various agreements between the State of Michigan and Enbridge in an effort to establish the necessity and propriety of the Proposed Project.” ELPC/MiCAN’s reply brief, p. 2. ELPC/MiCAN argued that the provisions of the Agreements are not relevant to the Commission’s MEPA review because MEPA is supplementary to other administrative and regulatory procedures that are required by law. *See*, ELPC/MiCAN’s reply brief, p. 2 (citing *Her Majesty the Queen v Detroit*, 874 F2d 332, 337 (CA6 1989)). In addition, ELPC/MiCAN asserted that the Agreements are negotiated outcomes and “do not represent the State’s chosen outcome from a thorough alternatives analysis.” ELPC/MiCAN’s reply brief, p. 2. They contended that agreements between private companies and State agencies “cannot take the place of the Commission’s independent MEPA review.” *Id.*, p. 4, n. 2.

Next, ELPC/MiCAN asserted that Enbridge failed to evaluate all feasible and prudent alternatives in its MEPA analysis in this case. ELPC/MiCAN argued that Enbridge should have considered the scenario in which the dual pipelines are shut down and the company does not construct the Replacement Project. ELPC/MiCAN stated that:

[c]onsideration of this alternative would require analysis by Enbridge of how oil would get to market. . . . Mr. Earnest testified that he has access to and has used in the past a Market Optimization Model that assesses crude oil market implications of changes in logistical infrastructure, such as Line 5, that enables crude oil to reach the global market. (Earnest Cross, 7 TR 731–32). Enbridge did not ask Mr. Earnest to employ that model here.

ELPC/MiCAN’s reply brief, p. 6.

Additionally, ELPC/MiCAN objected to the Staff's contention that if the Notice is not enforced and the Replacement Project is not approved and constructed, then the dual pipelines will continue to operate in their current location. ELPC/MiCAN argued that the Commission must assume that the Notice is valid and enforceable and that there is a scenario in which the dual pipelines could be shut down. In such a scenario, ELPC/MiCAN averred that in the MEPA analysis, the Commission must "compare the current environmental situation with the probable condition of the environment after the construction of the Proposed Project." ELPC/MiCAN's reply brief, p. 6.

ELPC/MiCAN also objected to the Staff's and Enbridge's characterization of the purpose of the Replacement Project, claiming that it is inconsistent and inaccurate. ELPC/MiCAN asserted that the "Staff seeks to define Enbridge's purpose [of the Replacement Project] to include the need for a pipeline through the Straits, even though Enbridge has explicitly argued that the need for Line 5 is outside the scope of this case." *Id.*, p. 8. Furthermore, ELPC/MiCAN noted that Enbridge has stated that the purpose of the Replacement Project "is to alleviate an environmental concern to the Great Lakes." *Id.* However, ELPC/MiCAN argued that Enbridge has failed to consider that a no pipeline alternative would effectively achieve the purpose of protecting the Great Lakes from a release of fuel products from Line 5.

ELPC/MiCAN asserted that according to the Staff, the Commission "does not have explicit statutory authority to shut down the Dual Pipelines," and, therefore, should not consider a no pipeline scenario in its MEPA analysis. ELPC/MiCAN's reply brief, p. 10. ELPC/MiCAN, however, disagreed and contended that MEPA directs the agency to evaluate the actual or probable environmental impairment from the applicant's proposed conduct and any feasible and prudent alternatives, such as the no pipeline scenario. In ELPC/MiCAN's opinion, the analysis of feasible

and prudent alternatives, including the no pipeline scenario, is not contingent on whether the Commission has the authority to shut down the dual pipelines.

In addition, ELPC/MiCAN argued that the Staff failed to properly evaluate the GHG emissions associated with the Replacement Project as required by MEPA. In ELPC/MiCAN's opinion, "MEPA does not ask whether pollution is 'typical' for the activity at issue. The statute asks whether the conduct at issue pollutes, impairs, or destroys the air[,] water or other natural resources, or the public trust in those resources." ELPC/MiCAN's reply brief, p. 10 (quoting Staff's initial brief, p. 82). ELPC/MiCAN asserted that the Staff did not rebut ELPC/MiCAN's prima facie case that the Replacement Project results in GHG emissions that contribute to climate change and negatively impact fish, loons, sugar maples, and wild rice in Michigan.

ELPC/MiCAN also claimed that the Staff improperly excluded Scope 3 emissions (those from indirect sources not owned or controlled by the company) from its construction-related GHG emissions estimate. ELPC/MiCAN noted that the Staff argued "that Scope 3 emissions should not be included because they are optional under the Greenhouse Gas Protocol for corporate accounting and reporting." ELPC/MiCAN's reply brief, p. 14. However, ELPC/MiCAN asserted that:

[u]nder MEPA, the question is whether GHG emissions are the result of the conduct at issue. The protocol recognizes that "Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company." This language supports including Scope 3 emissions in a MEPA analysis, even though the protocol's Scope 1/2/3 construct intended for business use is not a useful guide for evaluating environmental harm from greenhouse gases under MEPA.

ELPC/MiCAN's reply brief, pp. 14-15 (footnote omitted). Additionally, ELPC/MiCAN contended that in the April 21 order, the Commission found that its MEPA analysis should be applied to the products shipped through the Replacement Project. Moreover, ELPC/MiCAN noted that federal courts have determined that indirect emissions may be included in a MEPA analysis.

ELPC/MiCAN disputed the Staff's claim that if the dual pipelines are shut down, Enbridge will continue to ship the same amount of fuel products, albeit by rail and truck, and that these types of transportation will produce more GHG emissions than the Replacement Project. ELPC/MiCAN asserted that "because rail is more expensive, and less oil is therefore transported, the net effect is a reduction in GHG emissions." ELPC/MiCAN's reply brief, p. 16. Moreover, ELPC/MiCAN objected to the Staff's and Enbridge's contention that if the Straits Line 5 segment is shut down, global oil markets will meet the demand for fuel products, and GHG emissions will remain static. ELPC/MiCAN urged the Commission to "require an actual analysis of market impacts and resulting [GHG] emissions." *Id.*, p. 22. ELPC/MiCAN cited several federal cases in support of their request, and they argued that these analyses can provide valuable information for decisionmakers.

In response to Enbridge's claim that the Commission's MEPA analysis should not include construction of the proposed utility tunnel, ELPC/MiCAN asserted that "the tunnel is a pipeline fixture pursuant to Act 16, and the construction of the tunnel must be considered in the MEPA analysis." ELPC/MiCAN's reply brief, p. 17. Additionally, ELPC/MiCAN contended that Enbridge: (1) failed to address Mr. Erickson's and Mr. Ponebshek's testimony that construction of the Replacement Project will produce GHGs, (2) did not deny that GHGs cause climate change, and (3) did not rebut ELPC/MiCAN's *prima facie* case regarding the negative impact of the GHGs produced by the Replacement Project.

ELPC/MiCAN stated that the Associations "repeat Enbridge and Staff's arguments that the Proposed Project does not pollute, impair, or destroy natural resources. [ELPC/MiCAN] addressed the flaws in those arguments in their opening brief and in reply to Enbridge and Staff's opening briefs." ELPC/MiCAN's reply brief, p. 22.

In conclusion, ELPC/MiCAN asserted that “[s]hut[ting] down the Dual Pipelines and not building the tunnel is a feasible alternative Enbridge should have analyzed. On the record evidence before it, this Commission must conclude that the [Replacement] Project violates MEPA and deny Enbridge’s Act 16 application.” ELPC/MiCAN’s reply brief, p. 25.

6. Michigan Environmental Council, National Wildlife Federation, and Tip of the Mitt Watershed Council

According to the MEC Coalition, “Enbridge declares that the public need [for the Replacement Project] has been conclusively determined based on the language of the Agreements.” MEC Coalition’s reply brief, p. 6 (footnote omitted). The MEC Coalition disagreed, explaining that “the Agreements were predicated on and bolstered by analyses and reports narrowly tailored to conclude that continued reliance on light crude oils and natural gas liquids (NGLs), as well as the current route, were most appropriate.” *Id.* In addition, the MEC Coalition stated that the Agreements do not consider environmental harm that could occur outside the Straits or Great Lakes. Moreover, the MEC Coalition argued that “the conclusions about public need in these Agreements were drawn before any thorough planning and investigation into this project were completed.” *Id.*, pp. 6-7.

The MEC Coalition also noted that the Alternatives Analysis was completed five years ago and the report failed “to look at energy alternatives[;] instead the focus was on alternative *methods* of moving the same commodities in the same quantities.” MEC Coalition’s reply brief, p. 7 (emphasis in original) (citing Exhibit ELP-24). The MEC Coalition contended that another alternatives analysis was conducted after the execution of the First Agreement and it also failed to consider alternative pipeline routes or energy alternatives. The MEC Coalition asserted that the Agreements and the Alternatives Analysis are outdated and conclusory and, therefore, cannot be

relied upon. The MEC Coalition requested that the Commission conduct an independent Act 16 analysis of public need.

The MEC Coalition disputed Enbridge's claim "that the State Legislature has preemptively determined the need for this project by passing Public Act 359." MEC Coalition's reply brief, p. 9. The MEC Coalition asserted that Act 359 did not preapprove the Replacement Project. Rather, the MEC Coalition noted that, according to Section 14d(g) of Act 359, the constructing entity, Enbridge, must obtain all required governmental approvals for the Replacement Project, which includes the Commission's approval of the company's Act 16 application. Further, the MEC Coalition asserted that the 1953 order does not preclude the Commission from considering the public need for the Replacement Project. The MEC Coalition stated that "[e]ven though the 1953 Order recognized at that time a benefit to the proposed Lakehead project, that does not permanently bind this Commission to that conclusion in an application for a new project." MEC Coalition's reply brief, p. 11.

In addition, the MEC Coalition asserted that the Replacement Project will have an adverse impact on archaeological and cultural resources. The MEC Coalition noted that SHPO has recognized that the Straits are an important cultural area for the Tribes and recommended "not moving forward with permit approvals until further research is completed to provide baseline cultural resources data." *Id.*, p. 49 (quoting Exhibit BMC-40, p. 3). Therefore, the MEC Coalition posited that the Commission lacks sufficient information to determine that the route is reasonable.

Turning to the MEPA analysis, the MEC Coalition contended that the "Staff acknowledge and identify the [environmental] risks but disagree with ELPC and the Tribes regarding their significance; Enbridge simply asserts these risks do not exist." MEC Coalition's reply brief, pp. 16-17. The MEC Coalition asserted that the environmental risks associated with the

construction and operation of the Replacement Project have not been adequately analyzed or addressed and, as a result, the Commission lacks sufficient information to make an informed decision regarding the MEPA analysis for Enbridge's Act 16 application. Additionally, the MEC Coalition argued that the tunnel design results in a risk for catastrophic explosion and a release of Line 5 products into the Straits. The MEC Coalition contended that the Staff and Enbridge have failed to provide a scientific demonstration that there is no risk of explosion and that the tunnel will prevent a release of Line 5 products. The MEC Coalition stated that the Staff's assurance that it will continue to evaluate the environmental risks in future discussions with Enbridge, MSCA, and PHMSA is insufficient.

Next, the MEC Coalition pointed to the Staff's list of 10 potential environmental concerns with the Replacement Project "that could 'pollute, impair, or destroy natural resources,' as testified to by Staff Witness Ms. Kathleen Mooney." MEC Coalition's reply brief, p. 20 (quoting 12 Tr 1848-1850). The MEC Coalition stated that the:

Staff accordingly admit that "the status of the Company's plans and current stage of the project prevents a final comprehensive evaluation of the overall effectiveness of the mitigation plans." This lack of information is an unmovable obstacle blocking the Commission's required MEPA review; as a result, the Commission should not approve Enbridge's application.

MEC Coalition's reply brief, p. 21 (quoting Staff's initial brief, p. 75).

Furthermore, the MEC Coalition argued that the Staff relies too heavily on Enbridge to address potential environmental impairments that are not addressed by the permitting process. Specifically, the MEC Coalition contended that the Staff requested that the Commission approve Enbridge's Act 16 application with conditions, "including 'a requirement that the Company commit to finalize its impairment mitigation plans to satisfy all local, state, and federal permitting requirements and to address potential environmental impairments from construction identified in

Staff's testimony.'" MEC Coalition's reply brief, p. 22 (quoting Staff's initial brief, pp. 125-126).

The MEC Coalition asserted that the Staff's request for these conditions is "especially telling: they are required because none of these risks has yet been incorporated into Enbridge's existing mitigation plans." MEC Coalition's reply brief, pp. 22-23 (footnote omitted).

The MEC Coalition also disputed Enbridge's and the Staff's evaluation of GHG emissions. According to the MEC Coalition, "Enbridge argues that the amount of GHG emissions will be the same as they currently are upon completion of the replacement project because 'the service furnished on Line 5 will remain unchanged,' and therefore 'the project is not likely to have the effect of polluting, impairing, or destroying natural resources.'" MEC Coalition's reply brief, p. 32 (quoting Enbridge's initial brief, p. 33). Regarding the Staff's evaluation, the MEC Coalition asserted that the Staff downplays the GHG emissions associated with the Replacement Project, stating that, according to the Staff, the emissions are "typical for a project of this scope." *Id.* (quoting Staff's initial brief, p. 82). The MEC Coalition reiterated that the construction and operation of the Replacement Project, along with consumption of the products transported by the Straits Line 5 segment, will result in GHG emissions, which exacerbate climate change and impair, pollute, and destroy Michigan's natural resources.

Regarding feasible and prudent alternatives to the Replacement Project, the MEC Coalition asserted that pursuant to MEPA case law, alternatives need not be limited to those put forward by the applicant. *Id.*, pp. 37-38 (citing *Wayne Co Dep't of Health, Air Pollution Control Div v Olsonite Corp*, 79 Mich App 668, 703; 263 NW2d 778 (1977); *In Re: Wetlands Act Appeal of Kuras Properties, Inc*, order of the Michigan Natural Resources Commission, entered November 14, 1990 (File No. 88-6-5W), p. 5). The MEC Coalition stated that "if the Commission is to adequately consider alternatives under MEPA consistent with its April 2021 Order, it must

consider an alternative in which hydrocarbons are *not* shipped through the tunnel.” MEC Coalition’s reply brief, p. 40 (emphasis in original). The MEC Coalition asserted that the State of Michigan’s “dismissal of the federal lawsuit to enforce the Notice of Revocation and Termination, Enbridge’s pending federal lawsuit against the state, and Canada’s invocation of the dispute resolution provisions of Article IX of the 1977 Transit Treaty to dismiss the no-pipeline alternative does not prove that a no-pipeline alternative is infeasible.” MEC Coalition’s reply brief, pp. 40-41. Rather, the MEC Coalition explained that it is possible that the State of Michigan could pursue an effort to shut down the Straits Line 5 segment, Enbridge may not prevail in its federal lawsuit, and binding arbitration between the U.S. and Canada could result in a shutdown of Line 5.

The MEC Coalition noted that Enbridge and the Staff argue that there are no feasible and prudent alternatives to the Replacement Project because Michigan citizens and businesses are dependent upon the products shipped on Line 5. The MEC Coalition disagreed, asserting that the intervenors have “presented evidence that customers can procure the products that Line 5 transports via other modes of transport or through electrification.” MEC Coalition’s reply brief, pp. 42-43. The MEC Coalition asserted that Enbridge failed to persuasively rebut this evidence. *See, id.*, pp. 43-44.

The MEC Coalition also objected to the Staff’s claims that the Replacement Project will not affect Tribal treaty rights and that the Staff “made extensive efforts to seek input from the Tribes” in this case. MEC Coalition’s reply brief, p. 51. The MEC Coalition asserted that the source of the Tribal treaty rights are the 1836 Treaty of Washington and the 1855 Treaty of Detroit. The MEC Coalition averred that these treaties preserve the Tribes’ right to hunt and fish in the territory ceded to the U.S. and that these rights are antecedent to any State or private property rights established after the creation of the treaties. The MEC Coalition contended that in the 1953 order,

the Commission determined the public need for Line 5 without meaningfully consulting with the Tribes. In addition, the MEC Coalition stated that in the 1953 order, “the Commission failed to consider the impacts of approving Line 5 on paramount, pre-existing treaty rights in areas of the ceded territory,” and it “does not preclude the Commission in a new case from considering the impacts of extending Line 5’s operation in the ceded territory by relocating the Straits segment in a tunnel.” MEC Coalition’s reply brief, p. 48. The MEC Coalition encouraged the Commission to consider modifying its 1953 order to reflect a consideration of treaty rights and to employ “meaningful and mutually beneficial communication and collaboration” with the Tribes in the Commission’s evaluation of Enbridge’s Act 16 application. MEC Coalition’s reply brief, p. 54 (quoting ED 2019-17); *see also*, MEC Coalition’s reply brief, pp. 51-55.

In conclusion, the MEC Coalition contended that “[i]t is imperative that the Commission review the whole record independently while deciding whether to grant the application.” MEC Coalition’s reply brief, p. 10. In addition, the MEC Coalition noted that pursuant to the APA, the Commission must make specific factual findings to support its final decision. The MEC Coalition asserted that based on the evidence currently on the record, the Commission lacks competent, material, and substantial evidence to approve the Replacement Project under Act 16 and MEPA.

7. Bay Mills Indian Community, The Little Traverse Bay Bands of Odawa Indians, The Grand Traverse Band of Ottawa and Chippewa Indians, and the Nottawaseppi Huron Band of the Potawatomi

Similar to the MEC Coalition, Bay Mills argued that “Act 359 and the Tunnel Agreements do not determine the outcome of any Act 16 criteria, the [MEPA review], or the Commission’s review.” Bay Mills’ reply brief, p. 3. Bay Mills stated that according to Act 359 and the Agreements, any project to replace the dual pipelines will require consent and approval from federal and state agencies, which includes the Commission. In addition, Bay Mills asserted that

the language in Act 359 and the Agreements are not determinative of public need under Act 16; the Commission must perform an independent review and determine whether there is a public need for the Replacement Project.

Bay Mills noted that “[i]n their initial briefs, Enbridge and the Propane Associations suggest that the past actions the State [of Michigan] has taken with respect to the tunnel are to eliminate the risk of an oil spill from Line 5 to the Straits.” Bay Mills’ reply brief, p. 9. Bay Mills contended that:

[a]ssuming there is an environmental risk to the Straits from the dual pipelines and that risk needs to be addressed, it does not necessarily follow that this particular Project is needed. Act 16 and MEPA criteria require the Commission to determine that the public needs the pipeline and that there is no feasible and prudent alternative that causes less environmental harm than the Project. As described in Tribal Intervenor’s initial brief . . . this Project will not meet a public need of alleviating an environmental threat to the Straits because it still presents at least five unacceptable environmental risks

Bay Mills’ reply brief, p. 10 (footnote omitted). Bay Mills reiterated that the five environmental risks are: (1) the route of the Replacement Project threatens cultural resources; (2) the design of the Replacement Project presents a risk of catastrophic explosion; (3) the Replacement Project contributes to climate change and impairs, pollutes, or destroys Michigan’s natural resources; (4) construction of the Replacement Project will impair and pollute the waters of the Great Lakes and may destroy wildlife; and (5) the Replacement Project results in other environmental risks. However, Bay Mills noted that the Commission determined that the other environmental risks could not be included on the record.

In response to Enbridge’s claim that the Replacement Project is necessary so that needed fuel transportation may continue on Line 5, Bay Mills argued that Enbridge presented arguments in its initial brief that are outside the scope of the case. Bay Mills noted that “Enbridge specifically sought to exclude evidence about whether there is a public need for the fuels transported by Line 5

from this case,” and that motion was granted by the ALJ and affirmed by the Commission in the April 21 order, pp. 62-63. Thus, Bay Mills asserted, the Commission must disregard any evidence or argument presented by Enbridge in its initial brief that the Replacement Project is necessary to transport fuels to meet energy needs in Michigan.

Turning to the route of the Replacement Project, Bay Mills reiterated that it has provided extensive evidence that the location of “the [Replacement] Project poses an unacceptable risk to specific cultural and historical sites within that cultural landscape.” Bay Mills’ reply brief, p. 14. Bay Mills restated that the entire Straits area is a place of immense cultural significance and that damage to any part of this landscape is damage to the whole. *See*, Bay Mills’ reply brief, pp. 14-15, 18-24.

Bay Mills also requested that the Commission reject Mr. Yee’s recommendation that the Commission “continue to monitor developments of SHPO and the NWP [Nationwide Permit] 12 review process in terms of Section 106 compliance.” Bay Mills’ reply brief, p. 24 (quoting Staff’s initial brief, p. 115). Bay Mills argued that Mr. Yee is “unqualified to opine on matters pertaining to cultural or historic resources,” he lacks an understanding of the state and federal permit processes, and he reviewed a very limited body of information prior to making a recommendation. Bay Mills’ reply brief, p. 25. Because of these shortcomings in Mr. Yee’s qualifications and testimony, Bay Mills objected to Mr. Yee’s recommendation that the Commission simply monitor the federal permitting process; instead, Bay Mills requested that the Commission accept the Tribes’ concerns at face value as part of the Commission’s Act 16 review.

Regarding the design of the tunnel, Bay Mills asserted that the “Staff and Enbridge inappropriately minimized the inherent risks associated with the Tunnel Project.” Bay Mills’ reply brief, p. 28. Bay Mills reiterated the arguments set forth in its initial brief addressing the risk of an

explosion and argued that “the Commission should conclude that any level of risk associated with such a high magnitude event is unreasonable, unsafe, and should not be routed through the Straits of Mackinac.” Bay Mills’ reply brief, p. 29; *see also, id.*, pp. 29-33.

Bay Mills also restated its concerns regarding the use of X70 pipe in the Replacement Project and the risk of failure at girth welds. Bay Mills asserted that:

Staff attempts to solve this problem by recommending that “low-hydrogen welding procedures [be put] in place for all mainline girth welds; that welding procedures require both preheat and inter-pass temperature requirements; and that the mainline girth welds [be] nondestructively tested using automatic phased array ultrasonic testing methods.” Staff justifies this recommendation because it will require Enbridge to exceed the minimum regulations that are enforceable by PHMSA. This recommendation, however, falls short of negating any risk surrounding girth weld failure in X70 pipelines. Staff is vague in its reference to ultrasonic testing methods as to whether it will record photographs or data that will be maintained for the life of the pipeline and that can be audited. Staff is also vague as to whether it is recommending that only the “main line girth welds” be inspected or all girth welds.

Bay Mills’ reply brief, p. 35 (quoting Staff’s initial brief, pp. 59-60). Bay Mills contended that these measures may reduce the likelihood of a pipeline failure but will not negate the risk and, therefore, the use of X70 pipe contributes to the risk for catastrophic explosion in the tunnel.

Bay Mills reiterated that there will be ignition sources in the tunnel, and Enbridge and the Staff are overly reliant on faulty ventilation and warning systems to detect and prevent an explosion. *See*, Bay Mills’ reply brief, pp. 37-41. Bay Mills restated that Class 1 Division 1 electrical specifications are necessary to prevent electrical ignition of a vapor cloud in the tunnel. Additionally, Bay Mills contended that the new pipeline will be capable of transporting a larger volume of fuel products. Bay Mills asserted that as a result, “[t]he effect of an explosion could be greater if the capacity of the replacement pipeline is increased.” *Id.*, p. 42. Finally, on the issue of design, Bay Mills argued that the Commission cannot adequately review the risks presented because the design of the Replacement Project is not yet final and, thus, important safety issues are

still unclear. Consequently, Bay Mills contended that Enbridge's Act 16 application is incomplete and should not be approved.

Regarding the MEPA analysis, Bay Mills asserted that the construction and operation of the Replacement Project will impair, pollute, or destroy Michigan's natural resources that are also protected by treaty rights. *See*, Bay Mills' reply brief, pp. 52-59. Bay Mills contended that "Enbridge and Staff err in calculating—and failing to calculate—emissions from the construction and operation of the [Replacement] Project, as well as from the burning of the fuels transported by the [Replacement] Project." Bay Mills' reply brief, p. 47. Bay Mills argued that these GHG emissions contribute to climate change and that the emissions pollute, impair, and destroy Michigan's natural resources that are of critical importance to Tribal Nations, including fish, wild rice, loons, and sugar maples. Bay Mills requested that the Commission conduct an independent investigation of all the potential environmental impacts of the Replacement Project.

Next, Bay Mills reiterated that the no pipeline scenario is the most feasible and prudent alternative to the Replacement Project because it causes the least amount of impairment to, and destruction of, natural resources. Bay Mills asserted that the Commission is not limited to the alternatives offered by Enbridge or to alternatives that the Commission has the specific authority to implement; "[r]ather, the inquiry is about whether a reasonable and prudent alternative exists that will avoid or lessen the environmental harm threatened by the proposal." Bay Mills' reply brief, p. 60. Bay Mills averred that the State of Michigan continues its effort to shut down the dual pipelines, which "underscore[s] the importance of considering the no pipeline alternative." *Id.*, p. 64.

According to Bay Mills, the Staff claims that if Enbridge's Act 16 application is denied and the Replacement Project is not constructed, the dual pipelines will continue to operate in the Straits. Bay Mills stated that:

it is true that it is not certain that the dual pipelines will cease operating if the [Replacement] Project is denied. Enbridge may remain steadfast in its stubborn refusal to comply with Governor Whitmer's Revocation and Termination and perpetuate the risk it has created in the Straits. But that uncertainty does not change the fact that Enbridge could choose to cease operations and not build a tunnel. Enbridge's refusal to comply does not define the contours of the legal analysis.

Bay Mills' reply brief, p. 67.

Finally, Bay Mills argued that the Staff's description of the tribal consultation process is inaccurate and that the process itself did little to further the objectives of ED 2019-17. Bay Mills stated that "nothing in the Staff's testimony or in its briefing demonstrates how Staff put to use the extensive expert knowledge shared with Staff by the Michigan Tribes." Bay Mills' reply brief, p. 68. Bay Mills asserted that the consultation process should have been a dialogue between governments for the exchange of ideas and to find common ground, but the "Staff's testimony reveals almost no points of agreement or deference to sovereign nations." *Id.*, pp. 68-69. However, Bay Mills acknowledged that because this is a contested case and the parties are participating as litigants, the parties' ability to engage in meaningful dialogue has been hampered.

Bay Mills objected to the Staff's reliance on Mr. Yee to ensure that the Commission has complied with ED 2019-17. Bay Mills reiterated that Mr. Yee lacks experience with Tribal matters and the consultation process; he failed to properly review the documents, treaties, and comments relating to the consultation process; and he was not actively engaged in the consultation process. *See*, Bay Mills' reply brief, pp. 71-72. As a result, Bay Mills asserted that the views of the Tribal nations have not been fully heard or understood, and the Commission lacks a complete record on which to decide Enbridge's Act 16 application. In conclusion, Bay Mills requested that

the Commission grant Bay Mills' petition for rehearing and asked that the Commission reverse its ruling on the motions to strike. *See*, Bay Mills' reply brief, p. 73.

V. REOPENING OF THE RECORD TO RECEIVE ADDITIONAL EVIDENCE

In the July 7 order, the Commission noted that "when an application is filed pursuant to Act 16, the Commission must determine whether: (1) the applicant has demonstrated a public need for the proposed pipeline system, (2) the project is designed and routed in a reasonable manner, and (3) the project meets or exceeds current safety and engineering standards." July 7 order, pp. 7-8 (citing the March 7, 2001 order in Case No. U-12334, pp. 14-17). For the second prong of the Act 16 analysis, the Commission found that:

given that at least a portion of Enbridge's justification for the proposed tunnel and pipeline project is to alleviate environmental concerns connected with the dual pipelines, the Commission must have sufficient evidence on the record regarding the current condition, maintenance, and safety of the dual pipelines and the future maintenance and safety of the dual pipelines in order to effectively determine whether the tunnel and pipeline segment proposed for the Replacement Project are designed and routed in a reasonable manner, and whether the proposed Replacement Project fulfills the alleged purpose of reducing the environmental risk to the Great Lakes posed by the dual pipelines. Although there is information on the record regarding the current condition, maintenance, and safety of the dual pipelines and the future maintenance and safety of the dual pipelines, additional evidence must be filed in the record for the Commission to complete prong (2) of its Act 16 analysis.

July 7 order, pp. 8-9.

The Commission noted that in the First Agreement, Enbridge was to provide the State of Michigan with a copy of a report that was required by paragraphs 81-83 of the federal consent decree. The Commission stated that "the federal consent decree cited in the First Agreement, the subsequent modifications to the federal consent decree noted in Exhibit S-8, and the Consent Decree Report cited in Exhibit A-8 have not been provided on the record in this case." July 7 order, p. 25. In addition, the Commission found that the following items required by the First

Agreement were not provided on the record: (1) additional technologies to detect leaks or coating damage to the dual pipelines that were not discussed in the Consent Decree Report and (2) options to mitigate the risk of damage from an anchor strike to the dual pipelines.

Pursuant to the terms of the Second Agreement, the Commission stated that “Enbridge has implemented near-term measures to enhance the safety of Line 5 and plans to continue these measures; however very few details describing these measures have been provided on the record in this case.” July 7 order, p. 25. Additionally, the Commission found that according to the Second Agreement, “the State of Michigan planned to install radar technology to . . . determine whether SAWC [Sustained Adverse Weather Conditions] exist [in the Straits]. The Commission finds that there is no information on the record confirming whether the radar technology was installed, if it is in use, and whether information has been gleaned from the radar technology and shared with Enbridge.” *Id.* Furthermore, the Commission noted that in the Second Agreement, Enbridge agreed to conduct a close interval survey (CIS) of the dual pipelines in 2018 and every two years thereafter. And in the Second Agreement, the Commission stated that Enbridge agreed to provide up to \$200,000 for the installation of video cameras to assist the U.S. Coast Guard in monitoring vessel activity in the Straits. The Commission found that the record contains no information about whether the CISs have been performed or if the video cameras were installed at the Straits.

Next, the Commission noted that Appendix 1 to the Third Agreement was not attached to the agreement in Exhibit A-1. The Commission stated that Appendix 1 “contains specific details regarding the company’s enhanced inspection regime for the dual pipelines” July 7 order, p. 26. In addition, the Commission found that “Enbridge’s visual inspection of the coatings on the dual pipelines, the company’s work plan, and the number and location of repaired areas of bare metal have not been provided on the record in this case. Furthermore, the results of Enbridge’s

biennial inspections to verify that no unsupported spans exceed the specified maximum have not been provided on the record in this case.” *Id.* The Commission also determined that the results of Enbridge’s biota investigations on the dual pipelines were not provided on the record.

The Commission found that the information and documents discussed above are crucial to developing a full record for the second prong of the Act 16 analysis. Therefore, pursuant to Mich Admin Code, R 792.10436 (Rule 436) of the Commission’s Rules of Practice and Procedure, the Commission determined that the record in this case should be “reopened for Enbridge to file the aforementioned information and documents, and any other relevant evidence regarding the current condition, safety, and maintenance and the future safety and maintenance of the dual pipelines because this evidence ‘is necessary for the development of a full and complete record.’” July 7 order, p. 27 (quoting Rule 436(1)).

For the third prong of the Act 16 analysis, the Commission must determine whether the Replacement Project meets or exceeds current safety and engineering standards. The Commission noted that according to Enbridge, “the likelihood of a release of Line 5 products into the tunnel is 0.000001. However, the Commission finds that Enbridge did not provide record evidence of the data and methodology used to calculate the Replacement Project’s alleged one in one million risk of release, and therefore the parties and the Commission are unable to review the calculation.” July 7 order, p. 45. In addition, the Commission found that it is necessary for Enbridge to provide, on the record, “information regarding the feasibility of exceeding the minimum OSHA [U.S. Occupational Safety and Health Administration] standards and designing the electric equipment in the tunnel to Class 1, Division 1 or other methods of reducing the risk of ignition” in the tunnel. *Id.* The Commission also determined that the record lacks data and information about the concrete lining of the tunnel and its ability to withstand the effect of a high-pressure air impact from an

explosion. Furthermore, the Commission noted that “there is no information on the record regarding the procedure for full replacement of a PCTL segment (or segments) in the event of severe cracking or acute damage from a high-intensity fire or explosion and how this replacement procedure might affect the Line 5 pipe segment within the tunnel.” *Id.*, p. 46. Finally, the Commission directed Enbridge to file a cohesive explanation of its planned CPM, leak detection, and shut-down systems for the Replacement Project.

In conclusion, the Commission stated that “[t]he record shall be reopened to receive testimony, exhibits, and rebuttal, but no briefing will be permitted.” *Id.*, p. 47.

On August 5, 2022, Enbridge, the Associations, and MLDC (joint petitioners) filed in this docket a joint petition for rehearing of the July 7 order (August 5 joint petition for rehearing). The joint petitioners noted that in the July 7 order, the Commission reopened the record in this case to receive additional evidence, but the Commission stated that the parties would not be permitted to file further briefs. The joint petitioners asserted that, pursuant to Rule 437, the July 7 order results in unintended consequences.

The joint petitioners argued that “the plain language of Rule 434(2) of the Commission’s Rules of Practice and Procedure [Mich Admin Code, R 792.10434(2)] vests the parties to a contested case the right (at their discretion) to file briefs and reply briefs and that rule does not contain language which might provide the Commission with latitude to deny the parties that right.” August 5 joint petition for rehearing, p. 3. In addition, the joint petitioners asserted that the Commission’s decision to deny the parties an opportunity for briefing is a change to Rule 434 that was not adopted through the formal rulemaking process as set forth in the APA. Moreover, the joint petitioners stated that, “on appeal, parties to this proceeding may argue that their free speech, due process, or other substantive rights have been violated by not being allowed to brief the

Supplemental Record, presenting a reviewing court with one or more bases to reverse the Commission's final order as violating the APA or the protections afforded to parties by other laws. See MCL 24.306.” August 5 joint petition for rehearing, pp. 3-4. As a result, the joint petitioners requested that the Commission grant rehearing of the July 7 order and allow the parties to provide limited briefing on the evidence submitted to the reopened record.

