

Rakesh Torul Technical Manager Regulatory Applications Regulatory Affairs Enbridge Gas Inc. 500 Consumers Road North York, Ontario M2J 1P8 Canada

VIA EMAIL and RESS

August 14, 2020

Ms. Christine E. Long Board Secretary Ontario Energy Board P.O. Box 2319, 2300 Yonge Street, 27th Floor Toronto, ON M4P 1E4

Dear Ms. Long:

Re: EB-2020-0160 Enbridge Gas Inc. ("Enbridge Gas") Windsor Pipeline Replacement Project ("Project") – Section 101 Application Interrogatory Responses

In accordance with the Notice of Hearing and Procedural Order No. 1 issued by the OEB on June 30, 2020, enclosed please find interrogatory responses from Enbridge Gas.

In accordance with the OEB's revised Practice Direction on Confidential Filings effective October 28, 2016, all confidential information has been redacted from the following response:

• Exhibit PP.10, Attachment 1

The confidential Exhibit is being sent separately via email to the Board.

If there are any questions, please contact the undersigned.

Yours truly,

(Original Digitally Signed)

Rakesh Torul Technical Manager, Regulatory Applications

cc: Scott Stoll, Aird and Berlis LLP EB-2020-0160 Intervenors

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.1 Page 1 of 1 Plus Attachment

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 1/p.1-3

Preamble:

Ontario Regulation 210/01 requires that all Oil & Gas pipelines in Ontario must comply with the standards, procedures and other requirements of the CSA Z662 standard. Therefore, this standard in conjunction with the Technical Safety and Standards Authority ("TSSA") Code Adoption Document form the basis of how all pipelines are designed, constructed and maintained in Ontario.

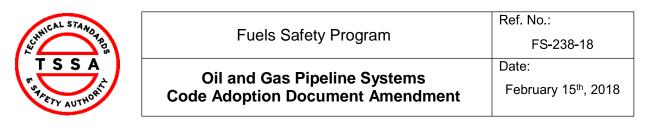
The CSA Z662 standard contains many different sections related to design, installation and maintenance of pipelines. Section 12 of this document is specific to distribution pipelines. As the proposed pipeline operates at less than 30% Specified Minimum Yield Strength, is downstream of a higher pressure supply system, is odourized, has a number of distribution stations attached to it and, has several hundred customers (residential and commercial) connected directly to the pipeline, it meets the definition of a distribution system in the CSA Z662.

Question:

- a) Please provide a copy of Section 12 of the CSA Z662 standard, indicating the distribution pipeline provisions.
- b) Please provide a copy of the referenced TSSA Code Adoption Document.

Response:

- a) Enbridge Gas was declined the ability by the CSA copyright and compliance team to include Section 12 of the CSA Z662 as a whole. Please see Exhibit I.PP.1 a) for the reference to the distribution pipeline provisions.
- b) Please see Attachment 1 for the TSSA code adoption document, FS-238-18-Oil and Gas Pipelines CAD Amendment (February 15, 2018).



IN THE MATTER OF:

Technical Standards and Safety Act, 2000, R.S.O. 2000, c. 16, Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), and Ontario Regulation 210/01 (Oil and Gas Pipeline Systems)

The Director for the purposes of Ontario Regulation 210/01 (Oil and Gas Pipeline Systems), pursuant to sections 8(1) and 8(2) of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference) and section 36(3)(a) of the Technical Standards and Safety Act 2000, R.S.O. 2000, c. 16, hereby provides notice that the OIL AND GAS PIPELINE SYSTEMS CODE ADOPTION DOCUMENT published by Technical Standards and Safety Authority dated June 1, 2001, as amended, is further amended as follows:

All sections of the Oil and Gas Pipeline Systems Code Adoption Document (including

previous amendments thereto) are revoked and replaced with the following:

Background:

This amendment to the Oil and Gas Pipeline Systems Code Adoption Document (CAD) revokes and replaces the previous amendment (FS-220-16, dated July 19, 2016). A delta symbol (Δ) in the left margin indicates a provision that is new or that has changed since the previous CAD amendment.

The following are the most significant changes from the previous CAD amendment:

- Security standard, CSA Z246.1 re-adopted on this version of CAD
- Definition of "ground disturbance" changed to align with the O.Reg.210/01
- Exemption on digester and landfill sites corrected to reflect appropriate code for the pipeline passing through public domain.

Section 1

CODES ADOPTED BY REFERENCE

- 1. The Director hereby adopts and requires all persons to whom O. Reg. 210/01 (Oil and Gas Pipeline Systems) applies to comply with the standards, procedures and other requirements of the following codes and regulations:
 - a) **CSA Z662-15 (Oil and Gas Pipeline Systems)**, published by the Canadian Standards Association, as amended by Section 3 of this document.
 - b) CSA Z276-15 (Liquefied Natural Gas (LNG) Production, Storage and Handling), published by the Canadian Standards Association,
- c) CSA Z246.1-17 Security management for petroleum and natural gas industry systems, published by the Canadian Standards Association,

Background:

This Standard adopted in previous Code Adoption Document (CAD), FS-196-12, which was removed from CAD, is being reintroduced.

d) **CSA Z247-15 Damage Prevention for the Protection of Underground Facilities**, published by the Canadian Standards Association, as amended by section 2 of this document.