On August 22, 2022, MSCA and Bay Mills filed in this docket responses stating that they have no objection to the relief sought in the August 5 joint petition for rehearing.

In the September 8 order, the Commission stated that it:

does not find any error or unintended consequences associated with the decisions in the July 7 order. Noting that Rule 434(2) contains the caveat “unless otherwise provided,” the Commission disagrees with the joint petitioners’ interpretation of the rule. However, the Commission observes that the joint petitioners’ request is reasonable, and finds that, pursuant to the agency’s authority as presiding officer, the relief requested should be approved.

September 8 order, p. 5. Thus, the Commission granted the joint petitioners’ request and permitted the parties to file, by May 5, 2023, initial briefs of no more than 30 pages that specifically address the evidence submitted to the reopened record. In addition, the Commission stated that the parties may file, by May 19, 2023, reply briefs of no more than 25 pages that specifically address the evidence submitted to the reopened record.

On April 25, 2023, Bay Mills filed an application for leave to appeal ALJ Saunders’ April 11 and 12, 2023 rulings admitting evidence into the reopened record and a brief in support (April 25 application for leave to appeal and Bay Mills’ brief in support of the April 25 application for leave to appeal, respectively). Bay Mills argued that MRE 702 and 703 require that expert opinions be supported by sufficient facts and data on the record and, in previous cases, the Commission has granted motions to strike expert testimony and exhibits that do not comply with MRE 703.

In Bay Mills' opinion, Mr. Bott's testimony on behalf of Enbridge and Exhibit A-32 do not "[provide] the data and methodology used to calculate the [one in one million] risk of release and, crucially, the parties and the Commission are still unable to review the calculations and conclusions asserted in the exhibit." Bay Mills' brief in support of the April 25 application for leave to appeal, p. 12. Bay Mills noted that Mr. Bott based his analysis on four prior Enbridge release incidents, but the three databases that he consulted are owned by Enbridge and are non-public. In addition, Bay Mills argued that the record does not include the following information:

- Facts and analysis to support Mr. Bott's inclusion of the June 22, 2013 release, the March 11, 2016 release, the February 27, 2017 release, and the January 9, 2018 release identified in Table 1 including, but not limited to, the specific location, any other relevant causes beyond the stated "primary cause," and the analyses performed to determine whether the release is applicable to the tunnel conditions;
- Facts and analyses to support the exclusion of any other Enbridge release during the stated timeframe; and
- The actual location of the stated 10,000 km [kilometers] of transmission pipeline relied on in the calculation, including the geographic location (i.e., Canada and/or the United States) and the environmental location (i.e., buried pipe, above-ground, in water).

Id., p. 11. Bay Mills asserted that reopening the case has changed nothing because "Enbridge still has not provided the data and methodology used to calculate the risk of release." *Id.*, p. 12.

Therefore, Bay Mills contended that Mr. Bott's testimony and exhibit that address this issue should be stricken.

Next, Bay Mills asserted that according to Enbridge, Mr. Godfrey's testimony and his probability of failure (POF) report in Exhibit A-29 purport to include an analysis regarding the POF of the tunnel project. However, Bay Mills stated that "[n]one of the calculations that support Mr. Godfrey's opinions on the probability of a Line 5 failure are supported by facts and data in the record." Bay Mills' brief in support of the April 25 application for leave to appeal, p. 13.

Specifically, Bay Mills noted that Mr. Godfrey claimed to calculate the POF for five scenarios. However, for Scenarios 1 and 2, Bay Mills asserted that Mr. Godfrey notes one actual failure that he deemed relevant in the BOEM data but “the underlying report and charted information lack any underlying facts or data about the ‘1 failure’ used to calculate a failure frequency.” *Id.* Bay Mills also contended that according to Mr. Godfrey, he consulted three European data sources for Scenarios 1 and 2, but he does not reveal the data that he reviewed from each source. Bay Mills made the same complaint with respect to the PHMSA data that Mr. Godfrey reviewed for Scenarios 3-5, as well as the ignition model that he applied. *Id.*, p. 14.

Similarly, Bay Mills stated that the failure modes and effects diagnostic analysis (FMEDA) results in Appendix A of the probability of failure (POF) report, *Enbridge Line 5 Great Lakes Tunnel Project: Probability of Failure Analysis* (POF Report), “are incomplete and lacks [sic] any description or indication of the ‘standards and integrity management program’ that was considered in reaching the stated conclusion.” Bay Mills’ brief in support of April 25 application for leave to appeal, p. 14 (quoting Exhibit A-29, p. 3). In addition, Bay Mills argued that the failure history supplied to Mr. Godfrey by Mr. Bott for use at the FMEDA workshop should be disregarded because it was not entered into the record and its existence was only revealed during the evidentiary hearing. *Id.*, p. 15. Thus, Bay Mills disagreed with ALJ Saunders’ finding that Enbridge satisfied the requirements of the MRE and argued that Mr. Godfrey’s testimony and exhibit on this issue should be stricken.

On May 9, 2023, Enbridge filed a response to Bay Mills’ April 25 application for leave to appeal (May 9 response) and a brief accompanying its response. Enbridge stated that Bay Mills’ April 25 application for leave to appeal should be denied because pursuant to Rule 433(2), “[g]ranting the Application cannot possibly ‘advance a timely resolution of the proceeding,’ given

that the proceeding is already in its final stage. Nor it [sic] is granting the Application necessary to ‘prevent substantial harm to the appellant or the public-at-large’ because all issues raised by Bay Mills in its Application can be (and should have been) raised in Bay Mills’ initial brief.”

Enbridge’s May 9 response, p. 2 (quoting Rule 433(2)) (footnote omitted).

In Enbridge’s opinion, ALJ Saunders correctly determined that Mr. Godfrey’s and Mr. Bott’s testimony and exhibits satisfy the requirements of MRE 703 and the Commission’s evidentiary standards. Enbridge asserted that the record demonstrates that “Mr. Godfrey is a leading expert in integrity management, regulatory compliance, standards development, pipeline operations, and design and construction.” Enbridge’s brief in response to the April 25 application for leave to appeal, p. 9 (footnote omitted). In addition, Enbridge contended that there are sufficient facts and data on the record to support Mr. Godfrey’s opinion. *See, id.*, pp. 10-15 (citing Exhibit A-29, pp. 4-12; Exhibit A-32; Exhibit BMC-69, p. 4; 17 Amended Tr 2449-2450). Furthermore, Enbridge argued that Bay Mills’ objection to Mr. Godfrey’s opinions based on MRE 702 was not raised in Bay Mills’ motions to strike and is, therefore, improperly preserved and considered waived. Enbridge stated that “[e]ven if [the objection is] not waived, Bay Mills has not demonstrated that MRE 702 is a basis for objection.” Enbridge’s brief in response to the April 25 application for leave to appeal, p. 17.

Regarding Mr. Bott’s testimony and Exhibit A-32, Enbridge asserted that ALJ Saunders properly admitted the testimony and exhibit into the record because the facts and data relied upon by Mr. Bott were provided in the record. *See*, Enbridge’s brief in response to the April 25 application for leave to appeal, pp. 18-20. In addition, Enbridge contended that according to Mr. Bott, the data he supplied in support of his opinion and calculation is information “kept in Enbridge’s business records in the ordinary course of its business.” *Id.*, p. 18.

Finally, Enbridge argued that “[e]ven if it were determined that MRE 703 were not completely satisfied, Mr. Godfrey’s and Mr. Bott’s testimony and exhibits are still admissible. Commission Rule 427(1) and MCL 24.275 affirmatively provide that ‘an agency may admit and give probative effect to evidence of a type commonly relied upon by reasonably prudent men in the conduct of their affairs.’” Enbridge’s brief in response to the April 25 application for leave to appeal, pp. 20-21 (quoting MCL 24.275). In any event, Enbridge asserted that Mr. Godfrey’s and Mr. Bott’s testimony and exhibits comply with MRE 703 and requested that the Commission deny Bay Mills’ April 25 application for leave to appeal.

The Commission finds that granting Bay Mills’ April 25 application for leave to appeal will resolve purported issues regarding the sufficiency of evidence submitted into the record. Thus, the Commission finds that Bay Mills’ April 25 application for leave to appeal should be granted. If the Commission grants review, “it will reverse an ALJ’s ruling if the Commission finds that a different result is more appropriate.” March 17, 2022 order in Case No. U-21090, p. 14 (citing, June 5, 1996 order in Case No. U-11057, p. 2; May 19, 2020 order in Case No. U-20697, p. 9); *see also*, November 10, 2011 order in Case No. U-16230, pp. 7-8; October 5, 2018 order in Case No. U-20165, p. 17.

Regarding Bay Mills’ motion to strike Mr. Godfrey’s testimony and Exhibit A-29, ALJ Saunders stated that:

[he] think[s] that both the parties have presented compelling arguments in this matter and, frankly, [he does] agree with Bay Mills’ position that there are some issues in relation to some of the data and the facts that are relied upon in terms of not being abundantly clear, however, [he] think[s] that Mr. Godfrey has identified a good portion, albeit voluminous, of what it was that [Mr. Godfrey] relied upon, and [he] think[s] that that is just enough to get over the threshold of MRE 703, however, again, this is up to the Commission to decide the weight to give to this testimony in this matter

15 Tr 2060-2061. The Commission has reviewed the testimony, Exhibit A-29, the motion, and the response in this matter and agrees with ALJ Saunders. The Commission finds that Mr. Godfrey has expertise in the areas of pipeline manufacturing, operations, integrity management, consulting, and asset integrity services. 17 Amended Tr 2434. Mr. Godfrey testified regarding the basis of his POF opinions and calculations contained in the POF Report. 17 Amended Tr 2436. In addition, Mr. Godfrey stated that the data he relied upon for the POF Report is collected by PHMSA pursuant to 49 CFR 195.50-54, which requires the reporting of hazardous liquid pipeline accidents. 17 Amended Tr 2449-2450. Furthermore, the Commission finds that the data contained in Exhibit A-29 is adequate for the Commission to determine that Enbridge has sufficiently demonstrated the methodology of its calculations and opinions. Therefore, the Commission finds that ALJ Saunders' April 11 ruling denying Bay Mills' motion to strike should be affirmed.

In his April 11, 2023 ruling denying Bay Mills' motion to strike Mr. Bott's testimony and Exhibit A-32, ALJ Saunders granted Bay Mills' motion in part and denied it in part. Bay Mills argued that the databases on which Mr. Bott relies for his one in one million calculation are not publicly accessible and, therefore, Enbridge has not provided the data and methodology to support the calculation. Enbridge responded, asserting that Mr. Bott relied on data that is kept in the ordinary course of business and that "it is evidence of a type commonly relied upon by reasonably prudent men in the conduct of their affairs." Enbridge's brief in response to the April 25 application for leave to appeal, p. 20. In addition, Enbridge asserted that if the entirety of the business record were to be admitted into evidence, it "would result in mountains of data being introduced in the record that was neither relevant nor relied upon." *Id.* Furthermore, Enbridge contended that although the company provided the data, analysis, and explanation of the one in

one million calculation, Bay Mills was entitled to make additional discovery requests regarding the data but chose not to.

The Commission finds that Mr. Bott's testimony and Exhibit A-32 directly respond to the Commission's request for additional information in the July 7 order regarding the one in one million calculation. Mr. Bott testified that he has "knowledge of and access to certain information and data requested by the Commission's [sic] in its July 7, 2022 Order regarding the Line 5 replacement segment to be located in the Great Lakes Tunnel Project (Project)." 16 Tr 2316. Accordingly, the Commission finds that Mr. Bott relied on data kept in the ordinary course of business pursuant to Rule 427(1) and MRE 803. In addition, the Commission finds that the data and analysis in Exhibit A-32 is adequate for the Commission to determine that Enbridge demonstrated the methodology of the one in one million calculation and the POF as requested in the July 7 order. Therefore, the Commission finds that ALJ Saunders' denial of Bay Mills' motion to strike Mr. Bott's testimony and Exhibit A-32 should be affirmed.

VI. POSITIONS OF THE PARTIES ON REOPENING OF THE RECORD

A. Direct Testimony on Reopening of the Record

1. Enbridge Energy, Limited Partnership

Ashley Rentz testified that she is a paralegal for Enbridge. She sponsored Exhibit A-28. Ms. Rentz stated that the documents contained in Exhibit A-28 are prepared and maintained in the normal course of business by Enbridge and are responsive to portions of the July 7 order. 15 Tr 2069.

Mr. Godfrey stated that he is a Senior Principal Consultant with the Integrity Solutions and Compliance Department within the Energy Services Group of DNV GL USA, Inc. (DNV). Mr. Godfrey sponsored Exhibit A-29, which includes the POF Report. Mr. Godfrey noted that the

POF Report was authored by himself and other DNV employees. 17 Amended Tr 2435.

Mr. Godfrey stated that in performing his analysis, he relied upon the materials in Appendix B attached to his testimony (materials supplied by Enbridge) and exhibits sponsored by Mr. Dennis.

Mr. Godfrey testified that his analysis is based on the FMEDA, which is “a risk assessment methodology that considers the different ways in which a failure can occur and then reviews the means for detecting and preventing failures. When applied to [the] Line 5 Replacement Segment, the specific question addressed was what failure mechanisms could exist that could result in a pipeline failure?” 17 Amended Tr 2436. He explained that the FMEDA was presented as a virtual workshop in November 2021 and five potential failure scenarios were analyzed. He opined that the POF of the replacement pipe segment is extremely low, equating to “less than one failure in over 663,000 years” and that the probability of ignition in the event of a release of Line 5 products is “extremely remote . . . equivalent to approximately 6 in a billion chances per year or one ignition event every 169 million years.” 17 Amended Tr 2437-2438. He stated that these low probabilities reflect the safety factors that the company has incorporated into the design. He further averred that these probabilities are conservative and that the actual failure rate should be an order of magnitude less. He added that the use of Class 1, Division 2 equipment is conservative because under the National Electrical Code (NEC), the tunnel “could be considered an unclassified location” 17 Amended Tr 2439.

Consistent with the ruling on the motion to strike materials in Appendix B, Enbridge filed the following additional testimony on reopening.

Ray Philipenko testified that he is the Director of TIS Pipeline Control Systems and Leak Detection for Enbridge. He sponsored Exhibit A-30, which he states “is identical to the information and data previously submitted as Response Nos. 1, 6, and 7 in Appendix B to

Exhibit A-29, the *Enbridge Line 5 Great Lakes Tunnel Project: Probability of Failure Analysis* sponsored by Witness John Godfrey filed on October 21, 2022.” 16 Tr 2255-2256.

Mr. Dennis sponsored Exhibit A-31, which he states is “identical to the information and data previously submitted as Response Nos. 2, 3, 4, 5, 9, and 10 in Appendix B to Exhibit A-29, the *Enbridge Line 5 Great Lakes Tunnel Project: Probability of Failure Analysis* sponsored by Witness John Godfrey filed on October 21, 2022.” 15 Tr 2087.

Steven Bott testified that he is the Manager of LP Pipeline Integrity Business Planning for Enbridge. He sponsored Exhibit A-32, which he states is “identical to the information and data previously submitted as Response No. 8 in Appendix B to Exhibit A-29, the *Enbridge Line 5 Great Lakes Tunnel Project: Probability of Failure Analysis* sponsored by Witness John Godfrey filed on October 21, 2022.” 16 Tr 2316.

2. The Commission Staff

Mr. Warner testified regarding the Staff’s review of the filings made by Enbridge in response to the July 7 order, and he sponsored Exhibits S-31 through S-36. He stated that the Staff analyzed the sufficiency of the information. 18 Tr 2790.

Mr. Warner asserted that Enbridge responded to all the evidentiary requests made by the Commission in the July 7 order. However, he stated that the Staff also sought additional clarifying information through two successive rounds of discovery served on Enbridge after the company’s filing. The responses supplied by Enbridge are provided by Mr. Warner as Exhibits S-31, S-32, and S-33. He stated that the discovery responses provide additional information on: (1) the POF of the pipeline and the probability of ignition within the proposed tunnel, (2) the leak detection system, (3) the ventilation system, and (4) shutdown procedures. 18 Tr 2792. He noted that the Staff met with PHMSA personnel three times in late 2022 to discuss the discovery responses, as

well as with USACE and MSCA. He added that the Staff also re-initiated discussions with the Tribes and referred to Exhibit S-34, which contains a log of those discussions. He concluded that:

the information provided has reinforced Staff's position that the Replacement Project is a significant improvement over the existing Dual Pipelines. Staff posits that the new information provides further confidence that the project is designed and routed in a reasonable manner in accordance with prong (2), and meets or exceeds current safety and engineering standards in accordance with prong (3) of the Commission's analysis under Act 16.

18 Tr 2793-2794.

3. Bay Mills Indian Community

Mr. Kuprewicz sponsored Exhibits BMC-50 through BMC-60. Mr. Kuprewicz testified that he is responding to the testimony regarding risk. He stated that:

Mr. Dennis, Mr. Bott, and Mr. Godfrey all assign a numeric probability to various events that could cause a pipeline failure, fire, and explosion. This approach to risk assessment, particularly during the permit approval stage, finds no support in federal pipeline regulations. . . . This assignment of probability estimates to known, identified risks during a permitting process is dangerous because it invites complacency. An operator who adopts this approach to the construction and operation of a pipeline will inevitably drive the line toward failure.

17 Amended Tr 2622. He opined that assigning numeric probability values to risks creates a false sense that the project is safe. He stated that federal integrity management regulations appear in 49 CFR 195.452 and he described the history of the development of those regulations.

Mr. Kuprewicz asserted that the regulations adopt a performance-based approach, which requires pipeline operators to use risk assessment to address potential threats and provides guidance for operators to develop their own integrity management programs.

While acknowledging that federal regulations allow pipeline operators to use quantitative risk assessment, Mr. Kuprewicz stated that the type of quantitative risk assessment used in this case (which makes risks appear to be nonexistent) leads to pipeline failure and fails to evaluate threats "on an iterative basis based on sound engineering principles." 17 Amended Tr 2626. He added

that compliance with PHMSA regulations does not ensure that failure will not occur. Moreover, Mr. Kuprewicz described the POF Report as “flawed, misguided, and dangerous,” and he contended that the methodology employed in the report relies on cherry-picking the data.

17 Amended Tr 2627. He also opined that quantitative risk analysis “creates what [he] refer[s] to as a ‘kill threshold,’ or a prescriptive limit on the amount of death or destruction caused by an event. There is no such limit or threshold established in U.S. federal pipeline safety regulations.”

17 Amended Tr 2628. Mr. Kuprewicz noted that Mr. Godfrey relied on data found in the PHMSA database, and he asserted that much of the incident data is provided to PHMSA by pipeline operators and is not verified or regulated.

Turning to a discussion of girth welds and heat-affected zones, Mr. Kuprewicz testified that prudent pipeline operators will exceed the regulations and will radiographically inspect all girth welds before the pipeline is installed. He asserted that for the X70 pipe grade, the heat-affected zone can also be affected, resulting in cracking. Mr. Kuprewicz specifically noted that this pipeline will be installed on rollers to allow it to move and opined that this will place abnormal loading on the girth welds and heat-affected zones. Thus, he contended that the risk of failure should not be dismissed by a probability analysis but, rather, should be addressed according to how conditions will change over the life of the pipe. As in earlier testimony, Mr. Kuprewicz noted that the Joint Industry Report addresses this issue and argued that Enbridge has not taken the issue seriously. *See*, 17 Amended Tr 2632-2634; Exhibits BMC-54, BMC-55, and BMC-56.

Mr. Kuprewicz also asserted that the POF Report ignores the issue of human error, particularly with regard to the CPM system. He stated that the 10-Minute Rule adopted by Enbridge (automatic shutdown 10 minutes after an alarm) will not prevent catastrophe because during previous pipeline ruptures, Enbridge has failed to shut down the pipeline within the

10-minute window. 17 Amended Tr 2637-2638. Mr. Kuprewicz listed several other aspects of Enbridge's design that are vulnerable to human error including data collection from the ILI tools and subsequent analysis, response to the telephone in the above-ground control room, reliance on CPM and historical data, system monitoring, responses to audio and visual alarms, and manual control of the fan plant in the event of fire. 17 Amended Tr 2639-2641. He further stated that it is "a dangerous view to think that any measure would prevent an explosion." 17 Amended Tr 2642. Mr. Kuprewicz asserted that Exhibit BMC-60 illustrates how a false sense of safety is created, and concluded that:

[s]ound engineering and risk assessment principles require that you separate marketing of a product—here, the proposed tunnel—from the engineering risks associated with the project. Combining the two, as Enbridge has done, leads to what [he has] labeled over the decades as "Space Shuttle Syndrome," which as [he] previously testified, refers to what occurs when people ignore or underestimate risk to drive to [sic] a preordained decision to the point where they dismiss or ignore very real risk in favor of going forward with a project.

17 Amended Tr 2643.

Brian J. O'Mara stated that he is the founder and Principal of Agate Harbor Advisors LLC. He testified regarding the ability of the tunnel's concrete structure to withstand a fire and, in the event of the failure of the structure, the likelihood that Line 5 product would overcome the hydrostatic pressure on the pipeline and migrate to the Great Lakes. He sponsored Exhibits BMC-61 through BMC-63. 18 Tr 2668-2669.

Mr. O'Mara stated that, in general:

an explosion will occur if flammable gas or vapors are present in the air of the tunnel at a concentration that is between the Lower Explosive Limit (LEL) and the Upper Explosive Limit (UEL)[sic], and those gasses or vapors are ignited. There are two sources of flammable gasses or vapors that will be present in the tunnel project: the product transported through Line 5, and groundwater with dissolved methane that may infiltrate the tunnel.

18 Tr 2670. He stated that the concrete lining of the tunnel would be severely damaged by a fire or an explosion, particularly in a fuel-rich environment that could result in a fire exceeding 1200°C. Such a fire, he explained, may cause spalling, which occurs when pieces of concrete separate, exposing the steel inside, which is then vulnerable to buckling and failure. 18 Tr 2671-2672.

Mr. O'Mara asserted that:

Enbridge has no active fire suppression system for the Line 5 tunnel and relies only on passive fire-resistant concrete and stopping ventilation. The state of the practice for fire suppression in tunnels includes the use of Fixed Fire Fighting Systems (FFFS) and advanced ventilation systems that can quickly extinguish or limit fires and facilitate the removal of smoke so fire fighters can rescue trapped workers and extinguish fires. FFFS have been retrofitted in tunnels like the Chunnel [Channel Tunnel] and FFFS have proved effective in putting out fires in underwater tunnels in Tokyo, Sydney and Melbourne.

Enbridge states that, in the event of a fire, it will secure the air lock and switch-off the ventilation system to starve the fire of oxygen. This plan ignores the fact that a fire in a tunnel usually reaches its peak temperature within 5 minutes. Crucially, sealing the two ends of the tunnel can lead to internal temperatures greater than if the tunnel portals were not sealed. Enbridge's plan would likely exacerbate the already heat-intense fire.

Even if the tunnel was effectively sealed off, there would be more than 6,500,000 cubic feet of air in the tunnel, which could provide enough oxygen for a fire to burn for well over two hours. Enbridge stated it could lose up to 2 percent of the product shipped (approximately 460,000 gallons) before they detected the release using their pressure and flow monitoring approach. The amount of time before detection could result in a very large pool of product with a limited surface area that could burn for hours or days before it was "starved of oxygen".

18 Tr 2674-2675 (quoting Exhibit A-13, p. 17).

Mr. O'Mara opined that based on his professional experience, Class 1, Division 2 electrical equipment is not sufficient for the Replacement Project. He stated that "Class [1] Division 1 electrical equipment is both feasible and prudent based on the unique tunnel design and associated risks if there is a product release from the pipeline." 18 Tr 2675.

Referring to the existence of methane in the groundwater, Mr. O'Mara explained that methane could thus be introduced into the tunnel during the excavation by the TBM and "indefinitely by the never-ending seepage of groundwater into the tunnel through groundwater infiltration through the joints of the precast concrete tunnel segmented lining" 18 Tr 2675. He stated that the methane could then encounter a spark from any of several potential sources, including maintenance work, static electricity, freezing conditions, or a lightning strike. Mr. O'Mara described a methane explosion as similar to a shotgun blast, which can result in a loss of life. He noted that Enbridge's Geotechnical Data Report (Exhibit MM-4) "indicates that methane was found in 19% of the groundwater samples tested" 18 Tr 2677; *see also*, 18 Tr 2688.

Next, Mr. O'Mara addressed the hydrostatic pressure issue. Noting that Mr. Kuprewicz did not opine on hydraulic questions, Mr. O'Mara stated that he has "experience with tunneling in the Great Lakes with geology similar to the proposed Line 5 tunnel." 18 Tr 2679. He explained that:

[h]ydrostatic pressure is the downward force exerted by gravity from the water, sediment and rock present above the proposed tunnel. The pressure is different at varying points in the proposed tunnel elevation. For example, the hydrostatic pressure is going to be the highest at the lowest depth of the tunnel compared with the pressure that would be present at either end of the tunnel. McMillan Jacobs Associates has estimated in its Technical Memorandum dated May 24, 2021 that the hydrostatic pressure at the deepest part of the tunnel to be 17 bar, which is roughly equivalent to 250 psi [pounds per square inch]. To overcome the hydrostatic pressure at the deepest part of the tunnel, the product would need to be released at a pressure that exceeds 250 psi.

18 Tr 2679-2680. He opined that if a fire caused a breach of the secondary containment system, Line 5 product would migrate into the Straits because the product will be discharged at the operating pressure of the pipeline, which is 1440 psi at the deepest part of the tunnel.

Mr. O'Mara further stated that if the pipeline is severed, product would flow at about 16,000 gallons per minute from the north side, and the flow would continue until it reached the hydrostatic pressure of 250 psi. He added that the pipeline product "would easily jet away the

highly fractured and brecciated rock and sediments overlying the tunnel. Product would move relatively rapidly outward and upward from the pipeline release point as long as the pipeline was flowing, or the product pressure exceeded the hydrostatic pressure.” 18 Tr 2681. He noted that the pipeline product is lighter than water and would “continue to rise until it breaks through the lakebed sediment and enters the water column” where it would “eventually reach the shores of the Straits and be carried far into both Lake Huron and Lake Michigan.” 18 Tr 2682. He added that:

[i]n addition to the migration of the mobile product, there would be an immobile fraction that would remain stuck in the rock and sediments and slowly dissolve into the groundwater, and ultimately the water column, for decades or possibly centuries. Dissolved hydrocarbons are neutrally buoyant and travel with ground water or surface water flow and can travel hundreds of miles when driven by currents and wave action. These immobile product residuals would remain a long-term source of pollution in the Straits.

18 Tr 2682.

Ms. Gravelle responded to the testimony of Mr. Godfrey regarding risk. She stated that a single explosive event would be catastrophic for the citizens of Bay Mills and other tribal nations in the region. She described the Anishinaabe water keepers’ profound connection to the water and stated that however small the chance of a release, any release is catastrophic, which is an issue that is ignored by the POF Report. Ms. Gravelle opined that a release from Line 5 “can only mean loss. A loss of oneself, a loss of one’s past and future, a loss of one’s culture, and a loss of one’s Tribe.” 17 Amended Tr 2611. Thus, she posited that it is essential to protect the Straits from even a single release no matter how unlikely. She stated that Mr. Godfrey’s evidence does not address the perspective of the people who will be directly affected by a spill, however unlikely it is, and That the brunt of such accidents is often borne by indigenous people.

B. Rebuttal Testimony on Reopening of the Record

1. Enbridge Energy, Limited Partnership

Enbridge initially provided testimony from seven witnesses in the rebuttal phase of the reopened case. Two of the witnesses (Dr. Ferrara and Dr. Vitton) are new to the case. One of the witness's testimony (Mr. Eberth) was withdrawn by Enbridge. 17 Amended Tr 2564.

Mr. Bott responded to Mr. Kuprewicz's claim that Enbridge's quantitative risk analysis improperly minimizes the risk of the Replacement Project. He asserted that Enbridge employs a pipeline integrity management program (IMP) and explained that it "uses a 'defense in depth' approach to maintain integrity of the pipeline system. This approach leverages prevention, monitoring, and damage mitigation." 16 Tr 2322. Mr. Bott stated that probability analysis is an assessment tool that allows the operator to determine whether additional prevention measures are required in the design and operation of the proposed pipeline, and it should be conducted prior to construction. He further averred that probability analysis remains an important component of pipeline operation as well.

Mr. Bott asserted that Enbridge's IMP is designed to meet or exceed PHMSA requirements and to be in alignment with API 1160, API 1176, and API 1183. He stated that "[p]robability analysis is used to ensure that the deterministic requirements in 49 CFR 195.452(h) and Enbridge's liquid pipeline IMP procedures provide an adequate level of reliability" and that "probability and/or risk analysis may identify additional integrity actions that are required to maintain the risk to as low as reasonably practicable (ALARP) where deterministic requirements did not achieve the desired level of reliability or where additional preventative measures could further reduce risk." 16 Tr 2323-2324. He added that ILI is another tool for evaluating pipeline integrity that provides detailed information on interacting conditions. Moreover, Mr. Bott testified

that the issue of human error is addressed by Enbridge in three ways: (1) the company maintains a competency management program for pipeline integrity staff as required under Part 195 of the CFR and monitors vendor qualifications, (2) peer review and subject matter expert review is employed in plan development and analysis, and (3) the performance of the IMP is monitored.

In his rebuttal testimony, Mr. Philipenko objected to Mr. Kuprewicz's claim that Enbridge's leak detection system is ineffective. He described Enbridge's approach to leak detection, which involves multiple layers for overlapping and comprehensive protection in different operating scenarios. He explained that:

[t]he CPM systems provide alarms to the Pipeline Controller and the Leak Detection Analyst in the event of a potential leak. The Leak Detection Analyst is located in the control room and provides operational support and root cause analysis for the leak detection alarms generated by the CPM systems. The Leak Detection Department is made up of approximately 40 employees located in Edmonton, Alberta.

16 Tr 2259. Mr. Philipenko contended that the method employed by Enbridge meets or exceeds all applicable engineering standards and regulatory requirements.

Mr. Philipenko asserted that Enbridge's leak detection strategy does not rely on any single technology or human factor and that operational testing of the CPM is part of the company's continuous improvement to ensure optimal performance. Specifically, he explained that Enbridge conducts regular fluid withdrawal tests (removing fluid from a live pipeline system) in order to verify that the CPM alarms are operating as expected and to test the human response as well.

16 Tr 2260-2261. Mr. Philipenko added that pipeline controllers and leak detection analysts undergo rigorous training and are guided by procedures that ensure consistency.

Next, Mr. Philipenko noted that "there are already automatic shut-off valves on each side of the Straits," which close automatically within three minutes of a threshold pressure loss.

16 Tr 2262. He stated that, following the 2010 incident in Marshall, Michigan, Enbridge has

“made significant improvements to the operations of the control center and leak detection system capabilities” 16 Tr 2262. Mr. Philipenko provided a description of the improvements:

Leak Detection Improvements:

- Additional instrumentation to enhance sensitivity & reliability
- Single area of leak detection organizational accountability
- Improvements to existing CPMs with additional statistical alarm analysis
- Implementation of new CPMs and decision support tools
- Industry leading testing strategy, tools and research
- Training enhancements including competency program implementation for leak detection analysts

Control Center Improvements:

- Implementation of a Control Room Management Plan
- Construction of a world-class control room facility
- Management system implementation for effective monitoring and continuous improvement
- Enhanced training program including team training and pipeline simulations
- World class control center interdependent safety culture
- Procedure rationalization, quality management system and procedures management tool
- Implementation of new decision support tools, Leak Detection Alarm Manager (LDAM), Column Separation Management and Controller Portal

16 Tr 2263-2264.

Mr. Philipenko also disputed Mr. Kuprewicz’s claim that historically, Enbridge has not complied with the 10-Minute Rule for shut down. He stated that Mr. Kuprewicz’s concerns fail to recognize that the shut-off valves at either end of the Straits are “fully-automated, pressure-sensitive shutoff valves [that] are not subject to human error because they operate without need for human intervention.” 16 Tr 2264. Mr. Philipenko added that:

[t]he addition of the LDAM system after [the Marshall incident] includes a requirement for the Alarm Response Team (ART) to independently assess each CPM alarm. The ART consists of the Controller, the Senior Technical Advisor (STA) and the Leak Detection Analyst (LDA). Each member of the ART must complete an independent investigation of the pipeline for leak triggers within 10 minutes. To continue operating the pipeline all three members must independently select an invalid assessment. If within 10 minutes no assessment is

completed, or any one of the 3 ART members identify leak triggers, then the LDAM system will request an emergency shutdown of the pipeline system. Additionally, the LDAM system contains an auto shutdown capability, where if an alarm has not been invalidated after 10 minutes, an automated shut down occurs at the 11-minute mark. Given the automated capabilities of the control systems design and LDAM, concerns related to the 10 Minute Rule have been alleviated.

16 Tr 2264-2265. Additionally, he noted that the 10 Minute Rule is “a component of the federal court-approved Consent Decree issued related to the Marshall incident between Enbridge, the United States Department of Justice, and the United States Environmental Protection Agency.” 16 Tr 2265.

Mr. Godfrey responded to Mr. Kuprewicz’s and Mr. O’Mara’s testimony regarding the issues of probability analysis and human error. First, he noted that Mr. Kuprewicz and Mr. O’Mara fail to understand that the FMEDA provides the information requested by the Commission in the July 7 order. Mr. Godfrey asserted that the DNV POF Report (Exhibit A-29) provides the POF analysis that allows the Commission to compare the safety of the dual pipelines with the safety of the Replacement Project. Second, he stated that locating the replacement pipe segment within a tunnel eliminates or greatly reduces the risks that the dual pipelines present because the new pipeline: (1) will no longer be subject to anchor strikes and bending stress, (2) can be directly examined, (3) will have enhanced leak protection, and (4) will be encased in the secondary containment of the tunnel. 17 Amended Tr 2446. Third, Mr. Godfrey contended that the DNV POF Report that was based on the FMEDA is consistent with recent PHMSA recommendations, which favor probabilistic risk assessment.

Mr. Godfrey disputed Mr. Kuprewicz’s claim that the assignment of numerical probability values creates a false sense of safety. He argued that the POF analysis accurately reflects the risk of a release and the risk of an ignition of product within the tunnel under multiple potential threats and failure scenarios. In addition, Mr. Godfrey noted that “the POF for each selected FMEDA

scenario was estimated by using publicly available pipeline data.” 17 Amended Tr 2448. He contended that rather than being ignored (as Mr. Kuprewicz alleged), known risks are being considered along with appropriate preventive and mitigative measures. 17 Amended Tr 2449. Regarding Mr. Kuprewicz’s claim that PHMSA’s data for hazardous liquid pipeline accidents is unreliable, Mr. Godfrey asserted that pipeline operators are required to submit DOT Form 7000-1 following an accident and that accident reporting requirements are codified at 49 CFR 195.50-195.54. He testified that PHMSA collects this data in order to assess industry performance and that by comparison, the National Transportation Safety Board does little investigation of such events.

Turning to the issue of girth welds and the potential for catastrophic failure, Mr. Godfrey stated that Mr. Kuprewicz fails to acknowledge several important facts, beginning with the Joint Industry Report (Exhibit BMC-43) which Mr. Kuprewicz relied upon in his testimony. Mr. Godfrey asserted that the Joint Industry Report notes that Enbridge has already implemented the recommendations set forth in Exhibit BMC-43 and has designed the Replacement Project to reduce the risk of girth weld failure. Next, he contended that Mr. Kuprewicz is mistaken in asserting that the placement of the pipeline on rollers will increase stress on the pipe; rather, it will achieve the opposite, and Mr. Godfrey cited Mr. Cooper’s testimony at 9 Tr 1241-1243 in support. He opined that this “is a significant improvement over the existing dual pipelines or a conventional buried pipeline which are subject to loading due to earth movement, hydrologic forces, and thermal effects.” 17 Amended Tr 2452. He also stated that Mr. Kuprewicz’s testimony significantly misrepresents the weld dimensions (by a factor of more than 10) and thus overstates the risk associated with the girth welds. Mr. Godfrey averred that Mr. Kuprewicz’s references to

Exhibits BMC-54 and BMC-55, two PHMSA advisory bulletins, are inapt because these bulletins address a different issue.

Regarding the Keystone pipeline failure and Exhibit BMC-64 introduced by Mr. Kuprewicz, Mr. Godfrey testified that his conclusions about girth weld POF have not changed. He contended that the Replacement Project is significantly different from the Keystone pipeline, as illustrated by the fact that the replacement pipe segment “will have no pipe to fitting transition welds which is a potential source of weld flaws due to the weld geometry.” 17 Amended Tr 2454. And, because the replacement pipe segment will not be buried in the ground, Mr. Godfrey asserted that “bending stress loads will be distributed across the tunnel pipe support and roller system by design.”

17 Amended Tr 2454. Mr. Godfrey also objected to Mr. Kuprewicz’s reference to the May 4, 2020 rupture on Enbridge’s Line 10. He stated that Line 10 was constructed in 1952, “which was prior to PHMSA regulation and modern welding standards.” 17 Amended Tr 2455. In addition, Mr. Godfrey noted that, in the case of Line 10, the failure involved a tie-in weld, however there are no tie-in welds in the Replacement Project. Therefore, due to the lack of similarity, he stated that the Line 10 failure was not considered in the FMEDA process. In any event, Mr. Godfrey contended, modern welding standards and Enbridge’s commitment to examine all the welds will protect against the same type of failure.

Next, Mr. Godfrey responded to criticism that Enbridge is overly reliant on ILI tools to monitor safety conditions, reiterating that the threat of girth weld failure is being addressed through the design and construction of the Replacement Project. Regarding Mr. Kuprewicz’s claim that the communications system is subject to human error, Mr. Godfrey asserted that it is “unclear what human error Mr. Kuprewicz envisions or how it would be mitigated further.”

17 Amended Tr 2456. Turning to the alleged weaknesses of the CPM system, Mr. Godfrey

rejected Mr. Kuprewicz's concern related to the elevation of the tunnel. He explained that there is no basis to think that a pressure loss would not quickly result in the identification of a pipeline rupture because "the lower the elevation of a rupture, the greater the pressure drop and initial flow rate out of the pipe." 17 Amended Tr 2457.

In response to Mr. O'Mara's concern regarding the operating and hydrostatic pressure on the replacement pipe segment, Mr. Godfrey noted that Mr. O'Mara assumes the pipeline will operate at its MOP of 1440 psig when, in fact, the normal operating pressure will be 480 psig.

17 Amended Tr 2458 (citing 8 Tr 801). He also stated that Mr. O'Mara misunderstands how the pipeline will operate hydraulically, adding that "the tunnel will act as an elongated storage tank. Product leaving the pipeline will quickly equalize with ambient tunnel pressure until the tunnel is completely filled." 17 Amended Tr 2459. Mr. Godfrey asserted that, in any event, the automatic shutoff valves would close within three minutes.

Dr. Ferrara testified that he is a Principal Consultant with DNV Services UK Limited Energy Systems (also referred to as DNV). He sponsored Exhibit A-35. Dr. Ferrara stated:

DNV conducted a numerical computational fluid dynamics (CFD) 3D modeling study to assess the severity (in terms of blast overpressures) of a hypothetical explosion occurring as a result of a release of natural gas liquids (NGLs) from the new Line 5 Replacement Segment within the Great Lakes Tunnel Project (GLTP). As a result of this study, [he] along with other DNV employees prepared a report titled *Enbridge Line 5 Great Lakes Tunnel Project: Tunnel Explosion Computational Fluid Dynamic Study* (Explosion Study), which is Exhibit A-35. The Explosion Study addresses concerns regarding an explosion within the tunnel that were raised by other witnesses. . . . Based on the modeling of four scenarios discussed in the Explosion Study, [they] concluded that the overpressure generated in the tunnel created by an explosion from an ignition of NGLs product in a conservative, worst case explosion scenario is 0.386 barg [bar gauge]. [They] understand from Enbridge that the tunnel's design will allow the tunnel to withstand overpressure [of] 3 barg where its overburden is least and overpressure of 29 barg where its overburden is greatest.

17 Amended Tr 2405-2406.

Mr. Dennis responded to Mr. O'Mara and Mr. Kuprewicz on the issues of fire suppression and risk management. He explained that Enbridge does not expect methane to be present in the tunnel at levels of concern during construction or operation of the tunnel. However, Mr. Dennis stated that:

we still take seriously the risks that methane might create. To address the risk of methane during construction, as required by [OSHA], the [TBM] will be equipped with monitors to detect methane. In the unlikely event that the TBM were to encounter methane at levels that would present a risk, the TBM operators would be able to initiate appropriate safeguards to safely tunnel in that methane environment. The use of a TBM that is equipped to detect methane helps to ensure the safe mining of the tunnel. A TBM equipped to detect methane will also confirm the existence or lack of existence of methane along the entire path of the tunnel. If methane is identified at significant levels during tunneling, then we will take appropriate design and operational steps to address the existence of methane to operate the tunnel safely.

15 Tr 2090. In addition, Mr. Dennis contended that there will be vapor monitors in the tunnel after construction and during operation that will detect the presence of methane and if the gas is detected, the company will take steps to address the issue.

Mr. Dennis objected to Mr. O'Mara's request that Enbridge install an FFFS in the proposed utility tunnel similar to those installed in transportation tunnels. He stated that transportation tunnels have a much higher risk of accidental fire than the proposed utility tunnel and are better suited for an FFFS. In addition, Mr. Dennis asserted that an FFFS is not advisable in this situation:

From an engineering and safety perspective, we have concluded that installing a [FFFS] is counterproductive for this tunnel. First, the risk of a fire is extremely remote, and the tunnel is a confined space which will not typically be occupied by humans. Second, by installing a [FFFS] within the tunnel, we would be increasing the number of hours personnel would need to be in the confined space of the tunnel to maintain the [FFFS]. These increased hours for maintenance on the [FFFS] creates more potential harm to human health and life than the benefits that such a system would provide. Therefore, given the tunnel is treated as a confined space, the risk of fire is extremely remote, and the additional risks in terms of human

health and life to maintain a [FFFS], the installation of such a system is inappropriate.

15 Tr 2091-2092.

Mr. Dennis further concluded that Dr. Ferrara's explosion study, set forth in Exhibit A-35, is accurate. He noted Dr. Ferrara's conclusions regarding the tunnel lining's ability to withstand overpressure (3 barg at each end of the tunnel and 29 barg at its lowest point) and the fact that the largest overpressure that can be expected from an explosion is just under 0.4 barg. As a result, Mr. Dennis asserted that the tunnel lining will maintain its integrity in the event of an explosion.

15 Tr 2092-2093. Finally, he stated that Dr. Vitton's testimony shows that, even in the event of a failure of a portion of the lining, Line 5 product would not be released into the strata around the damaged lining.

Turning to the topic of risk assessment, Mr. Dennis noted that Enbridge based its design decision for managing risk on ISO 31000, which is a "widely adopted industry standard relating to risk management . . . codified by the International Organization for Standardization (ISO)."

15 Tr 2094. He stated that even where risks are low or are already mitigated, the company has not become complacent. Mr. Dennis cited methane as an example, as well as the steps taken to reduce the chance of a release of Line 5 product, stating that even though these risks are virtually nonexistent, the company has taken significant risk avoidance measures.

Finally, Mr. Dennis disputed Mr. Kuprewicz's claim that the strobe light alarm, which warns of a gas leak in the tunnel, and the communications system are subject to human error. He stated that along with the strobe light alarm, there are other modes of protection available such as a horn and personal gas monitors. Regarding the communications system, Mr. Dennis explained that:

Enbridge will install two redundant communication systems within the tunnel. One is a radio system provided via a distributed antenna system, and the other is a fixed system provided via a mine telephone system. This duplicative communication

system is sound risk management in the case that one system fails. This approach is well supported by industry practice and compliance with federal regulations concerning construction of underground tunnels.

15 Tr 2097. Furthermore, Mr. Dennis noted that “[a]ny entry team going into the tunnel will have a dedicated team outside the tunnel monitoring and ensuring their safety who will be located in the control room.” 15 Tr 2097.

Stanley J. Vitton, Ph.D., testified that he is a Senior Geotechnical Engineer at Barr Engineering Company. In response to Mr. O’Mara’s concern about a methane explosion during construction and operation of the Replacement Project, Dr. Vitton asserted that methane is not a risk for the Replacement Project. He stated that there are no sources of methane within the area of the tunnel “that have the ability to produce methane levels remotely capable of reaching explosible methane levels. Mr. O’Mara has drawn faulty conclusions from the Geotechnical Data Report (GDR) conducted by Enbridge.” 17 Amended Tr 2465.

Dr. Vitton explained that, according to the GDR, very low levels of methane were detected in four samples (from the 18 boreholes) that range from 5.3 micrograms/liter (μL) to 11 μL . He stated that these “four samples are common for areas in or near shore water where the methane comes mainly from decomposed vegetation and atmospheric deposition.” 17 Amended Tr 2465. Dr. Vitton added that the GDR samples taken from the main waterway showed no methane and there are no gas deposits underlying the Straits.

Dr. Vitton noted that the National Institute for Occupational Safety and Health publishes its Informational Circular 9486, *Handbook for Methane Control in Mining* (Kissell, 2006), that states that the “No Immediate Action” level for methane is <10 milligrams/Liter. 17 Amended Tr 2467, Table 9. According to Dr. Vitton, the highest level of methane reported in the GDR is 0.1% of the “No Immediate Action” level and, therefore, no mitigation measures are necessary. He also noted

that the findings in the GDR are consistent with the known geology of the Straits.

17 Amended Tr 2468-2470. Furthermore, he asserted that Mr. O'Mara provided no evidence or analysis to support his concerns regarding methane.

Next, Dr. Vitton discussed the examples of methane explosions in tunnels in the Great Lakes Basin cited by Mr. O'Mara, stating that they involved tunneling in areas that were well known to have a high methane concentration—one in a collector sewer tunnel constructed in swamp soils and the other in a tunnel constructed through the Antrim Shale. 17 Amended Tr 2471-2473. He argued that these tunneling projects are an apples-to-oranges comparison to the Replacement Project.

Finally, Dr. Vitton testified that he disagrees with Mr. O'Mara's assessment of the potential escape of Line 5 product into the Great Lakes in the event of a tunnel collapse. He concluded that:

[a]ssuming a hypothetical breach of the tunnel lining caused by either an explosion or fire, any NGLs or petroleum products would likely be consumed by the fire or explosion. Further, the surrounding hydrostatic water pressure in the strata is higher than the atmospheric pressure in the tunnel, thus, groundwater would be forced into the tunnel, not allowing the product to move out of the tunnel and into the strata. The only way for the product to migrate into the strata is for the atmospheric pressure in the tunnel to somehow be at a pressure higher than the hydrostatic water pressure for a sustained period of time. There is no conceivable scenario for this to occur. For example, the force [of] an explosion would last only milliseconds and not be a cause of product to migrate through the strata. Even assuming that the tunnel lining were breached and then the tunnel allowed to fill with product, the water hydrostatic pressure would still be higher than the pressure from the product since the density of the NGLs and petroleum products is lighter than water. Again, water would move into the tunnel and up to the level of the water in the Straits, not out into the rock formation.

17 Amended Tr 2475. He contended that the path of least resistance would be the tunnel shafts, leading to the portals at the two ends. Dr. Vitton stated that "if such a breach were to occur, Enbridge would be in a position [to] remediate the release by vacuuming the product from the tunnel at either portal." 17 Amended Tr 2476.

2. The Commission Staff

In his rebuttal testimony on reopening, Mr. Adams responded to Mr. O'Mara and sponsored Exhibit S-37.³¹ He argued that the examples provided by Mr. O'Mara of fires in large tunnel projects are not relevant to the Replacement Project. Mr. Adams explained that all the projects cited by Mr. O'Mara were built before 2000, all are tunnels used for the transportation of cars and trains, and all are regularly occupied by humans.

Mr. Adams stated that "the tunneling industry has made significant advances in both analysis and practical design considerations for large fire events for tunnel lining design."

17 Amended Tr 2570. He asserted that the Replacement Project design meets the current standard of practice and has been designed for the Rijkwaterstaat (RWS) fire event. Mr. Adams explained that this standard involves the use of polypropylene fibers in the concrete mix used for the tunnel lining, which reduces the impact from explosive spalling of the concrete in the event of a fire, and that this design will be incorporated by Enbridge in the Replacement Project.

Turning to Mr. O'Mara's discussion of the risks of long-term seepage of methane, Mr. Adams stated as follows:

Per joint specifications developed by Enbridge and the [MSCA]'s specifications technical team, specifically Section 317117, Paragraph 3.14, the tunnel lining has an allowable inflow leakage of 7000 gallons per day total over the full length of the tunnel, or 0.7 gallons per minute per 1000 feet of tunnel over shorter stretches of the tunnel. [(Exhibit MM-7, Page 237 of 238.) From the [GDR] for this project (Exhibit MM-4, Page 45 of 2625), methane detected in groundwater samples were a maximum of 11 micrograms of methane per liter of water, with average values of approximately 7 micrograms per liter.

Exhibit S-37 provides estimates of the duration it would take to reach LEL in the tunnel for parameters cited above. These estimates have been made for both allowable flow rates cited above, and used the following conservative assumptions: No tunnel ventilation occurs, allowing methane concentrations to accumulate

³¹ Mr. Adams is now the Chief Executive Officer of Delve Underground, formerly known as McMillen Jacobs Associates.

without air exchange; all inflows into the tunnel contain methane at the maximum concentration detected along the tunnel alignment; all methane in the groundwater is released into the tunnel atmosphere; and methane is assumed to concentrate in a smaller portion of the tunnel, approximately 5% of the overall tunnel length. Our duration estimates suggest it would take approximately 800 and 2,400 years for the allowed tunnel inflow rates as well as higher inflow rates for short periods and lengths of the tunnel, to reach this level of methane concentration within the air in the tunnel. These calculations are provided in Exhibit S-37. In conclusion, durations are well beyond the design life of the tunnel even for conservative assumptions throughout.

17 Amended Tr 2572-2573.

Mr. Chislea responded to Mr. Kuprewicz on the issues of probability analysis and pipeline management. He disagreed with Mr. Kuprewicz that federal regulations provide no support for the use of numeric probabilities in performing risk assessment. Noting the requirements of Part 195 of the CFR, specifically 49 CFR 195.452 and Appendix C of Part 195 (which provides instructions on how to identify risk factors), Mr. Chislea concluded that “federal regulations on pipeline integrity management require pipeline risk assessment, which can include calculating numeric probabilities, to establish baseline and continual assessment schedules.” 18 Tr 2810.

In response to Mr. Kuprewicz’s description of the federal integrity management regulations concerning hazardous liquids pipelines, Mr. Chislea noted that 49 CFR 195.452 and 195.454 govern pipeline integrity management for hazardous liquid and carbon dioxide pipelines and that PHMSA has the responsibility for inspection and enforcement of hazardous liquid pipeline safety in Michigan. He explained that with a typical Act 16 application, the Staff consults with PHMSA to ensure that that agency is carrying out the required reviews and inspections, and the Staff may also make recommendations to the Commission depending on the information obtained in consultation with PHMSA.

Turning to the issue of the girth welds, Mr. Chislea reiterated his recommendation that Enbridge be required to develop low-hydrogen welding procedures and qualify them per 49 CFR 194.214, which exceeds the procedures required by API Standard 1104. 18 Tr 2812.

3. Mackinac Straits Corridor Authority

Mr. Cooper responded to Mr. Kuprewicz and Mr. O'Mara on the issue of probability assessment. He disputed Mr. Kuprewicz's claim that Enbridge's risk assessment is not supported by federal regulations. Rather, Mr. Cooper asserted that the pipeline integrity management regulations located in 49 CFR 195.452 and 195.454 require risk-based decision-making. Mr. Cooper further stated that risk assessment helps a pipeline operator decide when to take measures that exceed federal standards, such as when there are threats to the pipeline that are greater than those anticipated by federal regulations. He asserted that this is illustrated by Enbridge's decision to place the pipeline in a tunnel, which is not required by federal safety regulations but has been shown through risk assessment to provide greater safety than the existing dual pipelines which lay on the lakebed.

Mr. Cooper also disputed the notion that risk assessment results in complacency; rather, he asserted that risk assessment is a form of diligence. He stated that Enbridge has followed industry standards for estimating risk as "described by American Petroleum Institute Recommended Practice 1160 *Managing System Integrity for Hazardous Liquid Pipelines* and American Society of Mechanical Engineers Standard B31.8S *Managing System Integrity of Gas Pipelines*." 17 Amended Tr 2591.

In addition, Mr. Cooper objected to Mr. Kuprewicz's claim that Mr. Godfrey's numeric probability values are misleading. He testified that Mr. Godfrey's POF analysis follows industry standards for such assessments and that the need for "risk-based decision making is well

established in federal pipeline safety regulations.” 17 Amended Tr 2593. Mr. Cooper noted that Mr. Godfrey reviewed PHMSA data for quality and even excluded data where there were better sources in order to provide an apples-to-apples comparison.

Next, he asserted that the issues identified in the Joint Industry Report (Exhibit BMC-43) regarding girth welds in grade X70 pipe are not applicable to the Replacement Project. Mr. Cooper reiterated that the replacement pipe segment will not be buried in the ground but will instead be located in the tunnel on supports with rollers and, as such, will not experience the stresses related to ground movement or the pressures related to thermal changes that are experienced by buried pipelines. He further noted that Enbridge has already implemented the measures recommended in the Joint Industry Report for this issue.

In response to Mr. Kuprewicz’s claim that Enbridge underestimates the probability of explosion and release of Line 5 product into the Straits, Mr. Cooper stated that Mr. Kuprewicz failed to explain any observed situations where an explosion occurred, “how they compare with the proposed pipeline and tunnel, what safety measures were in place, and what events and causes led to product release and ignition.” 17 Amended Tr 2597. Additionally, Mr. Cooper asserted that Mr. Kuprewicz misinterpreted Exhibit BMC-60, which contains Mr. Cooper’s handwritten notes. Mr. Cooper testified that the notes were intended to provide Enbridge with examples of recommended “risk units to be used for reporting probability of failure analysis results,” not targets that the State would find acceptable. 17 Amended Tr 2599.

Regarding Mr. O’Mara’s assertions relating to the potential for product leaks, Mr. Cooper noted that the tunnel pipeline will not operate at 1440 psig but rather at a maximum steady-state pressure of 463 psig and a transient surge pressure of 750 psig. He stated that the lower pressure

reduces the potential for the destruction of rock and sediment, thus reducing the chance that product could reach the Straits. 17 Amended Tr 2599-2600.

C. Surrebuttal Testimony on Reopening of the Record

On behalf of Bay Mills, Mr. O'Mara responded to Dr. Ferrara and addressed the explosion study contained in Exhibit A-35. He sponsored Exhibit BMC-64. Mr. O'Mara contended that the explosion study was not based on a worst-case explosion scenario, which in his opinion, undercuts the conclusions of the study. He also objected to the explosion study, testifying that it: (1) only looks at vapor cloud releases from NGLs and not releases from crude oil; (2) does not evaluate an explosion following a full bore rupture; (3) assumes that the tunnel is level and only 1000 feet long rather than V-shaped and four miles long; (4) assumes a release from a single hole with a 0.315 inch diameter when it should look at releases from larger breaches including a full bore rupture; (5) assumes a vapor cloud height, width, and length that do not represent the worst-case scenario; (6) fails to include methane vapors; and (7) assumes a tunnel temperature of 42°F when it could actually be much colder or warmer. 18 Tr 2703-2704.

D. Initial Briefs on Reopening of the Record

1. Enbridge Energy, Limited Partnership

Enbridge asserts that the evidence in the reopened record demonstrates that replacing the dual pipelines with the Replacement Project will make the Straits safer. The company argues that in comparison to the dual pipelines, the Replacement Project reduces the probability of a release and decreases the overall environmental risk.

Enbridge begins with a description of the legal framework of the case, stating that under Act 359, MSCA is the ultimate owner of the tunnel and has authority over construction, operation, and maintenance of the tunnel. The company notes that the statute requires MSCA to ensure that

the tunnel will act as “secondary containment” and mandates that the purposes of MSCA are “public purposes.” Enbridge’s initial brief on reopening, p. 2 (quoting MCL 254.324d(4)(d) and MCL 254.324b(1), respectively). The company contends that PHMSA is vested with exclusive jurisdiction over “the safe operation of Line 5” under the PSA, “which expressly preempts a state’s authority over the safe interstate pipeline operation.” Enbridge’s initial brief on reopening, p. 2 (citing 49 USC 60101 and 60104(c)).

Enbridge then describes the July 7 order and notes that in addition to supplementary information on the Replacement Project, the Commission requested information relating to the current and future operation of the dual pipelines. The company states that the Staff concluded that Enbridge addressed each of the Commission’s information requests. Enbridge’s initial brief on reopening, p. 4 (citing 18 Tr 2791).

Turning to the Commission’s Act 16 analysis and the evidence on the reopened record, Enbridge argues that the second prong of the Act 16 analysis is satisfied because locating the replacement pipe segment within the tunnel is a better design and route than the dual pipelines. The company states that “[t]he additional evidence requested by the Commission regarding the current and future operations of the dual pipelines is set forth in Exhibit A-28, and that evidence demonstrates that the dual pipelines are being operated safely. Nonetheless, the testimony submitted on reopening demonstrates that locating Line 5 within the tunnel provides even greater protection.” Enbridge’s initial brief on reopening, p. 4. Enbridge contends that Mr. Godfrey’s evidence demonstrates that the tunnel will reduce or eliminate the risks associated with the dual pipelines because the tunnel: (1) provides protection from anchor strikes and bending stress, (2) allows for direct examination of the pipeline, (3) provides better leak detection, and (4) acts as

secondary containment. Enbridge posits that the tunnel provides “a far superior design and route than the current dual pipelines.” Enbridge’s initial brief on reopening, p. 5.

Additionally, Enbridge notes, Mr. Godfrey’s review of PHMSA data shows that the risk of a release of Line 5 product from the Replacement Project is less than once every 663,000 years, and his analysis of the risk of ignition in the tunnel is once every 169 million years. Enbridge’s initial brief on reopening, p. 5 (citing 17 Amended Tr 2437, 2439). The company further posits that the evidence of Dr. Ferrara, Dr. Vitton, and Mr. Dennis demonstrate that the tunnel’s design will allow it to withstand a worst-case explosion, and that even in the event of such an explosion, hydrostatic pressure would prevent any released product from migrating into the Straits. Instead, Enbridge asserts, released product would migrate to the end portals where it would be fully recovered. However, the company asserts, secondary containment will “be maintained in any explosion scenario.” Enbridge’s initial brief on reopening, p. 5. Enbridge states that even Mr. O’Mara agreed that a properly designed, constructed, and operated tunnel would be safer than the existing dual pipelines. *Id.*, p. 6 (citing 18 Tr 2719). Therefore, Enbridge concludes that the second prong of the Commission’s Act 16 analysis is satisfied.

For the third prong of the Act 16 analysis, Enbridge contends that the Replacement Project meets or exceeds current safety and engineering standards. The company asserts that it responded to the 10 categories of information sought by the Commission in the July 7 order and offered additional expert testimony, all of which rebuts the contentions of Bay Mills.

Enbridge claims that, on rebuttal, Mr. Godfrey and Mr. Cooper debunked Mr. Kuprewicz’s assertion that probabilistic risk assessment should not be used at this stage. The company argues that PHMSA encourages quantitative risk analysis specifically for hazardous liquids pipelines. Enbridge states that:

Mr. Kuprewicz relies on anecdotal evidence based on personal experience. By contrast, Enbridge's approach critically reviews relevant data, rigorously scrutinizes, analyzes, and computes it to inform reliable, fact-based opinions as to risk. At no point does Mr. Kuprewicz demonstrate that locating Line 5 within the tunnel is less safe than the existing dual pipelines.

Enbridge's initial brief on reopening, pp. 9-10.

Enbridge asserts that even in the extremely unlikely event of a release and an ignition (once in 169 million years), the tunnel will withstand the explosion and there will be no localized collapse. In support, the company cites Dr. Ferrara's evidence showing that even a worst-case explosion would not cause the tunnel to fail because the greatest blast overpressure that would be created in the tunnel is 0.4 barg, which is well within the range of 3 barg (at the area with the lowest overburden pressure) to 29 barg (at the area with the highest overburden pressure). Enbridge's initial brief on reopening, p. 11 (citing 15 Tr 2092-2093, 17 Amended Tr 2405-2406) (Enbridge rounds up from 0.386 barg). Enbridge argues that:

[i]n sur-rebuttal, Mr. O'Mara criticized the inputs to the model used by Dr. Ferrara. Based on his own testimony, however, Mr. O'Mara has no expertise in modeling explosions and his lack of qualifications stand in stark contrast to the qualifications of Dr. Ferrara. Mr. O'Mara readily admits that he did no actual engineering or mathematical analysis, himself, on the effects of an explosion in the tunnel, and he did not even attempt to run a model using different inputs. In fact, Mr. O'Mara has never used a computational fluid dynamics model to calculate the overpressure generated by an explosion for this or any other tunnel. Dr. Ferrara presented the only analysis of overpressure generated by a worst-case explosion, demonstrating that the tunnel will remain intact in the extremely unlikely event of an explosion.

Enbridge's initial brief on reopening, pp. 11-12 (citing 17 Amended Tr 2408-2429; 18 Tr 2683-2687, 2695, 2737-2738).

Turning to the issue of methane, Enbridge argues that Mr. O'Mara made no attempt to analyze whether the methane values found in the GDR samples could result in an explosive atmosphere in the tunnel. By contrast, the company avers, Dr. Vitton analyzed the sample values and stated unequivocally that there are no methane sources in the area of the tunnel that "have the ability to

produce methane levels remotely capable of reaching explosible methane levels.” Enbridge’s initial brief on reopening, p. 13 (quoting 17 Amended Tr 2465). Enbridge asserts that the methane values in the GDR samples fall well below levels of concern according to the Methane Control Handbook. According to the company, Mr. O’Mara admitted that he relies on this handbook; however, Enbridge states that he failed to consider the handbook in his evidence because it would have undercut his assertions of risk.

Enbridge further argues that Mr. Adams’ Exhibit S-37 concludes that it would take between 875 and 2,452 years for methane to accumulate in the proposed utility tunnel sufficient to reach the LEL. The company adds that Mr. O’Mara’s two examples of methane explosions in tunnels in the Great Lakes Basin are inapposite in this case. Enbridge’s initial brief on reopening, pp. 14-15. Enbridge asserts that, despite the fact that methane is highly unlikely to be a concern during construction or operation of the Replacement Project, the company has addressed any potential risk by equipping the TBM with methane detectors and equipping the tunnel with gas detectors.

Next, Enbridge contends that even if the tunnel liner failed, secondary containment would be maintained. The company argues that, again, Mr. O’Mara provides anecdotal evidence based on false assumptions. Specifically, Enbridge states that “Mr. O’Mara fails to explain how the pressure of the product exiting the pipe after a fire or explosion would be maintained at the same pressure within the pipe and not fall to the ambient atmospheric pressure of the tunnel after exiting the pipeline” or why the product would continue to be released at pressure after the automatic shutoff valves closed after three minutes. Enbridge’s initial brief on reopening, p. 17. The company highlights Mr. Vitton’s testimony indicating that it is implausible that the atmospheric pressure within the tunnel could be higher than the hydrostatic water pressure for a sustained period. Accordingly, Enbridge states, “there is no circumstance under which product released

from the Line 5 replacement segment could escape the tunnel.” Enbridge’s initial brief on reopening, p. 17 (citing 17 Amended Tr 2475). The company contends that any released product would float on the water inside the tunnel and be recovered at the portals.

Enbridge maintains that the CPM and other proposed leak detection systems for the Replacement Project will meet or exceed safety and engineering standards. As a preliminary matter, Enbridge notes that pursuant to its leak detection testing program, the company conducts fluid withdrawal tests on its various pipeline systems and that the performance of the system, in all such tests, including the human element, have always met or exceeded expectations. In addition to the CPM and the leak detection systems, Enbridge states that the Replacement Project will contain hydrocarbon vapor detectors, which will alarm if vapors reach 20% of the amount needed to create an explosive atmosphere. The company adds that:

[i]f these detectors issue an alarm and the Control Center is unable to rule out the possibility of a release within ten minutes, then the pipeline will be shut-down. In addition to the hydrocarbon monitors, there are already automatic shut-off valves on each side of the Straits. These shut-off valves will close automatically within three minutes should a threshold pressure loss occur. The closure would be independent of and could not be overridden by any Control Center action.

Enbridge’s initial brief on reopening, p. 19 (citing Exhibit A-32, p. 2; 16 Tr 2262; and Exhibit A-10, p. 20). Enbridge asserts that, as a direct result of the 2010 Marshall incident, the company implemented the LDAM to strengthen compliance with the 10-Minute Rule. The company explains that unless all three members of the ART find the alarm to be invalid, the pipeline will shut down automatically at the 11th minute.

Enbridge contends that the design of the Replacement Project ensures that the risk of a release of Line 5 product from the replacement pipe segment is less than one in one million. However, the company describes that figure as a reliability target for the IMP and states that the actual probability of a release is reflected in Mr. Godfrey’s finding of once in 663,000 years. Enbridge

notes that, in calculating the one in one million reliability target, Mr. Bott testified that he considered the performance of the company's mainline transmission pipelines installed after 2000 and the IMP, as well as the fact that the replacement pipe segment will not be buried, can be visually inspected, and will operate at a much lower percentage capacity than its design allows. Enbridge's initial brief on reopening, p. 21 (citing 16 Tr 2355-2356 and Exhibit A-32). The company argues that of the pipelines installed by Enbridge between 2000 and 2022 (10,000 km), it has experienced only four releases. Enbridge explains that two were caused by ground movement and two were caused by third-party damage and, therefore, none of the causes would be applicable to the Replacement Project. The company notes that the one in one million figure represents the upper bound POF.

Next, Enbridge addresses the issue of the electrical equipment that will be located within the tunnel and contends that the reopened record shows that Class 1, Division 2 is conservative and appropriate. The company notes that Mr. Godfrey's estimate of the risk of ignition of once in 169 million years is based on the use of Class 1, Division 2 equipment. Enbridge highlights Mr. Godfrey's testimony that he was "unable to locate any data sets that would show [that] the use of Class 1, Division 1 equipment would make the risk of an ignition even more remote." Enbridge's initial brief on reopening, pp. 23-24 (quoting 17 Amended Tr 2439).

The company contends that:

[d]esigning the electrical equipment to meet the more stringent standards for Class 1, Division 1: (1) is inconsistent with the [NEC], (2) may not be feasible, and, (3) more importantly, would create other safety concerns that are inconsistent with the design philosophy of the tunnel and adversely impact human safety.