△ Section 2

AMENDMENTS TO CSA Z247-15 (Damage prevention for the protection of underground infrastructure)

- 2. The following clauses and/or sections of the CSA-Z247-15 (Damage prevention for the protection of underground infrastructure) are amended as follows:
- (1) Ground disturbance definition is amended as follows:

Ground disturbance — means; digging, boring, trenching, grading excavation or breaking ground with mechanical equipment or explosives.

Background:

Definition of Ground disturbance changed for consistency with O. Reg. 210\01

Section 3

AMENDMENTS TO CSA Z662-15 (OIL AND GAS PIPELINE SYSTEMS)

The following clauses and/or sections of the CSA-Z662-15 (Oil and Gas Pipeline Systems) are amended as follows:

(1) Clause **1.2** is deleted and substituted by the following:

1.2

The scope of this Standard, as shown in Figures 1.1 and 1.2, includes

- (a) for oil industry fluids, piping and equipment in onshore pipelines, tank farms, pump stations, pressure-regulating stations, and measuring stations;
- (b) oil pump stations, pipeline tank farms, and pipeline terminals;
- (c) pipe-type storage vessels;
- (d) for gas industry fluids, piping and equipment in onshore pipelines, compressor stations, measuring stations, and pressure-regulating stations;
- (e) gas compressor stations;
- (f) gas storage lines and pipe-type and bottle-type gas storage vessels; and

- (g) pipelines that carry gas to and from a well head assembly of a designated storage reservoir.
- (2) Clause **1.3** is amended by adding the following items:
 - (o) gathering systems
 - (p) digester gas or gas from landfill sites or waste gas within the boundary of the site.
 - (q) multiphase fluid systems
 - (r) offshore pipeline systems
 - (s) oil field water systems
 - (t) oilfield steam systems
 - (u) carbon dioxide pipeline systems.

Background:

Originally digester and landfill sites were interpreted to be exempt from Z662 as they were within the jurisdiction of O. Reg 212/01. However, O. Reg 212/01 did not account for the possibility that the gas produced by digester and landfill sites would be exported or conveyed via pipeline through the public domain. This addition limits the exemption for these pipelines within the boundary of the sites. When pipes pass through the public domain, they are considered as pipeline and applicable code is CSA Z662.

(3) Clause 2.2 is amended by adding the following clarification:

For the purpose of this Code Adoption Document, within a gas pipeline system, transmission pipelines are those lines that operate at or above 30% of the pipe's specified minimum yield strength (SMYS) at MOP.

(4) Clause **3.2** is amended by renumbering the existing clause 3.2 to 3.2.1 and adding the following clause:

3.2.2

Natural gas distributors shall incorporate into the procedures for managing the integrity of pipeline systems required in clause 3.2.1 an action plan that includes:

- a description of the steps taken or that will be taken to mitigate the potential of penetration of sewer lines by a natural gas pipeline during trenchless installation;
- b. a program that raises stakeholder awareness of the potential safety issues that could arise when attempting to clear a blocked sewer service line beyond the outside walls of a building; and
- c. an assessment of potential risks and a plan to mitigate these risks.

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4.1.7

Steel oil and gas pipelines may be designed in accordance with the requirements of Annex C, Limit States Design, provided that such designs are suitable for the conditions to which such pipelines are to be subjected, and provided that the design has been reviewed and approved by the Director prior to installation or use.

Background:

An editorial change. Previous version of CAD had mistakenly referred to section 4.1.8. That mistake is corrected in this version.

(6) Clause **4.3.4** is amended by adding the following clauses:

4.3.4.9 High consequence areas

4.3.4.9.1 Definitions

The following definitions apply to the remainder of clause 4.3.4:

Assessment means the use of testing techniques set out in this section to ascertain the condition of a covered pipeline segment.

Covered segment or **Covered pipeline segment** means a segment of oil or gas transmission pipeline located in a high consequence area. The terms "oil", "gas" and "transmission" are defined in O. Reg. 210/01

High consequence area means

- (a) for a gas transmission pipeline, an area defined as:
 - (i) a Class 3 location under CSA Z662-15, Clause 4.3.3;
 - (ii) a Class 4 location under Clause 4.3.3;
 - (iii) any area in a Class 1 or Class 2 location where the potential impact radius is greater than 200 metres and the area within the potential impact circle contains 20 or more buildings intended for human occupancy; or
 - (iv) any area in a Class 1 or Class 2 location where the potential impact circle contains an identified site; and
- (b) for an oil pipeline, an area containing:
 - (i) a commercially navigable waterway, which means a waterway where a substantial likelihood of commercial navigation exists;
 - (ii) a high population area, which means an urbanized area, as defined and delineated by the latest Statistics Canada Census, that contains 50,000 or more people or has a population density of at least 385 people per square km;
 - (iii) any other populated area and/or place, as definedy the latest Statistics Canada Census, that contains a concentrated population, such as an incorporated or unincorporated city, town, village, or other designated residential or commercial area; or

(iv) an unusually sensitive area, as defined in company's pipeline integrity management program.