Enbridge's initial brief on reopening, p. 24 (citing Exhibit A-31, p. 7). First, Enbridge explains that NEC 500.5(B)(1) requires Class 1, Division 1 equipment only where vapors can exist under normal operating conditions. The company avers that vapors will not exist in the tunnel under

normal operating conditions of the replacement pipe segment. Second, according to the company, it is not clear whether the Tunnel Service Vehicle (TSV) could even be designed to meet the Class 1, Division 1 standard. Enbridge assumes that the equipment would need to be larger and bulkier, and thus the tunnel itself may need to be redesigned. Third, the company states that it has designed the tunnel to limit to the extent possible the need for humans to be in the tunnel. Enbridge argues that a Class 1, Division 1 requirement would undercut that goal by requiring inspection and maintenance personnel to be in the tunnel for longer periods of time and, thus, imposing unnecessary safety risks.

Regarding the ventilation system, Enbridge states that it is designed to exceed OSHA requirements and will be activated only when personnel are in the tunnel. The company notes that the ventilation system will not be automatically activated in response to a release of Line 5 products because the tunnel is designed to act as secondary containment. Enbridge's initial brief on reopening, pp. 25-26.

Finally, with respect to the third prong of the Act 16 analysis, Enbridge addresses the issue of fire and reiterates that, according to Mr. Godfrey, the likelihood of a release with an ignition is once in 169 million years. The company argues that its evidence demonstrates that the risk of fire is extremely remote, that the tunnel meets the state of the practice for fire design, and that, even in the event of a fire, there is a repair process for the PCTL segments. Noting its goal of limiting the need for personnel in the tunnel, Enbridge maintains that the installation of FFFS would be counterproductive by increasing the number of required hours spent by workers in a confined space, particularly in light of the "incredibly remote risk of a fire." Enbridge's initial brief on reopening, p. 29. In conclusion, the company contends that it has satisfied the requirements for the third prong of the Act 16 analysis.

2. The Commission Staff

In its initial brief on reopening, the Staff notes that Enbridge's Exhibit A-28 contains materials responsive to the Commission's request in the July 7 order for additional evidence regarding the current condition, and future maintenance, of the dual pipelines. The Staff states that, after reviewing Exhibit A-28, the Staff sponsored Exhibit S-33, which is "a report entitled 'Evaluation of Identified Underwater Technologies to Enhance Leak Detection of the Dual Line 5 Pipelines'—which is also responsive to the Commission's request for additional evidence on leak detection and other relevant evidence regarding the current dual pipelines." Staff's initial brief on reopening, p. 2 (footnote omitted).

For the third prong of the Act 16 analysis, the Staff notes that in the July 7 order, the Commission requested additional information on 10 topics, including "the likelihood of release from the pipeline, the tunnel design's ability to meet or exceed safety standards, and the pipeline design's ability to meet or exceed safety standards." Staff's initial brief on reopening, p. 3. The Staff states that the reopened record contains two sources of evidence regarding the likelihood of a release, one being Exhibit A-32, which the Staff describes as providing "the achievable integrity performance for the project" (one in one million), and the second being Exhibit A-29, which includes Mr. Godfrey's POF analysis (once in 663,000 years). Staff's initial brief on reopening, p. 4. The Staff asserts that Exhibit A-32 includes a description of the four releases that have occurred on Enbridge's pipelines installed after 2000, and the Staff notes the company's conclusion that the causes are inapplicable to the Replacement Project.

Regarding Mr. Godfrey's POF analysis in Exhibit A-29, the Staff states that he relied on publicly available pipeline data from PHMSA and BOEM and looked at five POF scenarios. The Staff notes that it "sent a discovery request to Enbridge seeking, in part, a justification that

Enbridge's mitigation measures would result in a reduction in the probability by an order of magnitude less, as claimed in the POF Analysis." Staff's initial brief on reopening, p. 6. The Staff states that:

Enbridge's response acknowledged that quantitative risk assessments do "not fully account for continuous improvement of pipeline designs, materials, and operating practices" but that "it is appropriate to apply factors that align the results of the data analysis with the expected performance characteristics of the new pipeline." (Exhibit S-31, pp 3-4.) Enbridge further explained that "[t]he order of magnitude reduction factor was chosen by DNV subject matter experts based on the unique design attributes of the Line 5 Replacement Segment." (Id. at 4.) Staff considers this to be a reasonable assumption for a risk assessment at this time, pending assumptions derived from future integrity assessments during operation and maintenance.

Staff's initial brief on reopening, p. 6. The Staff notes that the reopened record does not indicate a standard that sets a specific acceptable probability of release.

In response to Bay Mill's concerns regarding the girth welds, the Staff cites the testimony of Mr. Cooper in which he states that the girth weld issues identified in the Joint Industry Report are not applicable to the Replacement Project because the pipeline will not be buried and Enbridge has already carried out the recommendations in that report with respect to eliminating under-matched girth welds and minimizing weld softening in the heat affected zones. In addition, the Staff highlights Mr. Chislea's recommendations for low-hydrogen welding and testing procedures and notes that his recommendations exceed the standards that are incorporated into 49 CFR 195.214 (by reference). Staff's initial brief on reopening, pp. 8-9 (citing 17 Amended Tr 2595-2596, 18 Tr 2812).

According to the Staff, Enbridge filed additional information on the ventilation system in response to the July 7 order. The Staff describes the OSHA requirements for the ventilation system and contends that the company's proposed system is designed to exceed those safety requirements. Staff's initial brief on reopening, p. 11.

The Staff notes that Mr. O'Mara provided a general opinion that an explosion could damage the tunnel lining, and Enbridge responded with Dr. Ferrara's Exhibit A-35, which models four scenarios to determine a worst-case scenario. The Staff states that Dr. Ferrara concluded that a worst-case scenario would generate an overpressure of 0.386 barg, whereas the tunnel can tolerate an overpressure of 3 to 29 barg (moving from lowest overburden to highest overburden). Staff's initial brief on reopening, p. 12 (citing Exhibit A-35, p. 12; 17 Amended Tr 2406). The Staff asserts that it does not concur with Mr. O'Mara's criticisms of Exhibit A-35 and disagrees with Mr. O'Mara that a full bore rupture is the worst-case scenario. The Staff states that, for example, "there is already evidence on the record regarding the existing dual pipelines that indicates the outcomes from a 3-inch hole release could be more severe than those from a full-bore rupture. (See [Exhibit] ELP-24, p 253.)" Staff's initial brief on reopening, pp. 12-13.

Regarding the question of whether Line 5 product could reach the Straits in the event of an explosion, the Staff points out that Mr. O'Mara assumed an operating pressure of 1440 psi whereas normal operating pressure will be about 480 psi. Additionally, the Staff states that:

the pressure inside the tunnel and against the surrounding geology could not match the pressure within the pipeline and overcome the hydrostatic pressure unless the pipeline continued to operate even after the tunnel filled with product. (Exhibit S-16, pp 2, 5-6.) The record indicates this would require at least two full days of continued pipeline operation for this to become possible. (17 TR 2459; Exhibit S-16, pp 5-6.)

Staff's initial brief on reopening, p. 13. The Staff argues that Exhibit A-35 is significant because it demonstrates that the anticipated pressure from an explosion is about seven times less than what the tunnel is designed to withstand at its highest levels and about seventy times less than what the tunnel is designed to withstand at its lowest level. The Staff contends that any released product would remain within the tunnel and could be recovered at the portals. The Staff avers that the

current tunnel design mitigates the risks associated with explosion and is consistent with safety and engineering standards. *Id.*, p. 14.

The Staff asserts that the reopened record shows that the concrete lining of the tunnel can withstand a high-intensity fire and can resist spalling. Noting Mr. O'Mara's opinion that a fire is more likely to cause failure than an explosion, the Staff finds that this was rebutted by Mr. Adam's testimony regarding recent improvements to tunnel design and tunnel lining (such as the RWS fire event standard) and Mr. Dennis' testimony explaining why installation of an FFFS is not appropriate for the Replacement Project. Staff's initial brief on reopening, p. 15 (citing 17 Amended Tr 2570-2583, 18 Tr 2091-2092).

Turning to the issue of the electrical equipment located in the tunnel and the risk of fire, the Staff supports a recommendation by the Commission that Enbridge exceed the minimum OSHA standards for certain components. The Staff notes that a Class 1, Division 1 location is one in which flammable gases or vapors may exist under normal operating conditions, and a Class 1, Division 2 location is one in which hazardous gases, vapors, or liquids are normally confined within closed systems. Staff's initial brief on reopening, pp. 16-17 (citing Exhibit A-31 and 29 CFR 1926.449). The Staff asserts that, in response to discovery, Enbridge stated in Exhibit S-31 that it had not yet acquired the equipment that will be located in the tunnel and so the company cannot determine whether the more stringent standard would require bulkier equipment. The Staff states that it recognizes that the Replacement Project "appears to meet the definition of a Class 1, Division 2 location in which flammable liquids and gasses are handled, but will normally be confined within the pipeline, unless there is an 'accidental rupture' or other abnormal operation of equipment. (Exhibit A-31, p 6.)." Staff's initial brief on reopening, p. 17. However, the Staff states that:

the reopened record also indicates there may be opportunities to design to the more stringent Class 1, Division 1 standard when finalizing the design. (Exhibit S-31, p 13; 16 TR 2187.) If the application is approved and the Commission deems it appropriate, Staff supports a Commission recommendation that certain equipment be designed to the more stringent Class 1, Division 1 standard to the extent such equipment is feasible, beneficial, safe, and permitted by the agreements and other permitting authorities governing the project.

Staff's initial brief on reopening, pp. 17-18 (footnote omitted). However, the Staff also acknowledges that technical feasibility should not be the only consideration in this decision.

The Staff asserts that the reopened record shows that the Replacement Project is designed to minimize the chance of fire or explosion. Pointing to the POF Report in Exhibit A-29, the Staff states that this analysis assumes that "an undetected leak achieved the required vapor concentration at the same time and location as an equipment failure that could result in ignition," and the report found the POF to be less than one failure in over 663,000 years and the probability of ignition to be one ignition event every 169 million years. Staff's initial brief on reopening, p. 18 (citing Exhibit A-29, pp. 16-17).

The Staff notes that Mr. Kuprewicz alleged that Mr. Godfrey cherry-picked the PHMSA data for the DNV POF Analysis and virtually ignored the engineering risks of the proposed tunnel project. The Staff highlights Mr. Cooper's disagreement and states that, "[w]hile the DNV POF Analysis does not appear to be directly responsive to one of the ten specific requests for additional prong (3) evidence, Staff recognizes the relevance to the July 7 Order and notes that findings showing an explosion is a relatively low-probability event does not, on its own, equate to ignoring a risk." Staff's initial brief on reopening, p. 19.

On the issue of methane in the groundwater and the possibility of seepage into the tunnel, the Staff notes Mr. Adams' rebuttal and states that his:

sponsored analysis assumed the highest recorded maximum measured methane concentration and also incorporated several conservative assumptions throughout

the analysis. (Exhibit S-37.) The conservative assumptions used in preparing Exhibit S-37 include assuming that: (1) no tunnel ventilation occurs, (2) all inflows contain the maximum methane concentration detected along the tunnel alignment; (3) all dissolved methane is released into the tunnel atmosphere; and (4) methane would accumulate in only 5% of the overall tunnel length. (17 TR 2572–73; Exhibit S-37, p 1.) The calculated durations needed to reach LEL in Exhibit S-37 were based on these conservative assumptions and, as witness Adams concludes, “are well beyond the design life of the tunnel.” (17 TR 2573.)

Staff’s initial brief on reopening, p. 21. The Staff also cites the testimony of Mr. Dennis and Dr. Vitton on this topic.

The Staff notes that Enbridge provided a response to the Commission’s request for more information on the procedure for repairing or replacing PCTL segments. Staff’s initial brief on reopening, pp. 23-24; *see also*, Exhibit A-31, pp. 8-9.

Next, the Staff states that the reopened record contains additional information regarding the leak detection system and the CPM. The Staff notes that Enbridge’s response to the Commission’s request:

provides detail regarding the models, locations, and quantity of gas and liquid hydrocarbon detectors within the tunnel. (Exhibit A-31, pp 1-2.) Three hydrogen sulfide detectors and three gas hydrocarbon detectors will be located at nineteen separate locations in the tunnel. Each detector will operate independently, and the system will function on a voting basis to avoid false alarms. (*Id.* at p 2.) Three liquid hydrocarbon detectors will be placed at four locations. In the event that a leak alarm is generated, Enbridge’s Control Center would initiate an investigation and shut down the pipeline if unable to rule out the possibility of a release within ten minutes. (*Id.*) Enbridge further described the rationale for the selected locations for the gas detectors and provided a schematic showing the locations in a discovery response to Staff. (Exhibit S-32, pp 3-4.)

Staff’s initial brief on reopening, p. 25.

The Staff asserts that in response to the Commission’s request for additional information, Enbridge reported that the gas detectors will be set to detect a threshold level of 20% of the LEL. *Id.* The Staff explains that, in discovery, it sought additional information about the detectors’ ability to detect gas. The Staff states that Enbridge provided Exhibit A-32, which notes that

although the detectors will be “calibrated for propane, other gases will be subject to detection. Enbridge explains that the 20% threshold is an industry standard and provides a sufficient safety factor to account for minor variances in product types or inaccuracy of the detectors.” Staff’s initial brief on reopening, p. 26.

Regarding Enbridge’s shutdown procedures in the event of a release, the Staff notes that Enbridge described the automatic shutoff valves that are pressure-sensitive and operate without human interaction, the activation of the ventilation system to assist in the evacuation of personnel, subsequent deactivation of the ventilation system, and the ultimate closure of the tunnel. The Staff observes that, in general, the conditions for shutdown of the tunnel pipeline are the same as the procedures in place for shutdown of the dual pipelines. *Id.*, p. 28.

In conclusion, the Staff recommends approval of Enbridge’s application with certain conditions. The Staff contends that the record as a whole supports a finding that the Replacement Project fulfills the purpose of reducing the environmental risk to the Great Lakes posed by the dual pipelines, and the additional information on the reopened record addresses prongs (2) and (3) of the Commission’s Act 16 analysis. In addition to the conditions and recommendations made in its initial brief on the original record, the Staff “recommends Enbridge be required to implement certain welding and testing procedures and, to the extent the Commission deems it appropriate, Staff supports a Commission recommendation that certain equipment within the tunnel be designed to the more stringent Class 1, Division 1 under the circumstances described above.” Staff’s initial brief on reopening, pp. 28-29.

3. Bay Mills Indian Community

Bay Mills continues to oppose Enbridge’s application and characterizes the company’s response to the Commission’s request for additional information on reopening of the record as “a

series of flawed and biased analyses manufactured to suggest that the risks identified by renowned experts are unlikely to occur.” Bay Mills’ initial brief on reopening, p. 1.

Bay Mills begins with the third prong of the Act 16 analysis and argues that the Replacement Project presents significant safety concerns. Regarding the X70 pipe proposed for use in the Replacement Project, Bay Mills contends that “Enbridge and Mr. Godfrey have been dismissive of the threat posed by catastrophic failure at the girth welds or [heat affected zones] of this pipe. Mr. Godfrey’s analysis fails to account for the unique design and the abnormal loading and stress that pose a serious risk to the pipeline’s integrity.” Bay Mills’ initial brief on reopening, p. 5. Specifically, Bay Mills argues that the installation of the replacement pipe segment on rollers will place abnormal loading on the pipe at these two areas, which can lead to a rupture. In addition, Bay Mills avers that PHMSA has issued an advisory explaining that the strength value of X70 pipe may be 15% lower than that specified by the manufacturer. *Id.*, p. 4 (citing 17 Amended Tr 2630-2633). Bay Mills cites the rupture of the Keystone pipeline on December 7, 2022, as an example of a girth weld failure on X70 pipe caused by bending stress and a weld flaw that resulted in a crack (which propagated over time). Bay Mills emphasizes that this failure occurred despite the fact that the pipeline underwent all required inspection and testing. *See*, Exhibit BMC-64.

Bay Mills maintains that Enbridge has failed to adequately address concerns about the electrical equipment that will be located inside the tunnel, which may provide a source of ignition. Bay Mills notes that in the July 7 order, p. 45, the Commission requested information on the feasibility of exceeding the OSHA standard of Class 1, Division 2 equipment. Bay Mills contends that Mr. Godfrey did not determine the extent to which his reported POF could be lowered through the use of Class 1, Division 1 equipment. In addition, Bay Mills asserts that Mr. Godfrey provided no support for his conclusion that Class 1, Division 2 equipment is acceptable and that he provided

no feasibility analysis of exceeding the Class 1, Division 2 standard. Moreover, Bay Mills argues that contrary to Enbridge's claim, Exhibit A-31 does not actually offer a feasibility assessment for using the more stringent Class 1, Division 1 standard. Bay Mills' initial brief on reopening, p. 6. Bay Mills states that Enbridge had almost a year to determine whether it was feasible to move to Class 1, Division 1, and the company does not explain why it still does not know whether the TSV could be designed to meet that standard. *Id.*, p. 7, n. 21. Bay Mills notes that the space-proofing exercise was never undertaken and observes that Enbridge made no serious effort to respond to the Commission's request for information.

Next, Bay Mills contends that Enbridge is overly reliant on the CPM system and notes that Enbridge's shutdown procedures are triggered by pressure loss rather than hydrocarbon accumulation in the tunnel. Bay Mills asserts that by the time the pressure in the replacement pipe segment has dropped to 45 psi and the alarms have sounded, explosive conditions may already exist. Bay Mills' initial brief on reopening, p. 8.

Turning to the issue of methane accumulation, Bay Mills argues that compared to Mr. O'Mara, Dr. Vitton does not have the same practical tunneling experience, and Mr. O'Mara "is the only witness in these proceedings who has experience with and direct training following an explosive event caused by methane accumulation." Bay Mills' initial brief on reopening, p. 9 (footnote omitted). Bay Mills asserts that Mr. O'Mara has provided well-founded concerns about methane accumulation during construction and operation of the Replacement Project, and Enbridge has improperly dismissed these concerns.

Bay Mills states that Enbridge's GDR "does not support Dr. Vitton's sweeping conclusion that 'there are *no methane sources* within the area of the tunnel that could lead to methane levels remotely capable of reaching explosible methane levels.' Rather, the GDR falls well short of

industry standards, relies on an insufficient number of samples, and the laboratory results are, at best, inconclusive.” Bay Mills’ initial brief on reopening, p. 11 (quoting 17 Amended Tr 2465) (emphasis added to initial brief on reopening). Additionally, Bay Mills argues that Enbridge obtained too few borings, the borings were too shallow, and they did not reach the tunnel depth; thus, the GDR does not represent actual geological conditions in the area of the Replacement Project. Bay Mills also contends that 23 of the 24 GDR samples had quality control issues rendering the results useless. Bay Mills’ initial brief on reopening, p. 12 (citing Exhibit MM-4, 17 Amended Tr 2534-2536, 18 Tr 2757).

Bay Mills posits that Exhibit BMC-70, a U.S. Geological Society (USGS) survey from 2020, shows that “there *is* a significant oil and gas reserve directly situated under the Straits” and that Dr. Vitton looked only at surface water samples from outside the area proposed for the tunnel. Bay Mills’ initial brief on reopening, p. 13 (emphasis in original). Bay Mills asserts that groundwater may contain dissolved methane and that “[t]he threat of methane may arise during construction activities if dissolved methane is encountered during excavation. After the tunnel is complete, methane may accumulate via constant groundwater infiltration through the joints of the precast tunnel segmented lining, as well as through leaks in the portal and exit shafts.” *Id.*, p. 9 (footnotes omitted). Bay Mills contends that ignition of this methane could occur via an equipment malfunction, maintenance work, or static electricity.

On the issue of fire in the proposed utility tunnel, Bay Mills argues that in Enbridge’s response to the July 7 order, the company failed to provide evidence demonstrating that the concrete can withstand a high-pressure explosion. Bay Mills maintains that as a result of an explosion, the concrete will experience spalling due to fire in the tunnel and eventually the underlying steel structure will buckle. Noting Mr. Adams’ testimony that the tunnel lining will be tested using the

RWS fire curve, Bay Mills contends that this curve only tests for fires with a maximum temperature of 1200°C for 180 minutes, and a tunnel fire could last longer or achieve a higher temperature. Bay Mills’ initial brief on reopening, p. 15.

In the event of an explosion or fire in the proposed utility tunnel that results in a localized collapse of the tunnel lining, Bay Mills asserts that Line 5 product, pumped at its normal operating pressure, would escape the tunnel and migrate into the surrounding sediment and eventually into the waters of the Straits. Bay Mills’ initial brief on reopening, p. 16 (citing 18 Tr 2679). Bay Mills argues that Dr. Ferrara’s testimony and Explosion Study should be given little weight because he relied on findings derived from Mr. Godfrey’s POF Report, which has been shown to be unreliable. Additionally, Bay Mills states that in his Explosion Study, Dr. Ferrara failed to evaluate a worst-case scenario such as a full bore rupture. Moreover, Bay Mills asserts that the Explosion Study is not credible because it assumed that the tunnel is level and only 1,000 feet long, and the study only examined a pinhole sized failure. Finally, Bay Mills notes that the Explosion Study ignores the potential for methane to enter the tunnel via groundwater seepage.

Turning to the second prong of the Commission’s Act 16 analysis, Bay Mills argues that the reopened record fails to show that the Replacement Project will reduce or eliminate the environmental risks posed by the dual pipelines and that the tunnel simply replaces one set of risks for another. As an initial matter, Bay Mills avers that the probability analyses offered by Messrs. Godfrey and Bott should be disregarded “because the facts and data upon which they rely are not in evidence and the analyses do not consider worst case scenarios.” Bay Mills’ initial brief on reopening, p. 18. Accordingly, Bay Mills notes that it sought to strike the testimony of Messrs. Godfrey and Bott and Exhibits A-29 and A-32, which was denied by ALJ Saunders on April 11 and 12, 2023. Bay Mills states that it incorporates herein all the arguments made in its

April 25 application for leave to appeal. Bay Mills' initial brief on reopening, p. 19.³²

In addition, Bay Mills contends that Mr. Godfrey and his employer DNV lack credibility, noting that Mr. Philipenko testified that DNV's software is used to provide support to the CPM. Bay Mills' initial brief on reopening, p. 22 (citing 16 Tr 2282-2285). Bay Mills posits that Mr. Godfrey's conclusions cannot be considered objective in light of the fact that he is an employee of the company that licenses the software which forms the basis for the CPM. Bay Mills further notes that Mr. Warner testified that in 2016 the State of Michigan terminated a contract with DNV for cause due to a conflict of interest. Bay Mills' initial brief on reopening, p. 23 (citing 18 Tr 2804-2805). Bay Mills states that Mr. Godfrey's testimony and POF Report should be disregarded.

Next, Bay Mills asserts that Enbridge failed to appropriately quantify the risks of the Replacement Project. Bay Mills faults Mr. Godfrey's POF Report for failure to consider all types of scenarios including installation damage, vandalism, lightning strikes, and seismic activity. Bay Mills reiterates that none of the probability analyses considered a worst-case scenario, such as a full bore rupture inside the tunnel, and Bay Mills notes that a 0.315-inch hole in the pipeline is not a worst-case scenario. Bay Mills' initial brief on reopening, p. 26. Bay Mills contends that Enbridge should have looked at a scenario involving a large amount of oil NGLs, or flammable gases, accumulating within the tunnel.

³² The Commission notes that the arguments presented on this issue in Bay Mills' initial brief on reopening are almost identical to the arguments supporting the tribe's April 25 application for leave to appeal and will not be repeated here. The April 25 application for leave to appeal is addressed by the Commission *supra*.

Bay Mills also argues that the use of quantitative risk analysis is inappropriate and dangerous at the permitting stage of this type of project because it can downplay identified risks. Bay Mills asserts that “Enbridge gives no attention to the potentially catastrophic consequences of a pipeline failure within the tunnel. Instead, its analyses only offer mathematical conclusions, without supporting facts and data, suggesting that the likelihood of certain failure events is quite small.” *Id.*, p. 27. Bay Mills contends that low risk is not the same as no risk.

4. The Michigan Propane Gas Association and the National Propane Gas Association

The Associations support Enbridge’s application and argue that the additional evidence in the reopened record shows that the application meets all of the Act 16 criteria. The Associations state that Line 5 delivers a significant portion of the propane that is essential for the state of Michigan, and they argue that none of the proposals for addressing a propane supply shortage following a shutdown of the pipeline are viable. Citing the POF Report and the fact that the tunnel will act as secondary containment, the Associations argue that the reopened record shows that the Replacement Project is safer than the dual pipelines and will provide greater protection to the Great Lakes. Associations’ initial brief on reopening, p. 5. The Associations point to the testimony of Mr. Godfrey, Dr. Ferrara, and Dr. Vitton on the reopened record as showing that the Replacement Project is safe from both a release of product and an ignition of a release and is far superior to the dual pipelines.

5. Michigan Laborers’ District Council

MLDC supports Enbridge’s application for the Replacement Project, stating that “Line 5 currently provides direct and indirect employment to MLDC members in Michigan and throughout the region.” MLDC’s initial brief on reopening, p. 3. MLDC notes that construction of the Replacement Project is expected to employ about two hundred Michigan workers over a

multi-year period in an area of the state where jobs are needed. MLDC states that, once constructed, the tunnel and replacement pipe segment will provide hundreds of permanent maintenance jobs, and the Replacement Project will allow Michigan businesses to provide goods and services. In addition, MLDC contends that the Replacement Project will have a positive impact on local governments. *Id.*, p. 5. MLDC also notes that “Line 5 has current vulnerability, including being susceptible to potential damage from anchors dropped by ships using the Straits. The [Replacement] Project, MLDC understands, will reduce this vulnerability to near zero.” *Id.*, p. 6. In conclusion, MLDC asserts that Enbridge’s application has met all legal requirements and should be approved.

E. Reply Briefs on Reopening of the Record

1. Enbridge Energy, Limited Partnership

In its reply brief on reopening, Enbridge asserts that Bay Mills “focuses on highly-remote risks” and ignores the substantial environmental benefits offered by the Replacement Project in comparison to the dual pipelines. Enbridge’s reply brief on reopening, p. 2. Enbridge contends that the Replacement Project eliminates the risk of anchor strikes and pipeline stress caused by currents and offers the benefits of direct inspection of the pipeline, enhanced leak detection, and secondary containment.

Enbridge maintains that “[t]he extensive record in this case makes clear that Enbridge has adopted sound design, safety, and engineering principles to avoid and mitigate a fire and explosion. As a result, the likelihood of both a release and an ignition of that release is extraordinarily remote: one occurrence every 169 million years.” *Id.*, p. 3. Enbridge posits that Mr. Adams refuted Mr. O’Mara’s anecdotal theory of fire risk, and the company states that it is simply speculative to assume that a fire in the tunnel will burn longer and hotter than an RWS fire

event. *Id.*, p. 4. Finally, on this point, Enbridge argues that Dr. Ferrara showed that the worst-case explosion within the tunnel would create an overpressure well below what the tunnel is designed to withstand and notes that Bay Mills’ offered no overpressure calculations of its own.

Next, Enbridge highlights the benefit of secondary containment offered by the tunnel. Enbridge explains that the tunnel resembles an elongated storage tank and notes that it would take two days to fill; during that time, the pressure of the escaped product will equalize with the ambient pressure in the tunnel thus preventing a release into the lakebed. Enbridge states that “there is ‘no conceivable scenario’ where oil will penetrate the rocks and reach the Great Lakes” because groundwater will be forced into the tunnel at a pressure greater than the atmospheric pressure of the tunnel. *Id.*, p. 7 (quoting 17 Amended Tr 2475). Enbridge posits that any release will float on the water within the tunnel until it is recovered at the end portals. Accordingly, Enbridge asserts that the tunnel achieves the goal contained in the Third Agreement—namely, it will eliminate the risk of a release of Line 5 product into the Straits presented by the dual pipelines.

Regarding the issue of methane accumulation during construction and operation of the Replacement Project, Enbridge contends that it is a nonissue and that Bay Mills’ arguments are overstated. Enbridge notes that it has taken safety measures (despite the fact that there are no known sources of methane in the Straits) which include monitoring for methane during construction and operation of the tunnel, and the company has prepared mitigation and remedial actions, if needed. Enbridge’s reply brief on reopening, p. 8. In addition, Enbridge maintains that the GDR samples demonstrate that methane is not a concern and that the only detected methane resulted from naturally occurring decay in organic material near the shore.

In response to Bay Mills' claim that the GDR samples are unreliable, Enbridge notes that "Dr. Mooney already testified that the GDR was completed 'in accordance with the state of practice in tunnel design'" and that "Bay Mills never challenged Dr. Mooney's conclusions in the earlier phase of this proceeding, and only does so belatedly, and now only after it realized that the GDR samples unequivocally show that methane is not a concern." *Id.*, pp. 8-9 (quoting Exhibit MM-5, p. 6) (footnote omitted). Furthermore, Enbridge notes that, contrary to Bay Mills' claim, the USGS survey in Exhibit BMC-70 does not demonstrate that methane is a concern in the Straits area. Enbridge states that:

no witness testified that this document establishes the existence of gas and oil reserves in the Straits. In fact, the only witness to mention Exhibit BMC-70 was Dr. Vitton during his cross-examination, testifying that "there's nothing in this paper to suggest there is or are deposits there, this is strictly trying to identify an area that could be [utilized for] future exploration[.]"

Enbridge's reply brief on reopening, p. 10 (quoting 17 Amended Tr 2562). Enbridge also adds that the two tunnel explosions in the Great Lakes Basin caused by methane cited by Bay Mills are not analogous to the geologic conditions existing at the Replacement Project.

Turning to Bay Mills' request for Class 1, Division 1 equipment in the tunnel, Enbridge avers that Bay Mills' proposal should be rejected as simply an attempt to focus the Commission on a non-issue. First, the company notes that Mr. Godfrey has shown that the risk of ignition is once in every 169 million years and his conclusion assumes the use of Class 1, Division 2 electrical equipment. Second, Enbridge states that Mr. Godfrey testified that even the use of Class 1, Division 2 equipment is a conservative design decision because the NEC "**suggests that the tunnel could be considered an unclassified location (i.e., one that does not require either Class 1, Division 1 or Class 1, Division 2 equipment).**" Enbridge's reply brief on reopening, p. 12 (emphasis added to reply brief on reopening) (quoting 17 Amended Tr 2439). Third,

Enbridge notes that there is nothing in the record that demonstrates that the use of the higher standard will reduce the risk of ignition.

Enbridge also reiterates that installing Class 1, Division 1 equipment would increase the risk to human life because it would require personnel to spend longer periods of time in the tunnel for inspection and maintenance duties. In any event, Enbridge argues that certain non-permanent equipment, such as welding equipment, will never be able to meet this standard. Thus, the company concludes, no space-proofing exercise was required because Class 1, Division 1 equipment is not feasible, “and even if it were feasible, moving to the Class 1, Division 1 standard only adds risk to human health and safety with no demonstrable benefits.” Enbridge’s reply brief on reopening, p. 12.

Enbridge contends that Bay Mills failed to show that locating the replacement pipe segment on rollers in a tunnel is an unsafe design. The company notes that in the July 7 order, the Commission did not request any additional information on girth welds, heat affected zones, or pipelines placed on rollers. In addition, Enbridge points out that in the reopened record, Mr. Cooper repeated his sur-sur-surrebuttal testimony addressing the fact that the pipeline will not be buried, and Mr. Godfrey explained that the rollers decrease stress on the pipeline by distributing loads away from the welds. Enbridge argues that the only similarity between the Keystone failure and the Replacement Project is that the same type of pipe is used; however, there are important differences noted by Mr. Godfrey in his rebuttal testimony admitted on the reopened record. Enbridge’s reply brief on reopening, p. 15 (citing 17 Amended Tr 2454-2455). Enbridge contends that the replacement pipe segment will meet all PHMSA requirements under 49 CFR Part 195. Enbridge’s reply brief on reopening, p. 15.

Turning to the issue of leak detection, Enbridge asserts that it is only prudent (rather than imprudent) to rely on the PHMSA-required CPM and control room procedures. Enbridge argues that Bay Mills should address its safety-related concerns to PHMSA because that federal agency has exclusive jurisdiction over “leak detection and control room safety standards for interstate liquids pipelines. *See* 49 U.S.C. § 60104(c).” Enbridge’s reply brief on reopening, p. 16. Nevertheless, Enbridge asserts, Mr. Philipenko rebutted all of Bay Mills’ contentions. Specifically, Enbridge states that Mr. Philipenko demonstrated that the CPM is safe and reliable, reiterating that the CPM has successfully performed 97 fluid withdrawal tests at 22 different locations. *Id.* (citing 16 Tr 2258-2262). In addition, Enbridge avers that it has implemented the LDAM, which addresses Bay Mills’ concerns about shutdown capability. The company explains that the LDAM requires that three members of the ART independently assess each CPM alarm and within 10 minutes, “if any one of the members identify a leak trigger, then the pipeline will be shut down. If all three have not independently selected the alarm as invalid within that time, then the pipeline is automatically shut down.” Enbridge’s reply brief on reopening, p. 17 (citing 16 Tr 2264-2265). Enbridge asserts that it has improved its compliance with the 10-Minute Rule and has addressed all of the recommendations made by the NTSB in the wake of the Line 6B release.

Next, Enbridge asserts that Mr. Godfrey’s and Mr. Bott’s risk assessments meet industry standards and use appropriate data and methodology. Enbridge notes that, “[w]hile Bay Mills argues that the use of risk assessment in the permitting phase of [the] project is inappropriate,” the company disagrees, reasoning that risk assessment allows appropriate risk reduction measures to become part of the design, and, in this case, allows for comparisons between the Replacement Project and the dual pipelines. Enbridge’s reply brief on reopening, p. 20. Enbridge posits that

Exhibit ELP-24 (the Dynamic Risk Report) already provides the Commission with an assessment of the risk of release from the dual pipelines and argues that Exhibits A-29 and A-32 provide similar assessments for the Replacement Project. Enbridge's reply brief on reopening, pp. 20-21.

Enbridge contends that Mr. Bott's calculation of a one in one million POF is properly supported by data in Exhibit A-32, which is based on his analysis of actual failures experienced by Enbridge. The company restates that it installed over 10,000 km of pipeline between 2000 and 2022 and experienced only four releases and that the causes of those releases (ground movement or third-party damage) do not apply to the Replacement Project. Enbridge's reply brief on reopening, p. 22. Enbridge then modelled hypothetical typical flaws and arrived at the one in one million figure; however, the company states that the actual POF during real operation will be even lower. Enbridge's reply brief on reopening, pp. 22-23 (citing Exhibit A-32, p. 2). Enbridge contends that this data, too, is admissible because it is evidence of the type that is commonly relied upon by reasonably prudent persons in the conduct of their affairs. *Id.*, p. 23; *see*, Mich Admin Code, R 792.10427(1). The company concludes that "[t]he reopened record makes abundantly clear that the safety of the Great Lakes will be enhanced by locating the Line 5 replacement segment within the tunnel. The highly remote risks alleged by Bay Mills (which, notably, are inherent in any major project) have been fully studied, mitigated, and are in all instances outweighed by the secondary containment provided by the tunnel." Enbridge's reply brief on reopening, p. 23.

2. The Commission Staff

In its reply brief on reopening, the Staff argues that Bay Mills' comparisons to other pipeline failures are not appropriate because those failures occurred under conditions fundamentally different from the conditions that apply to the Replacement Project. The Staff notes that the

PHMSA Advisory Bulletin relied upon by Bay Mills states that these failure issues “were present on pipelines being constructed in hilly terrain and high stress concentration locations such as at crossings, streams, and sloping hillsides with unstable soils.” Staff’s reply brief on reopening, p. 2 (quoting Exhibit BMC-55, pp. 1-2). The Staff argues that Mr. Cooper’s testimony shows that the Replacement Project involves an entirely different environment that does not impose the kind of strains typical for buried pipes. The Staff contends that the Keystone failure is also inapplicable for the same reasons.

The Staff recommends exceeding the minimum OSHA standards for certain electric equipment to allow for Class 1, Division 1 equipment and states that the “Staff is not recommending the Commission impose such a requirement on all equipment in the tunnel. Instead, Staff’s position recognizes there may be opportunities to exceed this standard for certain equipment as the design is finalized.” Staff’s reply brief on reopening, p. 4. Referring to the fact that Enbridge has not yet purchased the equipment, the Staff reiterates that there may be opportunities to exceed the applicable Class 1, Division 2 standard for some equipment and recommends its use where “feasible, beneficial, safe, and permitted by the applicable agreements and permitting authorities.” *Id.*, p. 5.

The Staff refutes Bay Mills’ assertion that Enbridge is overly reliant on the CPM system. The Staff notes that the CPM system is actually three systems, which are complemented by a leak detection system that includes several different elements, each employing a different technology. The Staff notes that the control center can be alerted to a potential release by any one of these systems and elements. The Staff further notes that the pipeline already has an automatic shutdown system, which will activate in the event of a threshold pressure loss without human intervention.

The Staff posits that there is no evidence on the record showing that an additional shutoff system is required for safety purposes. *Id.*, p. 6.

The Staff contends that methane is not a likely source of fire or explosion in the tunnel. The Staff argues that Exhibit S-37 shows that at the low methane concentrations detected in the four GDR samples, it would take 800 to 2,400 years for those concentrations to accumulate at the LEL inside the tunnel. Turning to the issue of whether the GDR samples met relevant quality standards, the Staff states:

[w]hile [Bay Mills] notes that the GDR indicates that certain samples failed to meet certain parameters for analysis, there is no evidence showing failure to meet these parameters impacted the concentrations of methane detected in the samples, let alone to a level significant enough to reduce the time requirement (800 or 2400 years) to a time frame that would be of reasonable concern.

Id., p. 7. In addition, the Staff notes that the gas detectors in the tunnel will detect methane. *Id.* (citing 15 Tr 2090).

The Staff states that the USGS report contained in Exhibit BMC-70 relies on a model that includes assumptions about oil and gas within the Collingwood Formation and is based on a number of wells that were drilled to a depth at least 1,300 feet below the deepest spot for the tunnel (which is at a depth of 600 to 700 feet). The Staff asserts that the USGS report provides no factual evidence that there is methane at the depth of the Replacement Project and, therefore, it does not invalidate Dr. Vitton's conclusions. Staff's reply brief on reopening, p. 8.

The Staff further states that Mr. Adams refuted Bay Mills' argument regarding the risk of tunnel failure in the event of fire. The Staff contends that Mr. Adams' "assessment of the state of designing for potential fires in tunnels" is more current and more accurate, and he explained "that the inclusion of polypropylene fibers into the concrete mix typically has resulted in very little to no spalling observed." Staff's reply brief on reopening, p. 9. The Staff asserts that Mr. Adams

testified that the tunnel has been designed for the RWS fire event “in which the concrete is subjected to a temperature of 1200 degrees Celsius for 180 minutes” *Id.* The Staff notes that there is no record evidence showing that a fire of longer than 180 minutes would be significantly more damaging. Moreover, the Staff states that the RWS fire event “has been determined by experts in the industry as the appropriate standard-of-practice in designing for potential fires in tunnels, thus, the current design for the proposed tunnel meets applicable engineering and safety standards.” *Id.*, p. 10.

The Staff also argues that it is not plausible that, in the event of a tunnel failure, product will reach the Straits. According to the Staff, Bay Mills’ “claim that product would be forced out of the tunnel and migrate upward is based on several faulty assumptions as detailed in Staff’s initial brief.” Staff’s reply brief on reopening, p. 10. The Staff reiterates that Bay Mills’ arguments were mistaken with respect to the operating pressure and the hydraulic elements affecting a product release.

The Staff maintains that the record demonstrates that the Replacement Project would substantially reduce the environmental risks posed by the dual pipelines. The Staff notes that in Bay Mills’ initial brief, it acknowledges that the Commission must conduct a qualitative review of the Replacement Project. The Staff contends that such a review reveals a clear reduction to overall risk, particularly with respect to “anchor hooking, vortex-induced vibration from currents in the Straits, and spanning stress.” *Id.*, p. 11 (citing Exhibit ELP-24, p. 28). Additionally, the Staff asserts that if the Replacement Project is constructed, the exterior of the replacement pipe segment can be visually inspected more easily, and the tunnel will offer secondary containment.

The Staff disputes Bay Mills' claim that there is a reasonable risk that Line 5 product will be released from the Replacement Project into the Straits. For this to occur, the Staff asserts that an implausible chain of events is required:

Initially, a release must occur. Then, product must evade gas detectors (or gas detectors must malfunction) and accumulate in a portion of the tunnel at the LEL. (18 TR 2670.) At which point in time and location, an abnormal spark must occur to ignite the product. (*Id.* at 2676.) The ignition must then cause a fire to burn long and hot enough to damage the tunnel lining (despite concrete designed to withstand fire) to a point that would allow product to escape. (*Id.* at 2671, 17 TR 2570-71.) Then, the pipeline must continue to operate for two full days in order to fill the tunnel and reach a pressure that may overcome the surrounding hydrostatic pressure. (17 TR 2459, Exhibit S-16, pp 5-6.) Finally, the product must migrate through the geology upward, continuously overcoming downward water pressure, for a volume of product to eventually reach the waters of the Straits. (17 TR 2475.)

Staff's reply brief on reopening, p. 12. The Staff also posits that "it is incomprehensible to conclude that such a chain of events following a rupture from the proposed replacement segment is equally likely to reach the Straits as a rupture from the dual pipelines." *Id.*, pp. 12-13.

The Staff notes that according to Bay Mills, Mr. Godfrey "is 'tipping the scales' and that due to his employment with DNV, his analysis could not be objective." *Id.*, p. 13 (quoting Bay Mills' initial brief on reopening, p. 22). The Staff disagrees, asserting that Mr. Godfrey's employment status is not relevant nor is the fact that the State of Michigan terminated a contract with DNV seven years ago due to the actions of a different employee regarding a different issue. Staff's reply brief on reopening, p. 13.

Finally, the Staff states that it is not replying to the Associations or to MLDC.

3. Bay Mills Indian Community

Bay Mills asserts that Enbridge has failed to demonstrate that the Replacement Project meets or exceeds current safety and engineering requirements and thus the third prong of the Act 16 criterion is not satisfied. Bay Mills restates that:

Enbridge's central argument on remand—that a catastrophic failure in the tunnel is an extremely unlikely event—relies on a quantitative risk assessment that minimizes identified engineering risks by assigning a misleading numeric probability value to suggest that the proposed project is “safe.” As Mr. Kuprewicz testified, this assignment of probability estimates to known, identified risks during a permitting process is dangerous because it invites complacency.

Bay Mills' reply brief on reopening, p. 2 (quoting 17 Amended Tr 2622). Bay Mills also reiterates that the risk assessments, such as in Exhibits A-29 and A-32, cannot be checked for accuracy because the underlying data has not been made available and cannot be replicated. Bay Mills adds that Enbridge failed to recognize the interactive nature of risks and that a POF analysis for the tunnel should include “the sum total of all events, not just a reliance on one numerical value attached to one event.” Bay Mills' reply brief on reopening, p. 3 (footnote omitted).

In addition, Bay Mills asserts that Mr. Godfrey's quantitative risk analysis does not address Mr. Kuprewicz's concern regarding the design of the Replacement Project. Bay Mills argues that the installation of the replacement pipe segment on rollers will result in abnormal loading on the girth welds, a concern that is heightened by the use of grade X70 pipe. Moreover, Bay Mills notes that Enbridge's engineer of record, Arup, provided no testimony on the potential axial shear stress that the pipeline segment will experience. Bay Mills' reply brief on reopening, p. 4.

Bay Mills states that Enbridge also failed to support the decision to adjust Mr. Godfrey's calculated POF down by an order of magnitude. Bay Mills notes that Mr. Godfrey claims that the adjustment is appropriate because “Enbridge has an Integrity Management program that prevents failures from occurring and detects them should they occur. In essence, Godfrey suggests that Enbridge should be given a probability ‘credit’ because, in his view, Enbridge is unlikely to experience ‘operator error.’” *Id.*, p. 5 (footnote omitted). However, Bay Mills argues that Mr. Godfrey's conclusion is not credible because the PHMSA database (on which Mr. Godfrey

relies for his adjustment) notes that Enbridge had 20 incidents of operator error between 2002 and 2022.

Next, Bay Mills restates that Enbridge's explosion analysis failed to consider the worst-case scenario. Bay Mills explains that Dr. Ferrara's Explosion Study (Exhibit A-35) "only suggest[s] that a tunnel—about seven-times smaller than the one proposed—can withstand the overpressure generated by an explosion following a pinhole release; it proves nothing more." Bay Mills' reply brief on reopening, p. 7 (citing Exhibit A-35, p. 11). Bay Mills reiterates that a worst-case scenario would involve a full bore rupture of the pipeline, and instead, Dr. Ferrara "chose to run a model based on a tunnel that was level and only 1000 meters long; a release from a single hole that was 0.315 inches in diameter; a vapor cloud width, length, and height that did not fill the tunnel; and a constant atmospheric temperature, all of which were provided by Enbridge." Bay Mills' reply brief on reopening, pp. 7-8 (citing Exhibit A-35, pp. 8, 11). Accordingly, Bay Mills asserts that Dr. Ferrara's evidence should be given little weight. Bay Mills also contends that following the Marshall incident, the NTSB concluded that Enbridge had failed to plan for a worst-case discharge. Bay Mills argues that the Replacement Project is facing the same fate.

Bay Mills objects to Dr. Vitton's opinion that there is no methane in the area of the Replacement Project, asserting that his opinion is contradicted by the evidence on the record. Bay Mills refers to the USGS survey (Exhibit BMC-70) and states that shale oil has been identified in the geologic area (the Collingwood Formation) which lies directly under the Straits. Citing Exhibit BMC-70, Bay Mills states as follows:

Dr. Vitton responded that "there's nothing in this paper to suggest there is or are deposits there." Vitton Cross-Examination, 17 Tr. 2562. That is not accurate. For clarification, the Fact Sheet refers to "undiscovered, technically recoverable" oil and gas resources. Exh. BMC 70 at 1. The USGS assesses "undiscovered, technically recoverable resources" as those which are estimated to exist based on geological knowledge and theory. See <https://www.usgs.gov/faqs/what-difference->

[between-assessed-oil-and-gas-resources-and-reserves#:~:text=The%20USGS%20assesses%20%E2%80%9Cundiscovered%2C%20technically,on%20geologic%20knowledge%20and%20theory\[.\]](#)

Bay Mills' reply brief on reopening, p. 9, n. 40. Bay Mills asserts that Enbridge failed to investigate the rock at the deepest part of the Straits or the deepest elevation of the tunnel. Moreover, Bay Mills states that with four of the GDR samples showing methane, "the evidence suggests that methane could pose a risk to the construction and operation of the replacement pipeline." *Id.*, p. 10. Bay Mills also notes that Dr. Vitton contributed to a report submitted to the State of Michigan by Enbridge in 2018 (Exhibit A-9) which found that explosive gases, including methane and hydrogen sulfide, form a potential hazard in the Straits.

In addition, Bay Mills disputes Enbridge's claim that "there is 'no conceivable scenario' in which Line 5 product could escape the confines of the tunnel and migrate into the Straits" Bay Mills' reply brief on reopening, p. 11 (quoting 17 Amended Tr 2475). Bay Mills again asserts that Enbridge failed to consider a worst-case scenario, stating that the "hydrostatic pressure outside the tunnel will naturally push fractured rock, sediment, and water against the intact tunnel, or into a compromised tunnel, because the pressure inside the tunnel is essentially zero" Bay Mills' reply brief on reopening, p. 11. In the event there is an explosion in the tunnel, Bay Mills states that it "could ignite a product fire resulting in a fuel-rich flame from a large pool of hydrocarbons that burns for hours, *not 180 minutes*, and triggers additional explosions and fires throughout the length of the 4-mile-long pipeline filled with hazardous liquids." *Id.*, p. 12 (emphasis in original) (footnote omitted). Bay Mills asserts that this type of scenario could result in a "'pancake failure,' or a failure where the weight of the rock, sediment and water above the tunnel will cause the weakened portions of the tunnel segmented liner to fail and collapse inward." *Id.* (footnote omitted). Bay Mills contends that in this scenario, the tunnel interior will commingle with rock,

sediment, and water, and the secondary containment feature will be lost while the product in the pipeline escapes. Bay Mills states that the product's operating pressure of 463 psi will significantly exceed the hydrostatic pressure, including the pressure at the deepest part of the tunnel. *Id.*, p. 13, n. 56.

Bay Mills avers that although Enbridge touts its leak detections systems and automatic shutdown procedures as effective and almost instantaneous, the company has experienced numerous releases due to operator error in the past 20 years. Accordingly, Bay Mills asserts that there is no reason to believe that Enbridge's LDAM system will effectively detect and prevent a catastrophe with the Replacement Project. Bay Mills contends that a full bore rupture will fill the tunnel "with tons of product in a matter of minutes" and an explosive environment will have already been created even if the leak is detected. *Id.*, p. 14. Turning to Enbridge's assertion of a one in one million risk of release, Bay Mills argues that Enbridge initially pulled the number out of thin air (though presented it as evidence) and then later described it as a reliability target for the IMP rather than as a probability of release. *Id.*, p. 15.

Bay Mills notes that the Commission requested information in the July 7 order on the feasibility of exceeding OSHA standards and using Class 1, Division 1 electrical equipment. However, Bay Mills contends that Enbridge failed to provide that information and simply indicated that it is unclear whether it is feasible. Bay Mills notes that "[t]he only reason the feasibility of using a more stringent electrical classification for the proposed tunnel remains *unclear* is because Enbridge, as the applicant, failed to supply the information that the Commission ordered it to produce." *Id.*, pp. 16-17 (emphasis in original). Bay Mills argues that Class 1, Division 1 equipment will reduce the risk of an ignition in a location where hazardous

gases or vapors may exist and that a requirement to use this type of equipment is entirely appropriate.

Bay Mills further contends that Enbridge has made clear that the purpose of the ventilation system is not to prevent a catastrophic accumulation of hydrocarbon vapor in the tunnel. Rather, Bay Mills states that according to Enbridge, the ventilation system is designed strictly to provide “‘breathable air’ when maintenance personnel are in the tunnel.” *Id.*, p. 18 (quoting Exhibit A-31, p. 4). In any event, Bay Mills contends that Enbridge has not shown that the ventilation system is adequate, stating that:

Enbridge calculated the critical velocity needed to be achieved to provide personnel with an exit path clear of smoke in the event of a fire. However, the “design fire size” used in the calculation was “10 MW.” That measurement is “representative of a large vehicle fire.” The size of a large vehicle fire cannot be said to be comparable to the size or intensity of a fire resulting from a breach of Line 5, and even less so to a full-bore rupture of the line—a 4-mile-long segment transporting 540,000 barrels per day—releasing roughly 16,000 gallons per minute. Enbridge has suggested only that its proposed ventilation system will allow workers a path out of the tunnel in the event of a car fire; it has proved nothing more.

Id., pp. 18-19 (citing Exhibit A-31, p. 4, and 7 Tr 564).

Furthermore, Bay Mills maintains that Enbridge has failed to show that its fire response system meets or exceeds current safety and engineering standards. Bay Mills notes that the company has proposed a passive fire suppression system that simply seals off the ends of the tunnel to starve a fire of oxygen. Bay Mills argues that Enbridge needs an active fire suppression system such as the FFFS and an advanced ventilation system that will remove smoke. Bay Mills observes that Enbridge based its decision on the need to reduce the presence of workers in the tunnel, and yet the evidence shows that workers will routinely be entering the tunnel. Bay Mills’ reply brief on reopening, p. 19 (citing 16 Tr 2194).

Regarding the second prong of the Act 16 analysis, Bay Mills asserts that Enbridge has not shown that the Replacement Project eliminates the risks associated with the dual pipelines, asserting that “the tunnel substitutes one set of risks for another.” Bay Mills’ reply brief on reopening, p. 20. Bay Mills states that the dual pipelines are not safe and have been shut down by court order. While acknowledging that anchor strikes and bending stresses may be alleviated by the tunnel, Bay Mills argues that the design of the Replacement Project presents its own unique and specific risks including the possibility of explosion arising from a heavier-than-air vapor release that settles in the lowest spot in the tunnel and is ignited. Bay Mills notes that the siting of a hazardous liquid pipeline within a tunnel has never been attempted before and contends that it has “the potential to create a catastrophe in the Great Lakes.” *Id.*, p. 22.

Finally, Bay Mills states that it is not responding to the initial briefs filed by MLDC and the Associations because they do not comply with Mich Admin Code, R 792.10434 in that they include factual assertions without citations to the record. *Id.*, pp. 23-24.

4. Michigan Propane Gas Association and National Propane Gas Association

In their reply brief, the Associations support Enbridge’s application and state that they disagree with Bay Mills’ arguments regarding the evidence presented by Mr. Godfrey and Mr. Bott. The Associations’ reply brief on reopening, pp. 1-2.

5. Michigan Laborer’s District Council

In its reply brief, MLDC supports Enbridge’s application and states its disagreement with Bay Mills’ arguments regarding the evidence presented by Mr. Godfrey and Mr. Bott. MLDC’s reply brief on reopening, pp. 1-2.

VII. LEGAL FRAMEWORK

Enbridge's application requests that the Commission grant the company authority to construct and operate the Replacement Project pursuant to Act 16 and Rule 447. As set forth in the title, the purpose of Act 16 "is to regulate the business of carrying or transporting, buying, selling, or dealing in crude oil or petroleum or its products" and "to provide for the control and regulation of all corporations, associations, and persons engaged in such business, by the Michigan public service commission" In addition, Section 1(2) of Act 16, MCL 483.1(2), states in relevant part:

A person exercising or claiming the right to carry or transport crude oil or petroleum, or any of the products thereof . . . by or through pipe line or lines . . . or exercising or claiming the right to engage in the business of piping, transporting, or storing crude oil or petroleum, or any of the products thereof . . . does not have or possess the right to conduct or engage in the business or operations, in whole or in part, or have or possess the right to locate, maintain, or operate the necessary pipe lines, fixtures, and equipment belonging to, or used in connection with that business . . . except as authorized by and subject to this act.

Moreover, the Commission has broad jurisdiction over the construction and operation of pipeline facilities and has the "authority to review and approve proposed pipelines, and to place conditions on their operations." March 7, 2001 order in Case No. U-12334 (March 7 order), p. 13, citing *Lakehead*; *see also*, January 31, 2013 order in Case No. U-17020, p. 5. The Commission has previously found that "[i]nherent in that jurisdiction is the power to make a qualitative evaluation regarding whether a proposed system would be safe and in the public interest." March 7 order, p. 14.

Pursuant to Section 8 of Act 16, MCL 483.8, the Commission has authority to make rules, regulations, and orders to give effect to and enforce the provisions of Act 16. Accordingly, the Commission promulgated Rule 447, which states in relevant part:

(1) An entity listed in this subrule shall file an application with the commission for the necessary authority to do the following:

(c) A corporation, association, or person conducting oil pipeline operations within the meaning of 1929 PA 16, MCL 483.1 to 483.9, that wants to construct facilities to transport crude oil or petroleum or any crude oil or petroleum products as a common carrier for which approval is required by statute.

Rule 447 (1)(c). In the June 30 order, the Commission found that Enbridge was required by Act 16 and Rule 447 to file an application for authority to construct and operate the Replacement Project. June 30 order, pp. 61, 66-67.

The July 23 order sets forth the criteria by which the Commission reviews an Act 16 application: “Generally, the Commission will grant an application pursuant to Act 16 when it finds that the applicant has demonstrated a public need for the proposed pipeline and that the proposed pipeline is designed and routed in a reasonable manner, which meets or exceeds current safety and engineering standards.” July 23 order, pp. 4-5.

In addition to this three-part test, courts have found that state agencies have an obligation to apply the requirements of MEPA to its decisions, including to Commission pipeline siting cases. *State Hwy Comm v Vanderkloot*, 392 Mich 159, 189-190; 220 NW2d 416 (1974) (*State Hwy Comm*); *Buggs I*, p. 9. Section 5 of MEPA, MCL 324.1705, provides, in pertinent part:

(1) If administrative, licensing, or other proceedings and judicial review of such proceedings are available by law, the agency or the court may permit the attorney general or any other person to intervene as a party on the filing of a pleading asserting that the proceeding or action for judicial review involves conduct that has, or is likely to have, the effect of polluting, impairing, or destroying the air, water, or other natural resources or the public trust in these resources.

(2) In administrative, licensing, or other proceedings, and in any judicial review of such a proceeding, the alleged pollution, impairment, or destruction of the air, water, or other natural resources, or the public trust in these resources, shall be determined, and conduct shall not be authorized or approved that has or is likely to have such an effect if there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare.

Accordingly, Section 5(2) of MEPA, MCL 324.1705(2), requires that in an administrative permitting proceeding, an agency must determine whether the conduct under review will pollute, impair, or destroy natural resources, and, if likely so, the proposed conduct shall not be approved if a feasible and prudent alternative exists that is consistent with the reasonable requirements of the public health, safety, and welfare. The substantive duty that is placed on administrative agencies and courts by Section 5(2) of MEPA is separate from the procedural rights afforded under Section 5(1) of MEPA. *State Hwy Comm*, 392 Mich at 185-186, 190-191; *Buggs I*, p. 9.

VIII. DISCUSSION

As an initial matter, the Commission notes that ED 2019-17 directs State agencies to “provide feedback to the tribe(s) involved in the consultation [process] to explain how their input was considered in the final decision or action.” ED 2019-17, ¶ 2(d). The Commission has reviewed Exhibits S-25, S-34, S-35, S-36 and the comments filed on the record and finds that the concerns expressed during the Tribal consultation process and in comments were formally presented on the record for the Commission’s consideration. Pursuant to its obligations under ED 2019-17, the Commission has fully considered the concerns presented by the Tribes in the Commission’s Act 16 and MEPA analyses below.

To determine whether Enbridge’s application for authority to construct and operate the Replacement Project should be approved, the Commission begins with the Act 16 analysis.

A. Is There a Public Need to Replace the Line 5 Segment that Crosses the Straits of Mackinac and Relocate the Segment to a Concrete-lined Tunnel Below the Lakebed of the Straits?

Enbridge asserted that the execution of the First, Second, and Third Agreements and the enactment of Act 359 demonstrate that there is a public need for the Replacement Project. *See*, Enbridge’s initial brief, pp. 11-13. The Associations agreed. Associations’ initial brief, pp. 9-12.

The Staff also contended that the execution of the Second and Third Agreements and the enactment of Act 359 “determined it to be in the public’s interest” to replace the dual pipelines with a new segment located in a tunnel beneath the lakebed of the Straits. Staff’s initial brief, p. 110. The MEC Coalition and Bay Mills argued that Enbridge failed to demonstrate a public need for the Replacement Project and that the Commission should deny Enbridge’s application. *See*, MEC Coalition’s reply brief, pp. 6-10; Bay Mills’ reply brief, pp. 6-13.

The Commission begins its discussion of the public need for the Replacement Project by noting the Michigan Supreme Court’s 1954 finding that the construction and operation of Line 5, as a whole, was “for a public use benefiting the people of the State of Michigan.” *Lakehead*, p. 37. Further, as noted in the April 21 order, the Commission reaffirms its finding that “the first issue is whether there is a public need to carry out the Replacement Project, a project to replace the dual pipelines with a new pipeline in a tunnel, and does not concern approved, existing pipeline that is merely interconnected with the segment that is the subject of the application. The public need for the existing portions of Line 5 has been determined. The public need for the Replacement Project has yet to be determined.” April 21 order, p. 63.

To determine whether there is a public need for the Replacement Project, the Commission begins by examining the record evidence explaining the rationale for the proposal to replace the dual pipelines with the Replacement Project.

The Commission notes that on February 22, 2016, the State of Michigan issued a Request for Information and Proposals:

to provide the State of Michigan and other interested parties with an independent, comprehensive analysis of alternatives to the existing Straits Pipelines, and the extent to which each alternative promotes the public health, safety and welfare and protects the public trust resources of the Great Lakes. The work [should] not include a recommendation by the contractor of a preferred alternative. Rather, the work [should include] the development of information that can be used by the State

[of Michigan] and other interested parties in making decisions about the future of the Straits Pipelines.

Exhibit ELP-24, p. 4. In response to the State of Michigan's request, on October 26, 2017,

Dynamic Risk completed the Alternatives Report that analyzed alternatives to the dual pipelines.

Dynamic Risk noted that "[t]he scope of work addressed within the analysis includes an

independent review of the risks associated with Enbridge Pipelines' existing [dual pipelines]"

Id.

The Commission reviewed the Alternatives Report and notes that according to Dynamic Risk:

the Principal Threats that were found to contribute to the operating risk on the existing 20-[inch] Straits Crossing segments are, in order of decreasing contribution, anchor hooking, incorrect operations, vortex-induced vibration (VIV), and spanning stress. . . . As shown in Figure ES-4, the dominant threat, representing more than 75% of the annualized total (all-threat) failure probability, is that of anchor hooking caused by the inadvertent deployment of anchors from ships traveling through the Straits.

Exhibit ELP-24, p. 28; *see*, 12 Tr 1716. Dynamic Risk also provided a technical evaluation of six alternatives to the dual pipelines that included, for each alternative, a design-based cost estimate, an economic feasibility analysis, the socioeconomic impact, the market impact, and a spill risk analysis.

Alternative 1 in the Alternatives Report involved constructing a new pipeline that does not cross the open waters of the Great Lakes. Dynamic Risk explained that it explored two routes for the pipeline: (1) a northern route through Canada, around the Great Lakes, and south to Sarnia, Ontario, Canada, and (2) a southern route that follows existing Enbridge assets south to Chicago, Illinois, east to Marysville, Michigan, and east to Sarnia, Ontario, Canada. Dynamic Risk stated that the "northern new-build option was filtered out at a very advanced stage of analysis, after full design and costing were conducted and economic feasibility indicators were developed." Exhibit ELP-24, p. 46. Dynamic Risk asserted that the southern route for a pipeline includes 75 major

crossings (rail, highway, and watercourses), 17 of which would be in Michigan, it would cost \$225 million/year upon start-up, and it would cost \$165 million/year to operate. *See*, Exhibit ELP-24, pp. 25, 316, 359.

In its analysis for Alternative 2, Dynamic Risk considered whether existing Canadian and American pipeline infrastructure that does not cross the open waters of the Great Lakes could be used to carry the volume of petroleum products currently being shipped on Line 5 from Superior, Wisconsin, to Sarnia, Ontario, Canada. Dynamic Risk concluded that:

the relatively short length and limited excess capacity in the available sections (Stockbridge-Sarnia and North Bay-Barrie), combined with the limited information on availability of the TransCanada line, mean that Alternative 2 would nonetheless still require that significant new infrastructure be built to complement this excess capacity. From that perspective, Alternative 2 is not significantly different enough from Alternative 1. Therefore, a separate cost analysis was not completed for Alternative 2.

Also, as there is no meaningful partial capacity within existing infrastructure, any attempt to rely on Alternative 2 is essentially equivalent to the full abandonment option (Alternative 6b).

Exhibit ELP-24, p. 307.

For Alternative 3, Dynamic Risk analyzed alternative methods of transportation such as rail, tanker trucks, and oil tankers and barges in the event that Line 5 is decommissioned in Michigan and Line 5 product will need transportation from Superior, Wisconsin, to Sarnia, Ontario, Canada.

Dynamic Risk asserted that:

[t]o handle the Line 5 volumes would require 2,150 trucks per day on average, or an average of 90 trucks leaving the terminal every hour, 24 [hours] per day. . . . This rate of added vehicles will put significant strain on the existing infrastructure including wear and tear on public roadways. The probability of accidents associated with such heavy vehicle traffic makes it likely that spills will happen.

ELP-24, p. 348. For oil tankers and barges, Dynamic Risk stated that:

[t]anker transportation of crude oil and NGLs from Superior to Sarnia would have to pass through the locks on the St. Marys River at Sault Ste. Marie. The Soo

Locks are aging and in need of substantial investment to bring them back to reliable operation for this additional traffic. Should a problem arise or a restriction be placed on these locks[,], the feasibility of this option is severely limited.

Additionally, the Soo Locks between Lake Superior and Lake Huron are closed for repairs from January 15th to March 25th, or two and a half months, each year. To accommodate this situation, volumes would need to be transported by another means or storage capacity would be required in the Superior and Sarnia areas to handle the large buffer volume required.

Id., p. 349. Regarding the rail option, Dynamic Risk noted that:

[a]ccommodating Line 5's capacity of 450,000 bbl/d of crude oil, and 90,000 bbl/d of NGL would require approximately 800 rail cars per day on average. Considering unit trains comprised of 100 cars, this option would require 8 unit trains per day. Weather and other potential interruptions that may impact a large number of trains would need to be considered. A buffer storage volume of product would need to be available and the fleet of railcars would need to be large enough to catch up within a set period of time.

Id., pp. 349-350. For rail transportation of Line 5 petroleum products, Dynamic Risk calculated a construction cost of \$907 million and an operating cost of \$1,220 million/year. *See, id.*, p. 25.

Although Dynamic Risk stated that the increased rail transportation may negatively impact urban and farm areas and may pose an environmental threat to over 1,000 other aquatic environments in Michigan in the event of a rail accident and spill, Dynamic Risk found it to be the most practical and cost-effective option of the Alternative 3 transportation options. *See, id.*, pp. 349-350.

In Alternative 4, Dynamic Risk analyzed a tunneling option. Dynamic Risk estimated that the total cost of the tunneling project would be approximately \$153 million, but that the \$95 million/year operational costs of the existing Line 5 system would remain the same and there would be negligible impacts to the market. *See, id.*, pp. 230-232. Dynamic Risk contended that the tunneling option would require the procurement of shoreline locations, but stated that there are potentially available undeveloped sites along the shoreline. In addition, Dynamic Risk asserted that “[g]ood rock conditions and minimal water inflow are anticipated at the Straits and no adverse

geotechnical conditions are known to exist which would negate tunneling as an option.” *Id.*, p. 229. Dynamic Risk noted that there may be some socioeconomic factors to consider during construction of the tunnel, including air pollution, noise impacts, and limited housing for workers. In its risk assessment of Alternative 4 and the likelihood of Line 5 products entering the Great Lakes, Dynamic Risk stated that “the risks associated with the potential for a release of Line 5 products to enter the waters of the Great Lakes from a Straits tunnel crossing of a design, as proposed, is considered to be negligible, and un-quantifiably low.” *Id.*, p. 275.

For Alternative 5, Dynamic Risk conducted “a comprehensive engineering study of the current condition and operation of the existing pipeline segments based on an evaluation of design, materials properties, installation procedures, operating conditions, as well as a review of Enbridge’s assessment data and integrity standards.” Exhibit ELP-24, p. 88. Dynamic Risk asserted that continued operation of the dual pipelines presented no *new* operating costs, socioeconomic impacts, or environmental concerns. However, after conducting a threat assessment of the dual pipelines, Dynamic Risk noted that:

[w]hile there have been no incidents involving anchor strike (drag/drop) in the operating history of the Straits pipelines (68), it must be noted that with respect to the above vulnerability factors, the Straits Crossing segments cross a busy shipping lane (see Figure 2-5), where they lie exposed on top of lakebed with no protective cover. They also are situated in water that is shallow, relative to the anchor chain lengths of most cargo vessels. Furthermore, a 20-[inch] diameter pipeline is small enough to fit between the shank and flukes of a stockless anchor for a large cargo vessel, and thus, is physically capable of being hooked.

Exhibit ELP-24, p. 123.

In Alternative 6, Dynamic Risk considered a scenario in which service on the dual pipelines was eliminated. Dynamic Risk analyzed the resulting market impacts and assessed alternatives for the delivery of propane to Michigan retailers and customers. *See, id.*, pp. 276-278.

The Commission notes that on November 27, 2017, following publication of the Alternatives Report, the State of Michigan and Enbridge executed the First Agreement, which stated that “the continued operation of Line 5 through the State of Michigan serves important public needs by providing substantial volumes of propane to meet the needs of Michigan citizens, supporting businesses in Michigan, and transporting essential products, including Michigan-produced oil to refineries and manufacturers” Exhibit A-8, p. 1; *see*, 7 Tr 565-566. The First Agreement also stated that “the State [of Michigan] and Enbridge desire to establish additional measures and undertake further studies with respect to certain matters related to Enbridge’s stewardship of Line 5 within Michigan and the transparency of its operation.” Exhibit A-8, p. 2. Accordingly, the First Agreement required Enbridge to perform an additional Alternatives Analysis for three options that were selected for replacing the Straits Line 5 segment: (1) installation in a tunnel below the lakebed of the Straits, (2) installation using an open-cut method that includes secondary containment, and (3) installation using HDD. The First Agreement noted that the Alternatives Analysis should compare the feasibility of construction, the associated costs, engineering considerations, the potential environmental impacts and mitigation measures, and the risk of failure for the three alternatives. After analyzing the three alternatives, Enbridge concluded that the tunnel option was feasible, had the least impactful environmental construction process, and that there was “no credible scenario that would result in a release of product into the Straits.” Exhibit A-9, p. 67; *see*, 7 Tr 566-568.

In addition, the Commission notes that according to MSCA’s witness, Mr. Cooper, there are two other possibilities for replacing the Straits Line 5 segment that were not considered in the Alternatives Report or Enbridge’s Alternatives Analysis: suspending a replacement pipeline from the Mackinac Bridge or constructing a new suspension bridge to house the replacement pipe

segment. He concluded that it would not be practical to suspend the Straits Line 5 replacement pipe segment from the Mackinac Bridge because:

[t]he pipeline would add load to the Mackinac Bridge for which it was not designed and would tend to shorten the 64-year-old bridge's useful life. Maintenance of the pipeline would be challenging if it were suspended below the bridge deck, especially in the winter months. A suspended pipeline could include secondary containment, but a concurrent failure of pipe and casing would release product into the waters of the Straits.

9 Tr 1238. Regarding a new suspension bridge, Mr. Cooper asserted that this option would be difficult and expensive to maintain, at risk for aircraft and wind impacts, and cause visual impacts to the scenic beauty of the Straits. Similar to the option of suspending a pipeline from the Mackinac Bridge, he noted that a new suspension bridge with a pipeline and secondary containment feature would suffer from the same threat of concurrent failure of the pipe and casing, thus releasing product into the Straits.

A Second Agreement between the State of Michigan and Enbridge was executed on October 3, 2018. The Commission finds that the Second Agreement includes the same sentence regarding public need for the continued operation of Line 5 that is contained on page 1 of the First Agreement. Exhibit A-10, p. 1. However, the Commission finds that the Second Agreement identified a second element of public need: protection of public resources. Specifically, the Second Agreement stated that:

the State and Enbridge recognize that the Straits Crossing and the St. Clair River Crossing (collectively "Crossings") are located in the Great Lakes and connecting waters that include and are in proximity to unique ecological and natural resources that are of vital significance to the State and its residents, to tribal governments and their members, to public water supplies, and to the regional economy, and the Crossings are also present in important infrastructure corridors

Exhibit A-10, p. 2. The Second Agreement noted that:

Enbridge prepared and submitted to the State [of Michigan] the report entitled *Alternatives for replacing Enbridge's dual Line 5 pipelines crossing the Straits of*

Mackinac (June 15, 2018) (“Alternatives Analysis”). That Alternatives Analysis concluded that construction of a tunnel beneath the lakebed of the Straits connecting the upper and lower peninsulas of Michigan, and the placement in the tunnel of a new oil pipeline, is a feasible alternative for replacing the Dual Pipelines, *and that alternative would essentially eliminate the risk of adverse impacts that may result from a potential oil spill in the Straits*

Id., p. 5 (emphasis added); *see*, 7 Tr 566-567.

On December 18, 2018, the Third Agreement between the State of Michigan and Enbridge was executed to fulfill the parties’ obligations as set forth in the Second Agreement. The Third Agreement stated that “[t]he replacement of the Dual Pipelines with the Straits Line 5 Replacement Segment in [a] Tunnel is expected to eliminate the risk of a potential release from Line 5 at the Straits.” Exhibit A-1, p. 4; *see*, 7 Tr 567.

Further, the Commission notes that concurrent with the Third Agreement, the Michigan Legislature enacted Act 359. Section 14a(1) of Act 359, MCL 254.324a(1), states in relevant part that “[t]he Mackinac bridge authority may acquire, construct, operate, maintain, improve, repair, and manage a utility tunnel” connecting the Upper and Lower Peninsulas. Notably, Act 359 also states that “[t]he carrying out of the Mackinac bridge authority’s purposes, including a utility tunnel, are for the benefit of the people of this state and constitute a public purpose.” MCL 254.324a(5).

In accordance with the obligations set forth in the Second Agreement and Act 359, the State of Michigan and Enbridge executed the Tunnel Agreement on December 18, 2018. *See*, MCL 254.324d(4); 7 Tr 567. The Tunnel Agreement states in relevant part: “The Tunnel, subject to the design and engineering work including the Geotechnical Investigations required under this Agreement, is to . . . be constructed of a suitable structural lining, providing secondary containment to prevent any leakage of liquids from the Line 5 Replacement Segment into the lakebed or Straits.” Exhibit A-5, p. 10; *see*, 7 Tr 567.

Additionally, in 2018, the DNR granted MSCA a new easement in the Straits for the Replacement Project, which was then assigned to Enbridge. *See*, Exhibit A-6.

Based on a review of this record evidence, the Commission finds that as noted by Enbridge, the Staff, and the Associations, the First, Second, and Third Agreements and Act 359 demonstrate that there is a public purpose and public need to replace the dual pipelines with the Replacement Project. The Commission also notes that the Associations point to the DNR's granting of a new easement for the tunnel to MSCA as recognizing the need for the Replacement Project, as well as EGLE's granting of the NREPA Parts 303 and 325 permits, where "EGLE 'considered the concerns raised by comments that this project is in the public interest, and . . . determined that . . . the project is in the public interest.'" Associations' initial brief, p. 10 (quoting Exhibit A-18, p. 8). However, the Commission finds Dynamic Risk's Alternatives Report and testimony presented by the Staff and the Associations to be particularly informative in determining public need for the Replacement Project.

For Alternative 6 in the Alternatives Report, Dynamic Risk assessed "the potential market and economic impacts of eliminating all transportation of petroleum products and [NGLs] through the segment of Enbridge's Line 5 which crosses the Straits of Mackinac. The crossing would then be abandoned and potentially all of Line 5 would be abandoned if the fragmented segments could not be effectively used." Exhibit ELP-24, p. 276. According to Dynamic Risk, if Line 5 was abandoned in full or in part, Enbridge would need to secure alternative supply sources to continue current refinery and petro-chemical operations, it may require plant or infrastructure modifications and capital additions, and it would require replacement access to alternative markets to secure sufficient supply, which is likely to increase transportation costs and tariffs. *See, id.*, p. 278.

Dynamic Risk also noted that:

[i]n 2015, Michigan consumed 460 million gallons of propane, with propane being distributed from several [in-state] storage and distribution terminals. Of this, approximately 430 million gallons were consumed in the Lower Peninsula. The Michigan Lower Peninsula is itself an important United States hub for natural gas and propane storage, which permits secure supplies of storage to be available to consumers in the Lower Peninsula. Line 5 does not deliver any NGLs directly to the Lower Peninsula, but deliveries to Sarnia approach 90 kbbbl[kilobarrels]/[day]. Flows of propane from Sarnia to Michigan are estimated to be 25 kbbbl/[day]; this is equivalent to about 380 million gallons annually and represents a significant proportion of total demand within Michigan.

Id., p. 280 (footnote omitted).

Further, Dynamic Risk noted that:

[t]he assessment carried out for Alternative 6b focused on the impacts to energy facilities within the [s]tate of Michigan that rely on Line 5 for the receipt or delivery of commodities to their respective facilities. The alternative transportation chosen and estimated costs are presented in Table 4-5. In addition, the Sarnia fractionator was identified as an important potential source of propane into the Michigan storage and distribution hub.

* * *

Additionally, the incremental feedstock costs for the refineries may translate into higher refined product costs for gasoline and distillates of 2.13¢/[gallon] throughout the [s]tate of Michigan. Assuming the incremental cost is passed through to Michigan consumers, who consume 5,700 million [gallons]/[year], this cost equates to \$121 million/[year].

Exhibit ELP-24, p. 300.

Moreover, Mr. Sloan, who testified on behalf of the Associations, stated that if Line 5 in Michigan was abandoned in full or in part, there have been no proposals to:

address the increases in propane prices that are widely expected to occur in the absence of Line 5. In the near term, the replacement option for Line 5 is increased reliance on rail and truck transport. However, neither would be capable of offsetting the loss of Line 5 given the lack of existing infrastructure at locations dependent on propane deliveries manufactured from Line 5 volumes.

8 Tr 906. Mr. Sloan also asserted that alternatives to propane heating in Michigan, such as heat pumps, are (at this time) prohibitively expensive for propane customers. *See*, 8 Tr 909-919.

Similarly, Staff witness Mr. Morese contended that a shutdown of the dual pipelines would not immediately alter demand for the products shipped on Line 5, and consequently the modes of transportation for crude oil and NGLs would shift to rail and truck. *See*, 12 Tr 1771-1777, 1791-1792, 1801-1807; *see also*, 9 Tr 948, 974, 1092.

The Commission recognizes that there have been a number of steps taken in recent years by market participants to develop alternative sourcing options for propane and petroleum products. However, a determination of public need is not limited to whether other sourcing options may exist. For example, in the decision approving Enbridge's application to replace sections of its Line 6B in 2013, the Commission found that, "[o]n the issue of public need . . . Enbridge's shipper and refinery customers both have a present need for additional pipeline capacity." January 31, 2013 order in Case No. U-17020, p. 22. In the present case, the public need is not based on the need for additional capacity, but on the ongoing reliance on the current capacity of the dual pipelines, even as other sourcing options emerge. Furthermore, the Commission finds that there is substantial evidence on the record in the present case to show that if the dual pipelines are damaged, deemed inoperable due to safety concerns, or shutdown, Line 5 in Michigan may be abandoned in full or in part, which will require higher-risk and costlier alternative fuel supply sources and transportation to Michigan customers than what is proposed in the Replacement Project. *See*, ELP-24, pp. 278, 300; 8 Tr 906, 908-919; 12 Tr 1777-1778. Thus, the Commission finds that there is a public need for the products shipped through the Straits Line 5 segment. The evidence in this case, in addition to the official findings of public need and public benefit identified in Act 359 and the First, Second, and Third Agreements, clearly supports a finding of public need for the Replacement Project.

In addition, the Commission notes that the stated purpose behind the Replacement Project is to alleviate the risk of a spill and that this rationale further supports the public need to replace the dual pipelines with the Replacement Project. The Alternatives Report identified several threats to the integrity of the dual pipelines in their current configuration, the dominant threat being anchor hooking with the potential for a spill into the Great Lakes. *See*, Exhibit ELP-24, pp. 28, 123. The Commission also finds that alternative modes of transporting Line 5 products, such as truck, rail, oil tankers and barges, will likely increase environmental impairment and may increase the threat of spills that could significantly damage the Great Lakes, the state's terrestrial environment, and more than 1,000 other aquatic environments in Michigan. *See*, Exhibit ELP-24, pp. 348-350, 362-367.

The Commission also reviewed Enbridge's Alternatives Analysis, which evaluated construction feasibility, costs and engineering, environmental impacts, and approvals and authorizations necessary for three alternatives to the dual pipelines: (1) relocating the Straits Line 5 segment to a tunnel beneath the lakebed of the Straits, (2) relocating the Straits Line 5 segment using HDD, and (3) relocating the Straits Line 5 segment using an open-cut method that includes secondary containment. *See*, Exhibit A-9, p. 5; 12 Tr 1722. According to the Alternatives Analysis, Alternative 2 is not feasible to construct and was withdrawn from consideration. *See*, Exhibit A-9, p. 53. When Enbridge compared Alternatives 1 and 3, the company noted that for Alternative 1, the "[r]isk of product release into the Straits" is "negligible—considered virtually zero." *See*, Exhibit A-9, pp. 9, 14, 64, 66, 68; *see also*, 8 Tr 800, 822, 825; 12 Tr 1717, 1723. For Alternative 3, Enbridge noted that the "[r]isk of product release into the Straits" is "an extremely low value." *See*, Exhibit A-9, pp. 9, 32, 68.

Furthermore, the Alternatives Analysis conducted a preliminary evaluation of the potential environmental impacts for constructing Alternative 1, relocating the Straits Line 5 segment to a tunnel, and constructing Alternative 3, relocating the Straits Line 5 segment using an open cut method with secondary containment. *See*, Exhibit A-9, pp. 14, 32, 60-62. The Alternatives Analysis concluded that Alternative 1 was the “[l]east impactful construction process—[it] would have no impact to shores [sic] lines or [the] lakebed; marine work [would] only [be] required during the geotechnical program,” whereas Alternative 3 would result in “[c]onstruction impacts to the shore lines and [the] lakebed; marine work [would be required] for two consecutive summer seasons, plus one summer season for geotechnical investigation/surveys.” Exhibit A-9, p. 67. Thus, it was determined that Alternative 1 would cause the least environmental damage. *See*, 12 Tr 1868-1869. The Commission agrees.

The Commission notes that when asked if there are alternative methods for protecting the dual pipelines, Staff witness Mr. Warner testified that a study was conducted to determine whether a physical barrier of engineered gravel/rock cover could be installed to protect the dual pipelines. Mr. Warner stated that:

the protective cover would need to be approximately 72 feet wide and a minimum of eight feet high from the lakebed to reach a minimum height of six feet from the top of the existing Dual Pipelines. The report also explains that this type of covering would cost approximately \$150 million to install along the entire length that the Dual Pipelines are exposed on the lakebed. As an alternative, this covering could be installed only in areas where the Dual Pipelines are within the shipping channel with a buffer on each side, totaling approximately 2,000 feet of covering for each of the Dual Pipelines. A consultant hired for the study anticipated that a physical barrier of this design would result in a 99-percent reduction in the probability of an intentional or unintentional anchor strike causing a release of the Dual Pipelines.

* * *

One significant consideration was that the protective barrier would eliminate the ability to visually inspect the outside of the pipeline using a remote operated

vehicle (ROV) or with divers as is done currently. The report explains that Enbridge would continue to assess the integrity of the Dual Pipelines using in-line inspection tools. . . . Additionally, installation of the barrier would likely cause environmental impairments and would require at least 11 state and federal environmental permits and approvals.

12 Tr 1721-1722 (footnote omitted). Mr. Warner noted that the State of Michigan declined to support this alternative.

Mr. Warner contended that if the Commission does not approve the Replacement Project, “the Dual Pipelines would continue operating on the lakebed of the Straits unless and until Enbridge determines to voluntarily cease operations or a legal or regulatory action forces Enbridge to cease operations. Further, the safety benefits and protections of the proposed replacement within a tunnel would not be realized.” 12 Tr 1728. Mr. Warner “conclude[d] that the replacement of the Dual Pipelines with a new pipeline in a tunnel below the lakebed serves a public need, is in the public interest, and is the best option out of the alternatives described above. . . . There are no alternatives that would be feasible and prudent when compared to the proposed Replacement Project.” 12 Tr 1736.

Accordingly, the Commission finds that the Replacement Project “essentially eliminates the risk of adverse impacts that may result from a potential release from Line 5 at the Straits” and protects “unique ecological and natural resources that are of vital significance to the State and its residents, to tribal governments and their members, to public water supplies, and to the regional economy.” Exhibit A-10, pp. 2-3.

In conclusion, the Commission finds that Enbridge has established both the public need for the products to be shipped through the Replacement Project and the need to relocate the Straits Line 5 segment inside the tunnel, and as such, has established the public need for the Replacement Project.

B. Are the Replacement of the Line 5 Segment that Crosses the Straits of Mackinac and the Relocation of the Segment to a Concrete-lined Tunnel Below the Lakebed of the Straits Designed and Routed in a Reasonable Manner?

Enbridge asserted that the Replacement Project is designed and routed in a reasonable manner because the pipeline is being routed through a tunnel deep beneath the lakebed of the Straits, thus eliminating the risk of anchor strikes and providing secondary containment in the unlikely event of a release. In addition, Enbridge stated that the tunnel easement is located within the shortest distance between the Upper and Lower Peninsulas. Enbridge's initial brief, pp. 22-28. The Associations agreed. Associations' initial brief, p. 13. Although the Replacement Project "is heavily constrained by the existing onshore Line 5 segments, the tunnel easement, geotechnical considerations, and the planned tunnel alignment," the Staff contended that the route and location of the Replacement Project are reasonable. Staff's initial brief, pp. 49-52. FLOW, Bay Mills, and the MEC Coalition argued that Enbridge failed to demonstrate that the Replacement Project is designed and routed in a reasonable manner and asserted that the Commission should deny Enbridge's application. Bay Mills' initial brief, pp. 13-28; FLOW's initial brief, pp. 11-17; MEC Coalition's reply brief, pp. 49-51; Bay Mills' reply brief, pp. 14-43.

The Commission notes that the Tunnel Agreement provided a general description of the tunnel's design, location, and construction process:

Project Description - The Tunnel, subject to the design and engineering work including the Geotechnical Investigations required under this Agreement, is to: (i) be approximately four (4) miles in length, extending from an opening point as near as practical to Enbridge's existing station located on the north shoreline of the Straits to an opening point as near as practical to Enbridge's existing Mackinaw station located on the south shoreline of the Straits; (ii) except for the opening points on either side of the Straits, be constructed entirely underground, below the lakebed of the Straits; (iii) be approximately ten (10) feet in finished diameter or other diameter that is deemed by Enbridge to not be greater than that necessary to efficiently construct the Tunnel and to construct, operate and maintain a 30-inch Line 5 Replacement Segment, in which Third-Party Utilities, including but not limited to electric and broadband cables, may also be housed, provided that:

(a) such Third-Party Utilities do not increase the diameter of the Tunnel beyond that necessary to construct, operate, maintain and use a 30-inch Straits Line 5 Replacement Segment; and (b) the presence of such Third-Party Utilities is not incompatible with the operation, maintenance or use of the Line 5 Replacement Segment; (iv) be designed and constructed in accordance with prevailing, state of the practice tunnel standards and specifications for a design life of no less than ninety-nine (99) years; and (v) be constructed of a suitable structural lining, providing secondary containment to prevent any leakage of liquids from the Line 5 Replacement Segment into the lakebed or Straits.

Exhibit A-5, p. 10, ¶ 6.1. In addition, the Tunnel Agreement stated that MSCA:

has or will acquire from [DNR] a Tunnel Easement that will provide [MSCA] with the lawful right to enter, occupy, and use, lands beneath the lakebed of the Straits of Mackinac necessary for the construction, use, operation, and maintenance of the Tunnel . . . which will include the right to construct a liquid hydrocarbon pipeline within the Tunnel, and which will allow and authorize assignment to Enbridge in accordance with this Agreement.

Exhibit A-5, p. 6. On December 17, 2018, DNR conveyed an easement to MSCA to construct a tunnel under the lakebed of the Straits, which included the option to assign the easement rights.

See, Exhibit A-6, pp. 1-2. On December 19, 2018, MSCA assigned the easement to Enbridge. *Id.*, pp. 5-6. In addition to constructing the tunnel beneath the lakebed of the Straits, Enbridge will “tie-in, operate, and maintain approximately 0.4 to 0.8 miles of pipe to connect the replacement pipe segment to Enbridge’s existing Line 5 on both sides of the Straits,” which will be located in workspace on land Enbridge owns or has the right to access. 7 Tr 556; *see also*, 7 Tr 561.

Intervenors Bay Mills and FLOW objected to the route and location of the Replacement Project. Bay Mills argued that the location of the Replacement Project will harm important cultural landscapes, historical sites, and threatened and endangered species in the Straits. *See*, Bay Mills’ initial brief, pp. 13-19. FLOW asserted that the Commission may not approve the Replacement Project unless and until the 2018 easement and the 2018 assignment of easement are authorized under public trust law and the GLSLA. *See*, FLOW’s initial brief, pp. 11-17.

In response to Bay Mills' claim that the proposed location of the Replacement Project may disturb sensitive cultural, historical, and natural sites, the Staff asserted that DNR, EGLE, SHPO, and the USACE possess the legal authority to review the Replacement Project and its impact upon these sites, and the Staff argued that these reviews should not be duplicated by the Commission. *See*, Staff's reply brief, pp. 21-35. In addition, the Staff contended that it complied with ED 2019-17 and the Commission's "Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission" in good faith, and the Staff averred that it engaged in meaningful and mutually beneficial communication and collaboration with Michigan's 12 federally recognized Tribes. *See*, Staff's initial brief, pp. 36-48; *see also*, 12 Tr 1653-1655; Exhibits S-2, S-3, S-25, S-30, S-34. Although Bay Mills expressed some disagreement with the Staff's characterization of the consultation process, Bay Mills acknowledged that:

the status of the . . . Staff and Bay Mills as litigants in a formal administrative proceeding hampered the free-flowing exchange of ideas that is necessary for effective consultation. Simply put, in its conversations with the . . . Staff, Bay Mills could not describe in detail the tribe's concerns about the proposed tunnel project because Bay Mills was working with its attorneys to prepare testimony and exhibits about those concerns.

10 Tr 1436-1437; *see*, 10 Tr 1438. Ultimately, the Staff recommended that the Commission approve Enbridge's Act 16 application contingent upon approval from other state and federal permitting agencies.

The Commission finds the Staff's position on this issue persuasive, concluding that there are several cultural, historical, and environmental characteristics of the Replacement Project that are within the regulatory authority of separate state and federal agencies. As noted by ALJ Mack in his initial ruling, "some degree of deference must be afforded those determinations." ALJ Mack's initial ruling, p. 17. EGLE is the state agency charged with the duty to issue NREPA Parts 31,

303, and 325 permits; SHPO is the state agency that assists USACE with the Section 106 review; and USACE is the federal agency authorized to prepare an EIS, conduct a Section 106 review, and issue a Section 10 permit pursuant to the Rivers and Harbors Act of 1899, 33 USC 403, and Section 404 of the Clean Water Act, 33 USC 1344. *See*, 12 Tr 1702.

However, the Commission notes that several Staff witnesses examined the permits and agency reviews and made recommendations. Staff witnesses Mr. Douglas and Ms. Mooney reviewed the environmental permits and proposed several improvements to Enbridge's EIR, which Enbridge addressed. *See*, 7 Tr 610-624; 12 Tr 1835-1836, 1849-1850; Exhibits A-9, A-12, S-18, S-19. In addition, in the NREPA Parts 303 and 325 permits, EGLE stated that "SHPO recommended [an] additional survey to identify historic properties in the project area (November 10, 2020). This recommendation will remain under consideration during the Section 106 consultation process." Exhibit A-17, p. 7. Furthermore, Staff witness Mr. Warner noted that according to USACE's website:

[Enbridge's] application will be reviewed under Section 106 of the National Historic Preservation Act and that the USACE will consult with [SHPO] and federally recognized tribes. Relating to threatened and endangered species, the website further explains that USACE will review the potential impacts of the tunnel project on federally listed threatened and endangered species pursuant to Section 7 of the Endangered Species Act. Once the USACE determines that the biological assessment is adequate for consultation, the [USACE] will initiate formal consultation with the U.S. Fish and Wildlife Service.

12 Tr 1711. Accordingly, the Commission agrees with the Staff and finds that the route and location of the Replacement Project should be approved conditioned upon Enbridge obtaining the required governmental permits and approvals. The Commission acknowledges that the USACE review is ongoing and finds that significant changes to the design of the tunnel directed by USACE shall be inconsistent with the approval granted in this case and may require further review and approval by the Commission.

Next, the Commission notes that in response to FLOW, the Staff stated that “the Commission’s four [Act 16] criteria do not require an applicant to obtain all property rights for a proposed project before approval.” Staff’s reply brief, p. 24. According to the Staff, an Act 16 applicant may acquire the rights to property through eminent domain and that these rights may be obtained after the Commission grants approval of the Act 16 application. The Staff stated that, in fact, “the Commission has indeed granted approval in Act 16 proceedings where additional easement rights would be required.” *Id.* The Commission agrees. *See*, MCL 483.1-483.2; *see also*, January 31, 2013 order in Case No. U-17020, pp. 9-12, 24-30.

Responding to FLOW’s argument that the Replacement Project has not been authorized by public trust law, the Staff noted that FLOW “appears to indicate that the determination under the public trust doctrine should be made by the DNR—the agency that granted the easement.” Staff’s reply brief, p. 26. In the Staff’s opinion, FLOW fails to demonstrate that the Commission has a legal obligation to “evaluate the validity of other State agencies’ actions in this Act 16 proceeding.” *Id.* The Commission agrees.

Turning to the issue of whether the design and route of the Straits Line 5 replacement segment in an underground tunnel is reasonable, Enbridge claimed that relocation of the pipe segment to a tunnel eliminates the possibility of anchor strikes, virtually removes the likelihood of bending stress, provides the ability for direct examination of the pipe segment exterior, allows for enhanced leak monitoring, and provides secondary containment in the unlikely event of a release. *See*, 17 Amended Tr 2446; Exhibit S-32, pp. 3-4.

The Commission notes that MSCA’s witness Dr. Mooney testified that Arup, “a global engineering firm,” was employed to design the tunnel. 9 Tr 1210. He asserted that Arup’s design team has an impressive depth of knowledge and design skills and “extensive experience in North

America and internationally” designing tunnels like the Replacement Project. 9 Tr 1210. In Dr. Mooney’s opinion, Arup engaged “key experts from around the world” to ensure that the tunnel is designed to withstand “high groundwater pressure, face stability with reduced pressure, ground characterization, etc.” and that the tunnel design meets or exceeds industry standards. 9 Tr 1212. Dr. Mooney also noted that the tunnel is routed within the 2018 easement and in a vertical alignment to stay within the bedrock beneath the Straits. 9 Tr 1218; *see*, Exhibit A-13.1. Furthermore, Dr. Mooney argued that “[p]lacing Line 5 inside the tunnel reduces the risk of leaking product reaching the Great Lakes to practically zero. . . . This is a notable reduction in environmental risk from the current dual pipeline configuration on the lakebed.” 9 Tr 1204; *see*, 8 Tr 788; 17 Amended Tr 2445; Exhibit A-13.

Dr. Mooney noted that according to paragraph 5.3 of the Tunnel Agreement, MSCA must employ an “Independent Quality Assurance Contractor with appropriate technical expertise to monitor the construction of the Tunnel and provide information to [MSCA].” Exhibit A-5, pp. 9, 13; *see*, 9 Tr 1213. Dr. Mooney also stated that the Tunnel Agreement directs Enbridge to develop and provide MSCA with a Tunnel O&M Plan that will ensure a 99-year design life for the tunnel and “continued physical integrity for secondary containment purposes.” Exhibit A-5, p. 14; *see*, 9 Tr 1205, 1216.

The Commission notes that Staff witness Mr. Adams reviewed the feasibility of constructing the tunnel, the anticipated methods, and the use of PCTL. In his opinion, the tunnel design proposed by Enbridge “has a proven record for providing a stable and mostly watertight tunnel system” and will “result in a very low probability of fluids escaping from the tunnel.” 12 Tr 1816; *see*, 12 Tr 1817-1818; Exhibit S-16, p. 2; Exhibit A-9, pp. 14-31.

However, Staff witness Mr. Ponebshek provided several recommendations for tunnel construction. Mr. Ponebshek stated that he:

would recommend a more detailed risk management plan be delivered to the State [of Michigan] ahead of construction. This plan would include a description of the planned geotechnical test bores and frequency of probe-hole testing ahead of the TBM and should include reporting of both test-bore data and probe-hole data in real time so that the State [of Michigan] can assess risks and construction plan modifications based on the data. The plan should also include inspections for concrete cast sections prior to moving them into the tunnel and after being put into place, placement of gaskets, regular analyses of bentonite mix properties, [and] changes in slurry pressure. Deviations from and modifications to the plan during the construction process should be reported and available for public review.

12 Tr 1872-1873. Enbridge did not explicitly respond to Mr. Ponebshek's recommendations.

The Commission notes that Bay Mills argued that Enbridge's proposal to locate a liquid petroleum pipeline within a tunnel is a "first-of-its-kind" design and that "[t]he evidence in the record demonstrates that Enbridge's untested proposal is neither reasonably routed nor designed." Bay Mills' initial brief, pp. 1, 13. Bay Mills' witness Mr. Kuprewicz testified that "[f]rom an engineering standpoint, there is a potential for a release into the Straits from the tunnel by way of a catastrophic explosion. While a risk of release in this manner may be considered low, it is not negligible" 10 Tr 1326. Bay Mills asserted that an explosion could result from vapors accumulating in the tunnel from a leak in the pipeline, a failure in the ventilation system, and a spark from electrical equipment or human error. *See*, 10 Tr 1327-1328; 18 Tr 2670-2671. According to Mr. Kuprewicz, this type of catastrophic explosion has "the potential of shattering concrete, especially segment concrete linings. In short, an explosion would cause a high-pressure event that would put the concrete structures at risk. This in turn runs the risk of releasing material into the Straits." 10 Tr 1330.

Bay Mills' witness Mr. O'Mara also testified that dissolved methane could enter the tunnel during excavation or through continual seepage of groundwater and create an ignition source. *See*,

18 Tr 2675-2676. Bay Mills contended that Enbridge has failed to properly calculate the probability of an explosion and tunnel failure and that the company has not adequately designed the tunnel and its systems to avoid the risk. *See*, 10 Tr 1328, 1332-1333, 1367-1368; 17 Amended Tr 2622-2629; 18 Tr 2670-2675, 2679-2682. To help prevent this scenario, Bay Mills recommended that: (1) all electrical equipment in the tunnel comply with Class 1 Division 1 specifications; (2) Enbridge perform proper girth welding techniques and inspections; (3) the gas detection systems be designed with independency and redundancy, and that the detectors be placed in proper locations in the tunnel; and (4) the secondary leak detection system “incorporate mandatory (even automatic) pipeline shutdown/isolation and tunnel ventilation procedures,” and that “the system be designed to not generate false signals/alarms.” 10 Tr 1333; *see*, 10 Tr 1328-1329, 1368, 1370-1374.

Enbridge disagreed with Bay Mills that the Replacement Project is unique and untested, noting that although there are no other pipelines in North America that transport NGLs through an underground tunnel, there are several tunnels worldwide that transport hydrocarbons. *See*, Exhibit BMC-41, p. 21.³³ The Alternatives Analysis also provides several examples of hydrocarbon pipelines within tunnel structures. *See*, Exhibit A-9, pp. 11, 13-15.

Next, Enbridge asserted that because the risk of release from the Straits Line 5 replacement segment in the tunnel is less than 0.000001, there is virtually no risk of explosion in the tunnel. *See*, 8 Tr 800-803; 16 Tr 2322; 17 Amended Tr 2437-2438, 2448-2450; 18 Tr 2589-2590, 2593, 2810-2811; *see also*, Exhibits S-31 and S-32. In addition, Enbridge stated that it does not expect to encounter methane at a level to cause concern. 17 Amended Tr 2465-2470. However, Enbridge

³³ Because Exhibit BMC-41 is not paginated, the Commission clarifies that page 1 starts in natural order with the first page of the documents in the exhibit.

contended that to address the potential risk of encountering methane during construction, the TBM will be equipped with monitors to detect methane. Enbridge stated that if methane is detected at significant levels during construction, the company will adjust its design and operations of the project. After completion of the Replacement Project, Enbridge averred that the gas monitors installed in the tunnel are capable of detecting methane. 15 Tr 2090.

Enbridge averred that in the unlikely event of an explosion and high-intensity fire in the tunnel, the concrete lining of the tunnel will maintain its integrity. 15 Tr 2092-2093. However, if a portion of the lining were to fail, Enbridge contended that Line 5 products would not migrate into the strata around the damaged lining. *See*, 15 Tr 2093; 17 Amended Tr 2458, 2475; Exhibit A-35.

Enbridge's witness Mr. Dennis asserted that there is no need for an FFFS in the tunnel because "[t]he risk of a fire in the tunnel housing the Replacement Project is extremely low and when compared to the added risk to human safety of sending personnel into the tunnel to maintain such a system, the balance of risks weighs in favor of not installing such a system." 15 Tr 2095. In any event, Mr. Dennis claimed that there will be no ignition sources in the tunnel and that "[t]here are numerous methods to detect and shutdown the replacement pipe segment in the extremely unlikely event of a release." 8 Tr 802; *see*, 8 Tr 803-804, 867-868.

Enbridge argued that it provided an overview of its pipeline integrity, gas monitoring and leak detection systems, and human error in detecting a failure, and the company responded to Bay Mills' concerns regarding the leak and gas detection systems for the Replacement Project. 15 Tr 2096-2097; 16 Tr 2256-2265, 2323-2324; 17 Amended Tr 2446-2448, 2456-2458. Additionally, Exhibits A-13, A-29, S-31, and S-32 describe Enbridge's plans for leak and gas detection, ventilation, sump pumps, the TSV, and emergency procedures. *See*, Exhibit A-13, pp. 15-17;

Exhibit S-31, p. 9; Exhibit S-32, pp. 3-4, 7. Furthermore, Enbridge added a second layer of leak detection to the existing CPM system. 9 Tr 1246-1247. Finally, Enbridge asserted that the use of Class 1 Division 2 equipment in the tunnel “is a conservative design decision and errs on the side of safety.” Enbridge’s initial brief on reopening, p. 23. Enbridge argued that the use of Class 1 Division 1 equipment is inconsistent with the National Electric Code, may not be feasible, and may create other safety concerns. *See, id.*, p. 24; *see also*, Exhibit A-31, p. 7.

The Staff noted that it reviewed Enbridge’s “methodology and assumptions used by [DNV] to estimate the [POF] of the pipeline and the Probability of Ignition within the proposed tunnel” and found that it “did not raise any additional concerns” 18 Tr 2792; *see*, 18 Tr 2794. In the Staff’s opinion, Enbridge’s design and operation of the leak and gas detection systems and the Staff’s recommended girth weld procedures address Mr. Kuprewicz’s concerns. *See*, Staff’s initial brief, pp. 68-69; *see also*, 18 Tr 2792. Regarding Mr. Kuprewicz’s concerns with the tunnel’s ventilation system and human presence in the tunnel, the Staff noted that the ventilation system exceeds OSHA requirements and that Enbridge has implemented procedures to avoid human contact with harmful vapors and to prevent an ignition source. *See*, Staff’s initial brief, pp. 66-67; *see also*, Exhibit A-31, p. 4; 18 Tr 2792. However, the Staff stated that if the Commission approves the Replacement Project, the Commission should recommend “that certain equipment be designed to the more stringent Class 1, Division 1 standard to the extent such equipment is feasible, beneficial, safe, and permitted by the agreements and other permitting authorities governing the project.” Staff’s initial brief on reopening, pp. 17-18 (footnote omitted); *see*, Exhibit S-31, p. 13.

Next, the Commission notes that the Second Agreement, Act 359, and the Tunnel Agreement require that the design of the tunnel allow for the accommodation of third-party utilities, so long as

they are not incompatible with the operation of the Line 5 Replacement Project. *See*, Exhibit A-10, p. 6; MCL 254.324d(4); Exhibit A-5, p. 7, ¶ 3.3 and pp. 48-51; *see also*, Exhibit A-11, p. 14.

The Tunnel Agreement stated, in relevant part, that the tunnel:

be approximately ten (10) feet in finished diameter or other diameter that is deemed by Enbridge to not be greater than that necessary to efficiently construct the Tunnel and to construct, operate and maintain a 30-inch Line 5 Replacement Segment, in which Third-Party Utilities, including but not limited to electric and broadband cables, may also be housed, provided that: (a) such Third-Party Utilities do not increase the diameter of the Tunnel beyond that necessary to construct, operate, maintain and use a 30-inch Straits Line 5 Replacement Segment; and (b) the presence of such Third-Party Utilities is not incompatible with the operation, maintenance or use of the Line 5 Replacement Segment

Exhibit A-5, p. 10, ¶ 6.1. In addition, the Alternatives Analysis stated that:

[w]hile increasing the TBM size to accommodate future third-party utilities is not specifically considered in this report, Hatch [Ltd] confirmed that increasing the tunnel size would not impact the feasibility of tunneling under the Straits. Tunnels are scalable in size and can be designed to accommodate a variety of services. **For a Straits tunnel, it would be critical to understand before design and engineering begins whether the tunnel could have a purpose beyond the pipeline, such as for third-party services/assets, and specifically risks associated with co-locating different types of infrastructure.** A scope change of this magnitude just before construction would limit or potentially eliminate the options for accommodating additional services.

Exhibit A-9, p. 26 (emphasis added).

Accordingly, Enbridge's Tunnel Design and Construction Report provided a design for the tunnel to accommodate the 30-inch liquid petroleum pipeline and future third-party utilities. *See*, Exhibit A-13, pp. 20-22, 26. The Tunnel Design and Construction Report stated that:

Provisions have been made to accommodate the future installation for third-party electric and telecommunication utilities:

- Electrical Power Circuits: the tunnel and portal Facilities will accommodate up to two (2) 230[kilovolt] circuits comprising of 3No 1000 kilocircular mils phase conductors, a ground and a communications cable.
- Telecommunications: space in tunnel for a thirty-six-inch (36-inch) cable tray.

Third-party utilities shall seek access to utilize the tunnel in accordance with the procedures established in the Tunnel Agreement executed by [MSCA] and Enbridge. Third-party utilities shall be responsible for the means and methods of construction including but not limited to provisions to prevent any damage to the pipeline/facilities or other existing third-party utilities including cable installation, operational fault conditions and any electric magnetic field mitigation required to prevent induced currents.

Exhibit A-13, pp. 8-9. Specifically, Dr. Mooney testified that the tunnel “will also serve as a conduit for third party utilities to cross the Straits, including possibly broadband telecommunications, high voltage electrical and other utilities that may become apparent and of need during the service life of the tunnel.” 9 Tr 1204; *see*, 9 Tr 1203, 1214-1216; Exhibit MM3, pp. 22, 162.

Dr. Mooney also sponsored Exhibit MM3, which is Enbridge’s draft request for proposals (RFP) for a design services contractor and a construction manager-general contractor. Section 2.5.2.1 of the draft RFP states that “[t]unnel systems shall be controlled to maintain acceptable operating temperature and humidity conditions for the pipeline and third-party utilities, and to maintain combustible gases at or below acceptable levels.” Exhibit MM3, p. 165.

When asked if he had concerns about locating third-party utilities in the proposed tunnel, MSCA’s witness Mr. Cooper stated that he is “concerned that future utilities could impact the pipeline’s integrity or create safety hazards for maintenance personnel. For example, an electric transmission cable installed within the tunnel could create induced electric current in the pipeline. This could potentially accelerate corrosion of the pipeline and create electric shock hazards for personnel working on the line.” 9 Tr 1247. He asserted that this risk could be mitigated by a thorough consideration of the hazards presented by third-party utilities in the planning and design stage, by implementing measures to protect against these hazards, and by continually monitoring the threats and protection measures. 9 Tr 1248.

MSCA stated that it “is aware that third-party utility Peninsula Fiber Network LLC has expressed interest in operating in the tunnel” but, “[o]ther than Peninsula Fiber Network, MSCA is not aware of any other Prospective Third-Party Utilities that have provided in writing a formal request with scope of use information.” Exhibit BMC-44, p. 4. Bay Mills noted that according to a letter sent by American Transmission Company (ATC) to the Chippewa Ottawa Resource Authority, ATC would not locate electric cables in the tunnel because it is too dangerous. Exhibit BMC-46, p. 92.³⁴ However, the ATC letter referenced by Bay Mills in Exhibit BMC-46 was not provided on the record for the Commission’s review.

In a discovery response, Enbridge stated that:

[t]he tunnel is also designed to accommodate third-party utilities and third-party access would be subject to separate agreements with [MSCA]. (See, e.g., Exhibit A-5 pp. 53-56.) It is uncertain whether a third-party utility’s equipment could meet the overly stringent standard of Class 1, Division 1, or whether meeting this standard would be feasible. Finally, it is uncertain whether [MSCA] could or would impose the overly stringent standard of Class 1, Division 1 on a third-party utility seeking access to the tunnel.

Exhibit A-31, p. 7.

Although Enbridge contended that the tunnel is designed to accommodate third-party utilities and third-party access, the POF Report does not take into account the presence of third-party installations. *See*, 9 Tr 1214; Exhibit A-13, pp. 8-9, 20-22, 26. The POF Report stated that in reference to the inputs used to conduct the probability of ignition, “[t]hese inputs are as per the current design and do not contemplate any future installations by third party utilities within the tunnel as those would need to be separately addressed.” Exhibit A-29, p. 16.

³⁴ Exhibit BMC-46 contains a collection of separate documents that is not paginated as a single exhibit. Therefore, the Commission clarifies that page 1 starts in natural order with the first page of the documents following the cover page labeled “Exhibit BMC-46.”

In its initial brief, Enbridge noted that “MCL 254.314d(4)(g) requires utilities using the tunnel to obtain any required governmental approvals for use. Given Act 16 provides the Commission siting authority over petroleum pipelines, Enbridge filed this Application to use the utility tunnel. On the other hand, telecommunication providers would not need such approval to use the utility tunnel for their facilities.” Enbridge’s initial brief, p. 15, n. 11.

After a review of the record evidence on this issue, the Commission finds that the route, location, and design of the Straits Line 5 replacement segment in a tunnel beneath the lakebed of the Straits is reasonable and should be approved, subject to conditions. As discussed above, provided that Enbridge receives the required governmental permits and approvals and there are no significant changes to the route and location of the Straits Line 5 replacement segment within the tunnel following Commission approval of this application, the Commission finds that the route and location of the Replacement Project are reasonable.

Regarding the design and physical integrity of the tunnel as a fixture, secondary containment feature, and route for the Straits Line 5 replacement segment, the Commission finds that Enbridge has demonstrated by a preponderance of the evidence that the tunnel has been designed by an experienced and knowledgeable engineering firm and that the tunnel will be constructed using state-of-the-art materials and practices that will meet or exceed industry standards. In addition, the Commission finds, by a preponderance of evidence on the record, that the Replacement Project is a significant improvement over the dual pipeline configuration currently installed in the Straits because it virtually eliminates the risk of anchor strikes confronting the dual pipelines and it will serve as a secondary containment vessel to prevent Line 5 product from reaching the Straits. Although the intervenors presented concerns about the integrity of the tunnel lining, explosion risk, methane infiltration, fire, leak and gas detection systems, ventilation, and human error, the

Commission finds that, subject to the conditions below, there is a preponderance of explanatory and convincing evidence on the record to rebut these concerns. However, the Commission recommends that Enbridge adopt Mr. Ponebshek's proposal, which is set forth at 12 Tr 1872-1873, to provide a detailed risk management plan to the State of Michigan, ahead of construction, regarding geotechnical test bores and related data and real-time reporting, concrete cast section inspections, placement of gaskets, analyses of bentonite mix, and any changes in slurry pressure.

In addition, the Commission agrees with the Staff that after a review of the evidence presented on the reopened record, there may be opportunities to design certain equipment in the tunnel to a Class 1 Division 1 standard. Therefore, the Commission recommends that to the extent feasible, beneficial, safe, and permitted by agreements and other permitting authorities, all equipment be designed to the more stringent Class 1 Division 1 standard. The Commission finds that this recommendation provides additional safety and risk mitigation in the event of an "accidental rupture or breakdown of [closed] containers or systems, or in case of abnormal operation of equipment" associated with the Straits Line 5 replacement segment. Exhibit A-31, p. 6.

Although the Commission finds that the route, location, and design of the Straits Line 5 replacement segment in a tunnel beneath the lakebed of the Straits is reasonable, the Commission finds that Enbridge failed to demonstrate by a preponderance of the evidence that co-locating third-party utilities in the tunnel with the Straits Line 5 replacement segment is reasonable or safe. The question here is not whether telecommunications providers require Commission approval to locate their facilities within the tunnel. They do not, and pursuant to Act 359 and the Tunnel Agreement, the decision of whether to allow third-party utilities access to the tunnel rests with MSCA. However, as Enbridge notes, "Act 16 provides the Commission siting authority over petroleum pipelines," and as such "Enbridge filed this Application to use the utility tunnel."

Enbridge's initial brief, p. 15. In its Act 16 review determining whether the project is designed and routed in a reasonable manner, the Commission must consider the risks to the pipeline, including any risks that could be introduced within the tunnel by third parties. As noted by the Alternatives Analysis, it is "critical to understand before design and engineering begins whether the tunnel could have a purpose beyond the pipeline, such as for third-party services/assets, and specifically risks associated with co-locating different types of infrastructure." Exhibit A-9, p. 26.

The Commission notes that the Second Agreement, Act 359, and the Tunnel Agreement specifically state that the tunnel could accommodate electric transmission lines and data and telecommunications facilities. There is testimony and record evidence demonstrating that co-locating electric cables with the Straits Line 5 replacement segment within the tunnel is dangerous and could "accelerate corrosion of the pipeline and create electric shock hazards for personnel working on the line." 9 Tr 1247; *see*, Exhibit BMC-46, p. 92.

MSCA provided record evidence that a telecommunications company is interested in operating in the tunnel. The Commission finds that there is no evidence on the record detailing the "means and methods of construction" of the telecommunications facilities in the tunnel, explaining how the telecommunications company would "prevent damage to the pipeline/facilities" during construction, or providing the "operational fault conditions and any electric magnetic field mitigation required to prevent induced currents." Exhibit A-13, p. 9. The Commission also finds that there is no evidence on the record detailing the probability of failure of the Replacement Project in the presence of third-party utilities. *See*, Exhibit A-29, p. 16. Finally, Enbridge acknowledged that it is unknown whether a third-party utility's equipment could meet the Class 1 Division 1 standard to ensure greater safety and risk management. *See*, Exhibit A-31, p. 7. Therefore, based on the evidence provided on the record, the Commission cannot find that the

inclusion of third-party utilities that could increase the risks posed to the Replacement Project is compatible with the Commission's obligations under Act 16 to ensure the project is designed and routed in a reasonable manner. The Commission further finds that nothing in Act 359, nor anything in the First, Second, or Third Agreements, nor the Tunnel Agreement, obviates, restricts, or lessens the Commission's obligations under Act 16.

Accordingly, the Commission finds that the route, location, and design of the Straits Line 5 replacement segment in a tunnel beneath the lakebed of the Straits is reasonable and prudent subject to the condition that no third-party utilities are co-located in the tunnel with the Straits Line 5 replacement segment without further application to, and approval by, the Commission.

C. Does the Replacement Line 5 Segment that Crosses the Straits of Mackinac Meet or Exceed Current Safety and Engineering Standards?

The Commission notes that according to Enbridge, the Replacement Project will meet or exceed applicable federal pipeline safety regulations administered by PHMSA. Enbridge's initial brief, pp. 17-19. The Associations agreed. Associations' initial brief, pp. 12-13. The Staff recommended that Enbridge perform specific procedures during pipeline construction that exceed the minimum pipeline safety requirements. Staff's initial brief, pp. 55-59. Bay Mills argued that the specific grade of pipe proposed by Enbridge for use in the project has a demonstrated history of failure and, consequently, the company's application should not be approved. Bay Mills' initial brief, pp. 22-25.

Regarding the design of the Straits Line 5 replacement segment, Enbridge asserted that it "will be manufactured specifically for this Project, in a manner that exceeds API 5L Pipeline Specification Level 2" 8 Tr 800; *see*, Exhibit A-14, p. 5. In addition, Enbridge stated that the pipe segment is designed using a greater maximum operating pressure and wall thickness than is required by federal regulations. 8 Tr 800. Enbridge's witness Mr. Dennis testified that "the entire

circumference on 100% of the welds will be inspected (as opposed to the 10% made by each welder as required by the applicable regulations) and the replacement pipe segment will also be hydrotested to 150 percent of the MOP, which is 2160 psig.” 8 Tr 801. Furthermore, with the automatic shutoff valves on both sides of the Straits and the pipeline appurtenances located outside of the tunnel, Enbridge claimed that the risk of release from the pipe segment is virtually eliminated. 8 Tr 801.

Bay Mills argued that the specific grade of pipe that Enbridge proposes for use in the Straits Line 5 replacement segment, API 5L X70 pipe, has a demonstrated risk of failure at girth welds. Bay Mills referenced the JIR, which cited several recent pipeline failures in API 5L X70 pipe. *See*, 10 Tr 1340; Exhibit BMC-43. Bay Mills’ witness Mr. Kuprewicz testified on the reopened record that “[t]he risk of failure at the girth welds or heat affected zones in the X-70 pipeline should be addressed through sound Integrity Management analysis and procedures that go well beyond the API [Standard] 1104 for girth welding and heat treatment of pipe.” 17 Tr 2631.

MSCA’s witness Mr. Cooper testified that the issues raised in the JIR are not applicable to the Straits Line 5 replacement segment. He stated that the Straits Line 5 replacement segment in the tunnel will not experience “the type of longitudinal stress and strain experienced by buried pipe” and, therefore, the girth welds will not be affected by this type of strain. 12 Tr 1886. In addition, Mr. Cooper noted that “as set forth in the [JIR] (BMC-43), Enbridge states that it has already implemented the [JIR]’s recommendations intended to eliminate under-matched girth welds and minimize weld heat-affected zone softening. (Appendix B.)” 12 Tr 1887; *see*, 17 Amended Tr 2450-2456. Finally, Mr. Cooper stated that in designing the Straits Line 5 replacement segment, Enbridge properly considered and accounted for thermal expansion and contraction and stresses during hydrostatic testing. 9 Tr 1242-1243. Mr. Cooper concluded that the Straits Line 5

replacement segment complies with PHMSA requirements, federal regulations, and industry standards.

The Staff noted that it met with PHMSA five times in 2021 to discuss PHMSA's review of Enbridge's compliance with safety regulations and to review "the design, materials, construction, operations and maintenance, and emergency response of the replacement pipeline." 12 Tr 1754. The Staff also met with PHMSA three times in 2022, which "consisted of open discussions relating to Enbridge's testimony and relevant discovery responses." 18 Tr 2792-2793. The Staff contended that PHMSA did not have any concerns with the design, construction, or operation of the Straits Line 5 replacement segment. 12 Tr 1754. The Staff asserted that it will continue to communicate and coordinate with PHMSA regarding the safety reviews of the design and construction of the Straits Line 5 replacement segment. 12 Tr 1754.

However, after "consider[ing] PHMSA's process, discussions with PHMSA personnel, conversations with [Mr.] Cooper, and [the] Staff's own expertise," the Staff "recommend[ed] parameters that should be included in the Company's welding procedures." Staff's initial brief, pp. 55-56. Specifically, Staff witness Mr. Chislea recommended that Enbridge "develop low-hydrogen welding procedures and qualify them per the requirements found in 49 CFR 195.214." 12 Tr 1757. In addition, Mr. Chislea testified that "the procedures should include pre-heat requirements prior to starting welding and inter-pass temperature requirements" and "the non-destructive testing of the mainline girth welds should include automatic phased array ultrasonic testing methods." 12 Tr 1758. He stated that if Enbridge implements these recommendations, post-heat treatment is not necessary. According to the Staff, Mr. Chislea's recommendations will address Bay Mills' and Mr. Kuprewicz's concerns regarding the API 5L X70 pipe and will exceed the minimum federal regulations. 18 Tr 2812.

The Commission finds that the Straits Line 5 replacement segment meets or exceeds current safety and engineering standards and should be approved, subject to conditions. Enbridge provided a preponderance of evidence that the manufacture of the Straits Line 5 replacement segment exceeds API 5L Pipeline Specification Level 2 and that the company has exceeded industry standards for tolerances for pipe roundness, wall thickness, toughness, and chemical composition. *See*, 8 Tr 800-801. In addition, the Commission finds that the inspection procedures required by Enbridge at the manufacturing and installation levels exceed required minimum safety standards. *See*, 8 Tr 800-801. As discussed above, the Staff and MSCA reviewed Enbridge's design for the Straits Line 5 replacement segment and stated that it complies with 49 CFR Part 195 as administered by PHMSA. *See*, 9 Tr 1240; 12 Tr 1752. And, as noted by the Staff, PHMSA has not identified any compliance issues with the federal pipeline safety requirements for the design, construction, and testing of the Straits Line 5 replacement segment. *See*, Exhibit S-26, p. 1.

The Commission finds that the Staff's recommendation to exceed the minimum federal regulations is reasonable and prudent to ensure the safety, integrity, and reliability of the Straits Line 5 replacement segment. Thus, Enbridge shall implement procedures for low-hydrogen welding for all mainline girth welds and shall ensure that the procedures require both preheat and inter-pass temperature requirements. In addition, Enbridge shall ensure that the mainline girth welds are nondestructively tested using automatic phased array ultrasonic testing methods. *See*, 12 Tr 1757-1758.

The Commission also finds that there is a preponderance of the evidence on the record that Bay Mills' concerns regarding the use of API 5L X70 pipe in the Straits Line 5 replacement segment have been addressed. *See*, 12 Tr 1886-1887; 17 Tr 2450-2451; Exhibit BMC-43. Moreover, the Commission has adopted the Staff's recommended procedures that exceed federal

regulations and that address Bay Mills' and Mr. Kuprewicz's concerns. 12 Tr 1757-1758; 18 Tr 2812. Subject to these conditions, the Commission finds that the Replacement Project meets or exceeds current safety and engineering standards.

Finally, the Commission notes Bay Mills' concerns that Enbridge failed to recognize the interactive nature of risks involved in the Replacement Project. Bay Mills' reply brief on reopening, p. 3 (footnote omitted). Through the conditions added to address issues relating both to the siting of the Replacement Project and the safety and engineering standards that the Replacement Project will need to meet, the Commission finds that it has addressed the stated concerns over the interactive nature of risks in a way that is consistent with the Commission's statutory responsibilities and the well-established framework for adjudicating the Act 16 criteria.

Once the Commission determines that the application has satisfied the three Act 16 criteria, the Commission must conduct a MEPA review of the proposed project.

D. Michigan Environmental Protection Act Review

According to Enbridge, locating the Straits Line 5 replacement segment in a tunnel is not likely to have the effect of polluting, impairing, or destroying the air, water, or other natural resources, or the public trust in these resources pursuant to MEPA. Enbridge's initial brief, pp. 30-33; *see*, 7 Tr 602-604; Exhibits A-11, A-12, A-12.1. Specifically, Enbridge contended that the Replacement Project is not likely to impact ground water, surface water, or lake bodies; air emissions "will be localized, intermittent, and short-term;" and there are no anticipated impacts to geology, soils, terrestrial resources, or drinking water. Exhibit A-12, pp. 11-12, 15, 18. Thus, Enbridge argued that the Commission's MEPA analysis should conclude here. However, Enbridge stated that if the Commission determines that the Replacement Project is likely to have the effect of polluting, impairing, or destroying natural resources or the public trust in these

resources, there are no feasible and prudent alternatives to the Replacement Project. Enbridge's initial brief, pp. 33-35. The Associations agreed. Association's initial brief, pp. 14-27.

ELPC/MiCAN argued that the Replacement Project "will pollute, impair, and destroy Michigan's air, water, and other natural resources." ELPC/MiCAN's initial brief, p. 8. In particular, ELPC/MiCAN focused on the GHG emissions associated with construction and operation of the Replacement Project. Citing Mr. Erickson's testimony, methodology, and data, ELPC/MiCAN stated that GHG emissions will be produced during construction of the Replacement Project through "the use of a [TBM], operation of other construction equipment, and the making and installation of key construction materials, including steel and concrete," and operation of the tunnel systems. *Id.*, p. 12; *see*, 9 Tr 1048-1057. ELPC/MiCAN also asserted that the products that are transported by the Replacement Project will emit GHG emissions when produced, processed, and combusted. ELPC/MiCAN's initial brief, pp. 17-19; *see*, 9 Tr 1057-1060. ELPC/MiCAN contended that the construction and operation of the Replacement Project will result in 87,000 metric tons of CO₂e per year and that these GHG emissions are likely to pollute, impair, or destroy Michigan's air, water, or other natural resources. ELPC/MiCAN's initial brief, pp. 12-13, 38-47; *see*, 9 Tr 1141-1168. In ELPC/MiCAN's opinion, there are feasible and prudent alternatives to the environmental impairments, which include denial of Enbridge's application for the Replacement Project and shutting down the dual pipelines. ELPC/MiCAN's initial brief, pp. 49-57; *see*, 9 Tr 946-949.

Similarly, Bay Mills, FLOW, and the MEC Coalition argued that the Replacement Project will impair the air, water, and other natural resources in the state of Michigan and that a shutdown of the dual pipelines and decommissioning of Line 5 are feasible and prudent alternatives. *See*, Bay Mills' initial brief, pp. 29-47; FLOW's initial brief, pp. 18-24; MEC Coalition's reply brief,

pp. 14-44. In addition to environmental and health impairment from GHG emissions, Bay Mills asserted that the Replacement Project would impair other natural resources such as fisheries, wild rice, loons, and sugar maple. *See*, 10 Tr 1278-1279, 1449-1458, 1472, 1504.

The Staff identified several potential environmental impairments resulting from the Replacement Project but asserted that there are no feasible or prudent alternatives. Staff's initial brief, pp. 70-87; *see*, 12 Tr 1828-1834; Exhibit S-18.

As an initial matter, the Commission agrees with the Staff that several potential environmental impairments resulting from the construction of the Replacement Project fall in the regulatory purview of other state and federal agencies and will be addressed by separate permitting decisions. For example, witnesses for LTBB and NHBP asserted that the discharge of wastewater in the Great Lakes during construction of the tunnel and regular operations of the Replacement Project is likely to affect the Great Lakes' ecosystem. *See*, 9 Tr 1176-1179; 10 Tr 1287. The Staff noted that the NREPA Part 31 permit "establishes parameters for authorized discharge, including quantity and composition." Staff's initial brief, p. 72; *see*, Exhibit A-15, pp. 3-9. The Commission agrees with the Staff that Enbridge's compliance with these permit requirements should minimize potential environmental impacts from construction and operation of the Replacement Project.

However, the Commission examined the testimony and exhibits of Staff witness Mr. Douglas, who reviewed the NPDES, Wetlands, and GLSLA permits issued by EGLE, and of Staff witness Ms. Mooney, who reviewed Enbridge's EIR. The Commission notes that Ms. Mooney identified several potential environmental impacts from construction of the Replacement Project and she determined that "specific details about preventing the impairments were not provided in [Enbridge's] EIR or the response to discovery requests." 12 Tr 1848; *see*, Exhibits S-19, S-20,

S-21. These impairments included increased noise, dust/particulates, and light from construction, and impacts to surface water, local residents, flora, fauna, air quality, groundwater, surface soils, and vegetation. 12 Tr 1850. Ms. Mooney determined that these environmental impacts should be specifically addressed in Enbridge's final mitigation plans to minimize the environmental impairments. 12 Tr 1850-1851. The Commission agrees, and also finds that the 10 impairments identified by Ms. Mooney are environmental impairments pursuant to MEPA.

The Commission also reviewed the record evidence regarding potential GHG emissions associated with the Replacement Project. The Commission notes that Staff witness Mr. Ponebshek explained that according to the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, there are three types of GHG emissions: Scope 1, Scope 2, and Scope 3. 12 Tr 1877-1878. Mr. Ponebshek stated that Scope 1 emissions for the Replacement Project, which include emissions from construction equipment and land clearing, are expected to be 6,036 metric tons of CO₂e per year. He noted that ELPC/MiCAN's witness Mr. Erickson calculated Scope 1 emissions to be 5,635 metric tons of CO₂e per year, a difference of about 10%. 12 Tr 1878; Exhibit S-24, p. 6. In Mr. Ponebshek's opinion, "[a] difference of less than 10 percent (%) is not considered significant in this context." 12 Tr 1878. Regarding Mr. Erickson's calculations for Scope 2, which include emissions from the TBM and other electric equipment, Mr. Ponebshek stated that Mr. Erickson incorrectly used data for purchased electricity that is not recommended by the EPA. Mr. Ponebshek contended that "Mr. Erickson's GHG emissions from purchased electricity would be the same as calculated by Weston (37,320 metric tons of CO₂e per year) had Mr. Erickson used the recommended EPA default emission inventory total output [emission factors]." 12 Tr 1879; *see*, Exhibit S-27. Additionally, Mr. Ponebshek asserted that Mr. Erickson's Scope 3 emissions should be excluded from consideration because of the uncertainty involved with the data.

ELPC/MiCAN disagreed with Mr. Ponebshek that Mr. Erickson's Scope 2 emissions calculation included improper data and stated that the EPA "clearly indicates that the non-baseload emission factor is the appropriate factor to use for estimating changes in GHG emissions." ELPC/MiCAN's initial brief, p. 16. In response to Mr. Ponebshek's claim that Mr. Erickson's Scope 3 emissions calculation should be excluded, ELPC/MiCAN stated that the methods used by Mr. Erickson are "readily available" and that he "cites reputable academic and government sources for reputable information on indirect GHG emissions." *Id.*, p. 15 (citing 9 Tr 1099).

Regarding the GHG emissions resulting from the liquid petroleum transported by the Replacement Project, Mr. Erickson stated that his "central estimate of 27,000,000 metric tons CO₂e is a reasonable approximation of the incremental effect of the Proposed Project on global GHG emissions based on available information regarding supply and demand elasticities." 9 Tr 1078; *see*, 9 Tr 1063, 1077-1079, 1096-1099. Staff witnesses asserted that Exhibit S-24 contains a GHG analysis and calculations completed by Weston, which states that the current Line 5 pipeline emits 209,854 metric tons of CO₂e annually. Exhibit S-24, pp. 3, 6; *see*, 12 Tr 1768, 1831, 1862, 1872, 1875. Enbridge and the Staff noted that whether the Replacement Project is approved and completed does not affect service on Line 5; the Straits Line 5 segment will continue to transport 540,000 bpd and, thus, the GHG emissions will remain static (209,854 metric tons CO₂e annually). 7 Tr 564, 757; Exhibit S-24, pp. 3, 4, 6.

Although Mr. Ponebshek and Mr. Erickson disagree as to which GHG emissions should be included in the Scope 2 emissions calculation, their Scope 1 emissions are substantially similar, and both Scope 1 and Scope 2 calculations represent an increase in GHG emissions that would not exist but for construction of the Replacement Project. Moreover, no party disputes that GHG emissions will be emitted during construction of the Replacement Project. *See*, Enbridge's reply

brief, p. 23; Staff's initial brief, pp. 82-85; Bay Mills' initial brief, pp. 29-31; ELPC/MiCAN's initial brief, pp. 11-19; FLOW's initial brief, pp. 19-20; MEC Coalition's reply brief, pp. 32-33. Therefore, as stated in the April 21 order, the Commission finds that "GHGs are widely recognized as pollutants that trap heat in the atmosphere and contribute to climate change, thereby polluting, impairing, and destroying natural resources." April 21 order, p. 65; *see*, 9 Tr 1044-1050; 12 Tr 1849-1850; Exhibits ELP-2, ELP-3.

Once the Commission concludes that the proposed conduct, i.e., the Replacement Project, is likely to pollute, impair, and destroy natural resources, the Commission may not approve the action if there is a feasible and prudent alternative. Enbridge, the Staff, and the intervenors analyzed several potential alternatives to the Replacement Project.

Enbridge asserted that:

[p]ursuant to the First Agreement, Enbridge performed [the Alternatives Analysis] for replacing the Dual Pipelines. The two feasible alternatives were and [sic] open-cut with secondary containment or a relocation within a tunnel. The open-cut with secondary containment option caused additional environmental impacts that would not be caused by the tunnel option. Through the passage of Act 359 and the various agreements entered between Enbridge and the state, the tunnel option was selected.

Enbridge's initial brief, pp. 33-34 (internal citations omitted).

As noted in the Act 16 analysis above, ELPC/MiCAN presented Exhibit ELP-24 that contained a report by Dynamic Risk, who evaluated six alternatives to the dual pipelines. The report included preliminary environmental analyses for several of the alternatives.

Alternative 1 involved constructing a new pipeline that does not cross the open waters of the Great Lakes. Dynamic Risk explained that it explored two routes for the pipeline: (1) a northern route through Canada, around the Great Lakes, and south to Sarnia, Ontario, Canada, and (2) a southern route that follows existing Enbridge assets south to Chicago, Illinois, east to Marysville,

Michigan, and east to Sarnia, Ontario, Canada. Dynamic Risk stated that, “[d]ue to the substantial cost advantage of the southern route in both capital and operating costs, the northern route was screened out . . . and the southern route was selected for continued analysis of market impacts, socioeconomic impacts[,] and risks.” Exhibit ELP-24, p. 316.

According to Dynamic Risk, the southern pipeline route in Alternative 1 would cross 8 rivers, 24 streams, 5 drainage canals, and 231 miles of wetlands in Michigan. *See, id.*, p. 328. In addition, Dynamic Risk stated that the southern pipeline option would “transect or come within 95 yards of Protected Areas 13 times in Michigan” and would traverse 52.9 miles of highly populated areas in Michigan. *Id.*, p. 332. Dynamic Risk also contended that the southern pipeline route would affect 11 well-head protection areas for a total of 70.69 miles and “two ‘Community Drinking Water Wells’ areas would be exposed to a potential pipeline oil spill.” *Id.* (internal citations omitted).

For Alternative 2, Dynamic Risk considered whether existing Canadian and American pipeline infrastructure that does not cross the open waters of the Great Lakes could be used to carry the volume of petroleum products currently being shipped on Line 5 from Superior, Wisconsin, to Sarnia, Ontario, Canada. Dynamic Risk concluded that because “there is no meaningful partial capacity within existing infrastructure, any attempt to rely on Alternative 2 is essentially equivalent to the full abandonment option” set forth in Alternative 6. *Id.*, p. 307. Thus, Dynamic Risk did not conduct an environmental analysis for this option.

In its analysis of Alternative 3, Dynamic Risk analyzed other methods of transportation such as rail, tanker trucks, oil tankers and barges, in the event that Line 5 is decommissioned in Michigan and Line 5 product will need transportation from Superior, Wisconsin, to Sarnia, Ontario, Canada. Dynamic Risk noted that for tanker trucks, “[t]he risk factors associated with

this option, and the large capital cost, make it nonviable, and therefore no further analysis was conducted for truck transportation.” *Id.*, p. 349. Similarly, for oil tankers and barges, Dynamic Risk concluded that transportation of Line 5 products is not feasible and, therefore, it was not considered further. *Id.*

Dynamic Risk explained that for rail transportation of Line 5 product in Michigan, 11 rivers, 11 streams, 6 drainage canals, and 6-7 miles of wetlands would be crossed. *See, id.*, p. 369. After a review of EGLE informational materials, Dynamic Risk found that many Michigan wetlands would be affected by Alternative 3, including rare wetlands and endangered species. In addition, Dynamic Risk stated that a spill of Line 5 product “directly on, or via dispersion into, palustrine and other aquatic environment would cause significant environmental damage that would be particularly difficult to contain and cleanup. The consequence to remaining wetland habitat and the rare or conservationally-important species that they support would most certainly be significant.” Exhibit ELP-24, p. 371. Dynamic Risk also contended that Alternative 3 rail transportation would contact or transect 14 protected areas and 72 miles of highly populated areas in Michigan. *Id.*, p. 374. Furthermore, Dynamic Risk asserted that a spill of Line 5 product from a rail accident would affect 44 well-head protected areas and five community drinking water well resource areas. *Id.*

Dynamic Risk analyzed a trench or tunneling option in Alternative 4. Regarding the oil spill impacts associated with a trenching alternative, Dynamic Risk stated that “once an event occurs the actual scale and significance of impacts to the various baseline habitats and biodiversity are not readily discernable with those associated with a Line 5 full rupture or leak” of the existing dual pipelines. *Id.*, p. 261. Thus, Dynamic Risk provided a brief analysis of the differences in potential

ecological impacts between a release of product from a trenched pipeline and the existing dual pipelines, asserting that:

[t]he only evident difference that can be determined at this level of analysis is that [for a trenching alternative] there will be reductions in oil volumes that reach certain sensitive habitat in the event of an oil spill. This could, in principle, lead to lower levels of acute oil smothering impacts to diving and wading birds and shoreline mammals. The potential for longer-term exposure from weathered oils (e.g., less entrained oils) to certain habitats such as fish habitat may also be reduced.

Exhibit ELP-24, p. 262.

For the tunneling option in Alternative 4, Dynamic Risk analyzed a sealed annulus tunnel wherein the opening between the pipe and tunnel wall is filled with an impermeable cement bentonite grout material. Dynamic Risk stated that for this tunnel design, “there are no foreseeable mechanisms whereby the pressure membrane of the welded steel pipe might be breached, leading to migration of pipeline contents through the grout annulus, the concrete liner, the surrounding bedrock, and the overburden, leading to contamination of the waters of the Great Lakes.” *Id.*, p. 274. Regarding the potential for a release from the sealed annulus tunnel, Dynamic Risk stated that the risk is negligible and unquantifiably low. *Id.*, p. 275.

For Alternative 5, Dynamic Risk studied the current condition and operation of the dual pipelines and analyzed the environmental risks that would result from a release of Line 5 product.

According to Dynamic Risk, the consequences of a light oil spill into the Straits include:

- portions of the light oil will dissolve resulting in decreasing toxin concentrations towards the outer portions [sic] of the modeled spill plume or slick
- in relation to the above, there is a higher probability of potentially direct toxic lethal effects to susceptible species (e.g., sessile or species unable to move away from certain habitat)
- as the plume or slick disperses further and comes into contact with the shore (typically with heavier hydrocarbon chains due [to] evaporation of lighter

fractions), direct contact with littoral zone or shoreline vegetation / wetlands and species will occur

- In relation to the above, lake waters, shorelines and littoral wetlands would experience:
 - Oil smothering impacts (e.g., coating fur or feathers) to sessile species or juveniles unable to escape the spreading oil leading to stresses at potentially lethal or sub-lethal levels.
 - Oil trapped in shoreline vegetation or coating vegetation (including floating vegetation) which could in turn be remobilized under certain metrological and hydraulic conditions.
 - Oil smothering of certain critical habitat (e.g., foraging or spawning grounds) making them inaccessible to various species, thereby causing stresses at potentially lethal or sub-lethal levels.
- mobile oils in lake water that undergo longer-term emulsification, submergence / sedimentation and photo-oxidation, could cause consequentially longer-term ecological exposure of sensitive receptors to lighter oil droplets in the water column, contaminated benthic sediments and tar balls.

Exhibit ELP-24, p. 179. Dynamic Risk also analyzed the impacts of a Line 5 product spill to birds, fish, herpetofauna, mammals, other flora and fauna, and habitat. *See, id.*, pp. 179-189.

Dynamic Risk concluded that the impact analysis “points to the many core and interconnected components of Lake Michigan and Lake Huron ecological environment that could be impacted” and “it is therefore prudent to assign a major negative impact level of significance.” *Id.*, p. 192.

Alternative 6 explored eliminating transportation service on the dual pipelines and alternatives for delivering Line 5 product to Michigan. Dynamic Risk contended that if Line 5 were partially or fully abandoned with no additional construction of infrastructure, Enbridge would have to rely on rail and truck to deliver Line 5 product to Michigan. *Id.*, pp. 278-279. Dynamic Risk did not conduct an environmental analysis for this option.

MSCA also discussed two alternatives to the Replacement Project: suspending a replacement pipe segment from the Mackinac Bridge, or constructing a new suspension bridge in the Straits to

house the replacement pipe segment. *See*, 9 Tr 1238. However, the alternative of suspending a replacement pipe segment from the Mackinac Bridge was discarded by MSCA because a suspended “pipeline would add load to the Mackinac Bridge for which it was not designed and would tend to shorten the 64-year-old bridge’s useful life.” 9 Tr 1238. Regarding the construction of a new suspension bridge to house the replacement pipe segment, MSCA determined this option was imprudent because the structure would require regular and expensive maintenance, would be exposed to aircraft and high-wind impacts, and a failure of both the pipeline and the casing would result in a catastrophic release of product into the Straits.

The Staff stated that it considered six alternatives to the Replacement Project: (1) no action, (2) replacement of the dual pipelines using the Open-Cut Alternative, (3) replacement of the dual pipelines using HDD, (4) protection of the dual pipelines by installing rock armoring, (5) alternative transportation methods for Line 5 product, and (6) product switching and alternative fuel sources. 12 Tr 1726-1727. For Staff’s Alternative 1, the Staff assumed that the Replacement Project is not constructed and, as a result, the dual pipelines continue to operate in their current location. The Staff stated that, “while the *likelihood* of a release from the Dual Pipelines is relatively low, the *consequences* of an unmitigated rupture directly into the Straits could be high. Therefore, the overall risk of the Dual Pipelines continuing to operate is not insignificant.” 12 Tr 1729 (emphasis in original). As a result, the Staff concluded that although it is feasible, Staff’s Alternative 1 is an inferior and imprudent option compared to the Replacement Project.

Regarding Staff’s Alternative 2, the Staff rejected this option because it would cause substantially greater environmental impacts than the Replacement Project. *See*, 12 Tr 1865-1870. The Staff noted that Alternative 3, HDD, was found to be infeasible. For Staff’s Alternative 4, the Staff contended that installation of rock armoring would not contain a release of Line 5 product, it

could damage the pipe exterior, it would disturb the lakebed and require additional state/federal permits, and it would prevent exterior inspection of the pipeline; therefore, the Staff found Alternative 4 to be a less prudent option. The Staff explained that Alternatives 5 and 6 are only relevant if the dual pipelines are shutdown. However, the Staff stated that for Alternative 5, it would result in “significantly more GHG emissions than an equivalent volume by pipeline,” and Alternative 6 is imprudent and infeasible in the short term because it would “take a considerable amount of time to accomplish” and “come at a significant financial cost” 12 Tr 1791-1792.

Therefore, after considering the Replacement Project, the environmental impairments identified by Ms. Mooney, the GHG emissions, and the alternatives, the Staff concluded that there are no feasible and prudent alternatives to Replacement Project or the proposed construction techniques. *See*, Staff’s initial brief, pp. 85-86.

ELPC/MiCAN asserted that the purpose of the Replacement Project is to alleviate the environmental risk posed by the dual pipelines to the Great Lakes. Accordingly, ELPC/MiCAN argued that “[c]ontinuing to operate the existing pipelines would not achieve Enbridge’s stated purpose, and therefore cannot be considered as a component of an alternative here.”

ELPC/MiCAN’s initial brief, p. 49. Rather, ELPC/MiCAN stated that the Commission must consider as a feasible and prudent alternative that the dual pipelines may cease to operate. *See, id.*, pp. 52-57. Bay Mills, FLOW, and the MEC Coalition agreed. *See*, Bay Mills’ initial brief, pp. 39-47; FLOW’s initial brief, pp. 21-24; MEC Coalition’s reply brief, pp. 39-44.

The Commission reviewed the record evidence regarding alternatives to the Replacement Project pursuant to the analysis required by MEPA and applicable case law. MCL 324.1705(2); *State Hwy Comm v Vanderkloot*, 392 Mich 159, 184-190; 220 NW2d 416 (1974); *Ray v Mason County Drain Comm*, 393 Mich 294, 890-891; 224 NW2d 833 (1975); *Friends of Crystal River*

v Kuras Prop(s), 218 Mich App 457, 466-467;554 NW2d 328 (1996) (*Kuras*); *Buggs I*, p. 8; *Buggs v Mich. Pub Serv Comm*, unpublished per curiam opinion of the Court of Appeals, issued May 16, 2017 (Docket Nos. 329781 and 329909).

The Commission analyzed the six alternatives studied by Dynamic Risk set forth in Exhibit ELP-24. For Alternative 1, the southern pipeline route, the Commission finds that although the alternative pipeline route is feasible, it is not prudent. As noted by Dynamic Risk, the alternative southern pipeline route would cross 8 rivers, 24 streams, 5 drainage canals, 231 miles of wetlands, 13 protected areas, and 52.9 miles of highly populated areas, and could expose 11 well-head protection areas and two community drinking water well areas to a potential oil spill. *See*, Exhibit ELP-24, pp. 328, 332. Moreover, as set forth in Dynamic Risk's Alternatives Report, the southern pipeline route exhibits a greater failure frequency and safety risk when compared to the tunneling alternative. *See, id.*, p. 30.

Regarding Alternative 2, the Commission notes that Dynamic Risk did not explicitly conduct an environmental review for this option but stated that it was "essentially equivalent to the full abandonment option" in Alternative 6. Therefore, the Commission will conduct its MEPA review of this option in conjunction with Alternative 6.

For Alternative 3, other methods of transportation, the Commission finds that as noted by Dynamic Risk, tanker truck, oil tanker, and barge transportation are not feasible. However, for rail transportation of Line 5 product, the Commission finds that although this alternative is feasible, it is not prudent as it carries a greater likelihood of environmental harm. Rail transportation of Line 5 product will cross 11 rivers, 11 streams, 6 drainage canals, 6-7 miles of wetlands, 14 protected areas, and 72 miles of highly populated areas in Michigan. *See*, Exhibit ELP-24, pp. 369, 374. In addition, a rail transportation alternative will produce significantly more GHGs than the

Replacement Project. Furthermore, the Commission finds that the Dynamic Risk report demonstrated that a spill of Line 5 product from a rail accident would have a significantly negative effect on Michigan wetlands and endangered species. The Commission also finds that as set forth in Dynamic Risk's Alternatives Report, rail transportation exhibits a greater failure frequency and safety risk when compared to the tunneling alternative. *See, id.*, p. 30.

The trenched pipeline option in Alternative 4 is similar to the Open Cut Alternative analyzed by the Staff and discussed further below. The Commission finds that compared to a release of Line 5 product from the existing dual pipelines, the trenched pipeline option would reduce the volume of oil that could reach and impact the environment. However, as noted by Dynamic Risk, a release from a trenched pipeline would still impact diving and wading birds, shoreline mammals, and fish habitat. *See*, Exhibit ELP-24, p. 262. In addition, the estimated annual probability of rupture of a trenched pipeline and the estimated annual probability of leakage are both greater than the probability of release of Line 5 product from the proposed pipeline into the tunnel of the Replacement Project, and greater than the probability of release of Line 5 product from the tunnel into the Great Lakes, which is "negligible—considered virtually zero." Exhibit A-9, p. 9; *see also*, Exhibit ELP-24, p. 251; 8 Tr 800-803; 16 Tr 2322, 2355-2360; 17 Amended Tr 2437-2438, 2448-2450, 2475, 2589-2590, 2593; 18 Tr 2810-2811; Exhibit A-9, pp. 14, 64, 66, 68; Exhibits S-31 and S-32. Therefore, the Commission finds that the trenched pipeline option is imprudent as it too carries a greater risk of environmental harm than the proposed tunnel.

For the tunneling option in Alternative 4, the Commission notes that according to Dynamic Risk, "tunnels have advantages over other types of installation, in part, because they provide a self-contained environment that can be isolated from the natural environment by sealed concrete walls that are in turn, surrounded by bedrock." *Id.*, p. 273. The Commission finds that the sealed

annulus tunnel option presented in Alternative 4 is feasible because, like the Replacement Project, it could effectively prevent spills from reaching the Great Lakes. However, the Commission finds that Dynamic Risk’s assessment of the potential for a release from the sealed annulus tunnel as being negligible and unquantifiably low is essentially the same as the estimated “negligible—considered virtually zero” probability of release of Line 5 product from the tunnel. Exhibit A-9, p. 9. As such, the Commission finds there is no additional environmental benefit to the sealed annulus tunnel considered by Dynamic Risk in Alternative 4 over the open annulus tunnel proposed by Enbridge. Because the open annulus design appears to have been chosen over the closed annulus design on the basis of pipeline integrity management and inspection, *see, e.g.*, Exhibit BMC-60, p. 12, the Commission further finds that these rationales add additional support to the proposed Replacement Project being preferred over the sealed annulus in Alternative 4 from a MEPA perspective, as the ability to visually inspect the pipeline in the tunnel—an option not available for “an inline tunnel in grout”—allows for a higher likelihood of identifying and remediating any pipeline integrity threats before they can cause environmental harm. *Id.*; *see*, Exhibit A-9, p. 73.

The Commission finds that Alternative 5 is feasible but not prudent. In the discussion below, the Commission analyzes this option as the “no action” alternative. The Commission notes that according to Dynamic Risk, the annual probability of failure of the dual pipelines due to anchor strike, VIV, and spanning and the annual probability of leak from the dual pipelines are both significantly higher than the estimated probability of release of Line 5 product from the proposed pipeline into the tunnel of the Replacement Project and the probability of release of Line 5 product from the tunnel into the Great Lakes. *See*, Exhibit A-9, p. 9; *see also*, Exhibit ELP-24, p. 208.

For the same reasons provided in the discussion of Alternative 3 above, the Commission finds that Alternative 6 is feasible but not prudent. If Enbridge must rely on rail to deliver Line 5 product to Michigan, the annual probability of failure and the environmental consequences of an oil spill in this scenario would be substantially similar to those set forth in Alternative 3. *See*, Exhibit ELP-24, p. 30. In addition, as discussed above, the GHG emissions associated with rail transportation of Line 5 product in Michigan are greater than that produced by the Replacement Project.

The Commission also reviewed the two alternatives presented by MSCA. The Commission agrees with MSCA that it is not feasible to suspend a replacement pipe segment from the Mackinac Bridge. *See*, 9 Tr 1238. In addition, the Commission agrees with MSCA that while construction of a suspension bridge to house a replacement pipe segment is feasible, it has “significant disadvantages compared to a tunnel” and is therefore imprudent. 9 Tr 1238.

Regarding the Open-Cut Alternative analyzed by the Staff, the Commission finds the Staff’s position on this issue persuasive. As noted in Exhibit A-9, compared to the Replacement Project, the Open-Cut Alternative would cause more impacts and impairments to the Great Lakes’ shorelines, waters, and lakebed, and marine construction work would be required for two consecutive summer seasons, plus an additional summer season for geotechnical investigation and surveys as compared to the single summer season required for marine/geotechnical work for the Replacement Project. *See*, Exhibit A-9, pp. 9, 67; 12 Tr 1865-1866. In addition, Mr. Ponebshek stated that although the Alternatives Analysis concluded that the Open-Cut Alternative was feasible, it “was discarded from detailed analysis for a number of reasons including complexity of trenching at a 250 foot depth below water level, environmental impacts related to turbidity and

dredge material handling, impacts to ship traffic in the Straits, and high likelihood of hard soils on the lakebed.” 12 Tr 1865-1866.

In addition, the Commission notes that the purpose of the Replacement Project is to “alleviate an environmental concern to the Great Lakes” posed by the dual pipelines. Application, p. 1. The Alternatives Analysis stated that “[t]he secondary containment design of the [Open-Cut Alternative] reduces the probability of a release into the Straits to an extremely low value.” Exhibit A-9, p. 9. However, the Alternatives Analysis determined that the “[r]isk of product release into the Straits” from the Replacement Project is “[n]egligible—considered virtually zero.” *Id.* Accordingly, the Commission finds that although the Open-Cut Alternative may be feasible, it is not prudent because the risk of release and the environmental impairments are greater than those associated with the Replacement Project.

Next, the Commission finds persuasive the Staff’s position that the HDD method is not feasible. 12 Tr 1730, 1864. As set forth in Exhibit A-9, there are not available technical capabilities to do a single shore-to-shore installation and it would not be feasible to place marine platforms in the middle of the Straits’ shipping channel to complete an installation from other points in the Straits. *See*, Exhibit A-9, pp. 6, 8, 50-53.

Regarding the installation of rock armoring on the dual pipelines, the Commission finds the Staff’s testimony on this issue persuasive. Mr. Warner stated that although this alternative is feasible, the “potential negative consequences” of rock armoring the dual pipelines are that it “eliminate[s] the ability to visually inspect the outside of the pipeline using a remote operated vehicle (ROV) or with divers as is done currently,” and “it would likely cause environmental impairments and would require at least 11 state and federal environmental permits and approvals.” 12 Tr 1722. Thus, the Commission finds that installation of the rock armoring would reduce

Enbridge's ability to conduct safety inspections and perform maintenance on the exterior of the dual pipelines, which is currently done to ensure the integrity of the pipeline segment and prevent a release of Line 5 product into the Straits. In addition, as noted by the Staff, this alternative does not provide secondary containment and it would involve more disturbance of the lakebed compared to the Replacement Project. 12 Tr 1731. Therefore, the Commission finds that rock armoring of the dual pipelines is not a prudent alternative.

Finally, the Commission notes that several parties presented a "no-action" or "no-pipeline" alternative. Enbridge and the Staff argued that if the Commission denies Enbridge's application for the Replacement Project, the dual pipelines will continue to operate in their current position and the purpose of the Replacement Project will not be effectuated, i.e., alleviating the environmental threat to the Great Lakes posed by the dual pipelines. *See*, Staff's initial brief, pp. 87-90. Enbridge and Staff have labeled this the "no-action" alternative. However, ELPC/MiCAN, FLOW, Bay Mills, and the MEC Coalition argued that Enbridge and the Commission "must consider alternatives that serve [the] same purpose" of alleviating the environmental threat of the dual pipelines to the Great Lakes such as a "no-pipeline" alternative, which involves shutting down the dual pipelines and not constructing the Replacement Project. ELPC/MiCAN's initial brief, p. 49.

Although the "no-pipeline" alternative presented by ELPC/MiCAN, Bay Mills, FLOW, and the MEC Coalition might similarly reduce the environmental threats to the Great Lakes, MEPA requires that the alternative must also be feasible and prudent. MCL 324.1705(2). In defining what constitutes a feasible and prudent alternative, the Michigan Court of Appeals stated that its duty was:

to identify and effectuate the intent of the Legislature, and, if necessary, interpret language that does not on its face reveal legislative intent. *Piper v. Pettibone*

Corp., 450 Mich. 565, 571, 542 N.W.2d 269 (1995). A fundamental rule of statutory construction is that the Legislature is presumed to have intended the plain meaning of words used in a statute. *Attorney General v. Sanilac Co. Drain Comm'r*, 173 Mich.App. 526, 531, 434 N.W.2d 181 (1988). Because the words “feasible” and “prudent” are not defined by the statute, an acceptable method of determining intent is to refer to a dictionary for the common usage of the words. *Nelson v. Grays*, 209 Mich.App. 661, 664, 531 N.W.2d 826 (1995) [(*Nelson*)]. A “feasible” alternative is one that is “capable of being put into effect or accomplished; practicable” or “capable of being successfully utilized; suitable.” *Funk & Wagnalls Standard Dictionary* (1980). “Prudent” is defined as “exercising sound judgment.” *Id.*

Kuras, 218 Mich at 466. Similarly, without a definition of “feasible and prudent” in MEPA, the Commission finds that it is acceptable to refer to a dictionary for the common use of the words “feasible and prudent” and accordingly adopts the definitions set forth in *Kuras*. See, *Nelson*, Mich App at 664.

ELPC/MiCAN asserted that the “no-pipeline” alternative is feasible and prudent because Governor Whitmer issued the Notice revoking the 1953 easement for the dual pipelines and the Attorney General is pursuing legal action to shut down the dual pipelines, both of which could prove to be successful in the future. ELPC/MiCAN’s initial brief, pp. 50-51. The MEC Coalition stated that the 1953 order “does not foreclose a future without Line 5” because the order “does not prohibit the Commission from considering an alternative without it.” MEC Coalition’s reply brief, pp. 39-40. In addition, the MEC Coalition contended that “the state’s dismissal of the federal lawsuit to enforce the [Notice], Enbridge’s pending federal lawsuit against the state, and Canada’s invocation of the dispute resolution provisions of Article IX of the 1977 Transit Treaty to dismiss the no-pipeline alternative” do not make a shutdown infeasible. *Id.*, pp. 40-41. Finally, Bay Mills argued that the “no-pipeline” alternative is feasible because Enbridge could voluntarily cease

operation of the dual pipelines. Bay Mills' initial brief, pp. 40-41. *See*, FLOW's initial brief, p. 24; FLOW's reply brief, p. 13.³⁵

Putting aside the issue that a halting of operations of the current dual pipelines has not yet occurred and it is uncertain whether the additional actions necessary for such a halting of operations will occur, the Commission notes that many of the arguments raised in support of this "no-pipeline" alternative speak more to the need for the pipeline than to the Commission's required findings under MEPA. Given the record evidence in this case, the Commission is unconvinced that a "no-pipeline" alternative would actually result in reduced GHG emissions when compared with the Replacement Project.

Indeed, if the current GHG emissions associated with the product transported by the dual pipelines are compared with the GHG emissions that would be produced following a shutdown of the dual pipelines, the Commission finds that a shutdown would actually result in a significant increase in GHG emissions, at least in the short term, as a shutdown of the dual pipelines would not immediately alter demand for the products shipped on Line 5, and consequently the modes of transportation for crude oil and NGLs would shift to rail and truck. 12 Tr 1771-1777, 1791-1792, 1801-1807; *see*, 9 Tr 948, 974, 1092. Enbridge's witness Mr. Bennet testified that:

[his] calculations for the operation of existing Line 5 conclude that just slightly over 200,000 metric tons CO₂e per year are emitted and that the increase for tunnel operations will amount to approximately 440 metric tons CO₂e per year. Assuming rail transportation is available, [his] calculations show the GHG emissions from shipping crude oil by Line 5 by rail depending on the route would result in 0.9 to 1.9 million metric tons CO₂e per year. This represents a 4-to-9-fold increase in GHG emissions for rail transport compared to relocating Line 5's Straits crossing within a tunnel.

³⁵ Because FLOW's reply brief is not paginated, the Commission clarifies that page 1 starts in natural order with the first page of the reply brief.

7 Tr 763. The Staff agreed, asserting that transporting “an equivalent volume of petroleum through a combination of rail and truck will result in approximately 160 percent more GHG emissions than the shipment of these products via pipeline.” 12 Tr 1792. ELPC/MiCAN’s witness Mr. Erickson did not dispute that moving oil by rail will increase GHG emissions. 9 Tr 1067.

Furthermore, and most importantly, should the dual pipelines remain in operation, the Commission finds that the “no-action” alternative is not “consistent with the reasonable requirements of the public health, safety, and welfare.” MCL 324.1705(2). As set forth in the record evidence, in 2016, Dynamic Risk was selected to examine the alternatives to the current configuration of the dual pipelines in the Straits. Staff Witness Mr. Warner testified that according to Dynamic Risk’s Alternatives Report, “‘anchor hooking’ was determined to be the dominant primary threat to the Dual Pipelines that could cause a rupture. Dynamic Risk estimated that this threat represented more than 75% of the annualized total threat probability” 12 Tr 1716 (quoting Exhibit ELP-24, p. 28). Mr. Warner also stated that “to mitigate the risk of anchor strikes, Enbridge is [currently] monitoring vessel traffic by patrolling the Straits. In addition, Enbridge continues to visually inspect the exterior of the pipelines for damage or unsupported spans. If these events occur, Enbridge would need to complete repairs using divers and vessels anchored in the Straits.” 12 Tr 1729. However, even with these mitigation measures in place, the Commission finds that in the last five years, the dual pipelines have experienced two incidents, including one anchor strike incident, that could have resulted in a catastrophic release of Line 5 products into the Straits. *See*, 10 Tr 1333-1334; 12 Tr 1724-1725; Exhibit S-6, p. 1. In addition, in their current configuration, the dual pipelines are subject to VIV and spanning stress, which

may contribute to the risk of failure and a release of Line 5 product. *See*, Exhibit ELP-24, pp. 17, 28, 141.

A rupture of the dual pipelines would be catastrophic for the Great Lakes, costing an estimated \$1.37 billion damages and resulting in long-lasting health, environmental, and cultural damages. *See*, 12 Tr 1717-1718. Thus, the Commission finds that the “no-action” alternative to the Replacement Project would not be “consistent with the reasonable requirements of the public health, safety, and welfare.” MCL 324.1705(2).

In conclusion, the Commission finds that after a review of the record evidence, there are no feasible and prudent alternatives to the Replacement Project pursuant to MEPA.

THEREFORE, IT IS ORDERED that:

A. Enbridge Energy, Limited Partnership’s application is approved as set forth in the order.

B. The route and location of Enbridge Energy, Limited Partnership’s Straits Line 5 Replacement Segment is approved conditioned upon the company obtaining the required governmental permits and approvals. Significant changes to the design of the tunnel that are completed subsequent to this approval, including the addition of third-party utilities, shall be considered by the Commission to be inconsistent with the approval of this application and would require further application to, and approval by, the Commission.

C. Prior to construction of the tunnel, Enbridge Energy, Limited Partnership shall provide the Mackinac Straits Corridor Authority with a detailed risk management plan. The plan shall include a description of the planned geotechnical test bores and frequency of probe-hole testing ahead of the tunnel boring machine and should include reporting of both test-bore data and probe-hole data in real time so that the State of Michigan can assess risks and construction plan modifications based on the data. The plan should also include inspections for concrete cast sections prior to

moving them into the tunnel and after being put into place, placement of gaskets, regular analyses of bentonite mix properties, and changes in slurry pressure. Deviations from and modifications to the plan during the construction process should be reported by Enbridge Energy, Limited Partnership and available for public review.

D. Enbridge Energy, Limited Partnership shall implement procedures for low-hydrogen welding for all mainline girth welds, shall ensure that the procedures require both preheat and inter-pass temperature requirements, and shall ensure that the mainline girth welds are nondestructively tested using automatic phased array ultrasonic testing methods as proposed by the Commission Staff.

The Commission reserves jurisdiction and may issue further orders as necessary.

Any party desiring to appeal this order must do so in the appropriate court within 30 days after issuance and notice of this order, pursuant to MCL 462.26. To comply with the Michigan Rules of Court's requirement to notify the Commission of an appeal, appellants shall send required notices to both the Commission's Executive Secretary and to the Commission's Legal Counsel.

Electronic notifications should be sent to the Executive Secretary at mpscedockets@michigan.gov and to the Michigan Department of Attorney General - Public Service Division at pungpl@michigan.gov. In lieu of electronic submissions, paper copies of such notifications may be sent to the Executive Secretary and the Attorney General - Public Service Division at 7109 W. Saginaw Hwy., Lansing, MI 48917.

MICHIGAN PUBLIC SERVICE COMMISSION

Daniel C. Scripps, Chair

I abstain.

Katherine L. Peretick, Commissioner

Alessandra R. Carreon

By its action of December 1, 2023.

Lisa Felice, Executive Secretary

PROOF OF SERVICE

STATE OF MICHIGAN)

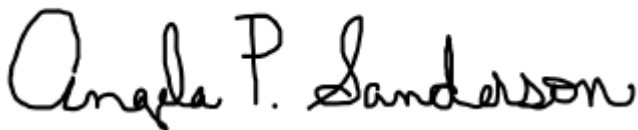
Case No. U-20763

County of Ingham)

Brianna Brown being duly sworn, deposes and says that on December 1, 2023 A.D. she electronically notified the attached list of this **Commission Order via e-mail transmission**, to the persons as shown on the attached service list (Listserv Distribution List).


Brianna Brown

Subscribed and sworn to before me
this 1st day of December 2023.



Angela P. Sanderson
Notary Public, Shiawassee County, Michigan
As acting in Eaton County
My Commission Expires: May 21, 2024

Service List for Case: U-20763

Name	On Behalf of	Email Address
Abigail Hawley	Tip of the Mitt Watershed Council (TOMWC)	abbie@envlaw.com
Adam J. Ratchenski	Bay Mills Indian Community (BMIC)	aratchenski@earthjustice.org
Amit T. Singh	MPSC Staff	singha9@michigan.gov
Amy L. Wesaw	Nottawaseppi Huron Band of Potawatomi Indians	amy.wesaw@nhbp-nsn.gov
Christopher M. Bzdok	Michigan Environmental Council	chris@tropospherelegal.com
Christopher M. Bzdok	Nottawaseppi Huron Band of Potawatomi Indians	chris@tropospherelegal.com
Christopher M. Bzdok	National Wildlife Federation - Great Lakes Regional Center	chris@tropospherelegal.com
Christopher M. Bzdok	Tip of the Mitt Watershed Council (TOMWC)	chris@tropospherelegal.com
Christopher M. Bzdok	Grand Traverse Band of Ottawa and Chippewa Indians	chris@tropospherelegal.com
Christopher P. Legghio	Michigan Laborers' District Council (MLDC)	cpl@legghioisreal.com
Christopher R. Clark	Bay Mills Indian Community (BMIC)	cclark@earthjustice.org
Christopher S. Saunders	ALJs - MPSC	saundersc4@michigan.gov
Daniel E. Sonneveldt	MPSC Staff	sonneveldtd@michigan.gov
Daniel P. Ettinger	Michigan Propane Gas Association (MPGA)	dettinger@wnj.com
Daniel P. Ettinger	National Propane Gas Association (NPGA)	dettinger@wnj.com
David L. Gover	Bay Mills Indian Community (BMIC)	dgover@narf.org
Deborah Musiker	Bay Mills Indian Community (BMIC)	dchizewer@earthjustice.org
Enbridge Energy, Limited Partnership	Enbridge Energy, Limited Partnership	gregg.johnson@enbridge.com
Howard A. Learner	Environmental Law & Policy Center (ELPC)	hlearner@elpc.org
Howard A. Learner	Michigan Climate Action Network (MiCAN)	hlearner@elpc.org
James A. Bransky	Little Traverse Bay Bands of Odawa Indians	jbransky@chartermi.net
James M. Olson	For the Love of Water (FLOW)	jim@flowforwater.org

Jennifer U. Heston	Enbridge Energy, Limited Partnership	jheston@fraserlawfirm.com
John S. Swimmer	Nottawaseppi Huron Band of Potawatomi Indians	john.swimmer@nhbp-nsn.gov
Julie M. Goodwin	Bay Mills Indian Community (BMIC)	jgoodwin@earthjustice.org
Kathryn L. Tierney	Bay Mills Indian Community (BMIC)	candyt@bmic.net
Kiana E. Courtney	Michigan Climate Action Network (MiCAN)	kcourtney@elpc.org
Lauren E. Crummel	Michigan Laborers' District Council (MLDC)	crummel@legghioisreal.com
Leah J. Brooks	Mackinac Straits Corridor Authority (MSCA)	brooksl6@mi.gov
Mary K. Rock	Bay Mills Indian Community (BMIC)	mrock@earthjustice.org
Michael S. Ashton	Enbridge Energy, Limited Partnership	mashton@fraserlawfirm.com
Nicholas J. Schroeck	Environmental Law & Policy Center (ELPC)	schroenj@udmercy.edu
Nicholas J. Schroeck	Michigan Climate Action Network (MiCAN)	schroenj@udmercy.edu
Nicholas Q. Taylor	MPSC Staff	taylorn10@michigan.gov
Scott Strand	Environmental Law & Policy Center (ELPC)	sstrand@elpc.org
Scott Strand	Michigan Climate Action Network (MiCAN)	sstrand@elpc.org
Sean P. Gallagher	Enbridge Energy, Limited Partnership	sgallagher@fraserlawfirm.com
Stuart M. Israel	Michigan Laborers' District Council (MLDC)	israel@legghioisrael.com
Troy M. Cumings	Michigan Propane Gas Association (MPGA)	tcumings@wnj.com
Troy M. Cumings	National Propane Gas Association (NPGA)	tcumings@wnj.com
Wesley J. Furlong	Bay Mills Indian Community (BMIC)	wfurlong@narf.org
William Rastetter	Grand Traverse Band of Ottawa and Chippewa Indians	bill@envlaw.com