Identified site means, for Class 1 and Class 2 locations, any of the following areas:

- (a) an outside area or open structure that is occupied by twenty (20) or more persons on a minimum of fifty (50) consecutive or non-consecutive days in any twelve-month (12) period. Examples include but are not limited to: beaches, playgrounds, recreational facilities, camping grounds, outdoor theaters, stadiums, recreational areas near a body of water, and areas outside rural building such as a religious facility;
- (b) a building that is occupied by twenty (20) or more persons on a minimum of five (5) consecutive or non-consecutive days in any given week for at least ten (10) weeks in any twelve-month (12) period. Examples include, but are not limited to, religious facilities, office buildings, community centers, general stores, 4-H facilities, sporting and entertainment facilities; or
- (c) a facility occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate. Examples include but are not limited to hospitals, prisons, schools, day-care facilities, retirement facilities and assisted-living facilities.

Potential impact circle, for natural gas or HVP pipelines systems, is a circle of radius equal to the potential impact radius (PIR).

Potential impact radius (PIR) means the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property, determined by the following formula:

r = 0.00313 times square root of (pd²)

where:

r is the radius of the circular area surrounding the point of failure in meters (m) p is the MOP of the pipeline in kPa d is the nominal diameter of the pipeline in mm

NOTE: 0.00313 is the factor for natural gas based on conversion from a formula used in GRI-00/0189. This number will vary for other gases depending upon their heat of combustion. An operator transporting gas other than natural gas shall refer to ASME/ANSI B31.8 S for the formula to calculate the potential impact radius.

Background:

This is an editorial change. The formula had a typographical error in the previous version of the CAD and it is corrected in this version.

4.3.4.9.2 Identification of high consequence areas

(a) General. Operating companies shall identify which segments of its oil and gas

transmission pipeline system are in high consequence areas. The operator must describe in its integrity management program the method used to establish high consequence areas, including the determination of the potential impact radius.

- (b) *Identified sites*. The operator shall identify identified sites by:
 - (i) using information the operator has obtained from routine operation and maintenance activities; and
 - (ii) obtaining information about locations that are likely to meet the criteria for identified sites from public officials with safety or emergency response or planning responsibilities (such as officials from local emergency planning response agencies or from municipal planning departments).
- (c) *Identified sites where public officials cannot assist*. If the public officials mentioned above are unable to provide information useable to identify potential identified sites, the operator shall review and use the following information, as appropriate, to identify potential identified sites:
 - (i) the presence of signs, public notices, flags or other markings that suggest that the area may qualify as an identified site; and
 - (ii) the existence of publicly available information, including online and at local land registry offices, that suggests the area may qualify as an identified site.
- (d) Newly identified high consequence areas. When an operator obtains information suggesting that the area around a pipeline segment not previously identified as a high consequence area could constitute a high consequence area, the operator shall evaluate the area to determine if the area is a high consequence area. If the segment is determined to constitute a high consequence area, it must be incorporated into the operator's baseline assessment plan as a high consequence area within one year from the date the area is identified.

Note: Pipeline operators shall keep records of the above requirements pursuant to section 3.1.2 (f) (v) of CSA Z662-15.

Background:

Note section was added to reiterate the requirements of "record keeping" which is essential part of Integrity Management Program.

4.3.4.10 Operator's responsibility to implement this clause

4.3.4.10.1

An operator of a covered pipeline segment shall develop and follow a written program (as part of the pipeline system integrity management program (IMP)) that contains all the elements described in the IMP and that addresses the risks associated with each covered transmission pipeline segment.

4.3.4.10.2 Implementation standards

An operator may use an equivalent standard or practice as required by clause 4.3.4 only when the operator demonstrates in its Integrity Management Program that the alternative standard or practice provides an equivalent level of safety to the public and property.

4.3.4.11 Risk assessment

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The operator shall conduct a risk assessment that follows Annex B Guidelines for risk assessment of pipelines falling within the scope of CSA Z662-15 for each covered segment. The risk assessment shall include the high consequence areas and determine if additional preventive or mitigation measures are needed.

The operator shall prioritize the covered pipeline segments according to risk.

4.3.4.12 Remediation

For each covered segment, the operator shall develop and establish measures to prevent or reduce the probability of an incident and to limit the potential consequences thereof.

These measures shall include conducting a risk analysis of the pipeline segment to identify additional measures to enhance public safety or environmental protection. Such measures may include, but are not limited to:

- (a) establishing shorter inspection intervals;
- (b) installing emergency flow restricting devices (remote operated valves, check valves and automatic shut off valves, as applicable);
- (c) modifying the systems that monitor pressure or detect leaks, as applicable;
- (d) providing additional training to personnel on response procedures;
- (e) conducting drills with local emergency responders; and
- (f) adopting other management controls.

Evacuation procedures shall take into consideration the PIR.

For oil pipeline segments located in high consequence areas, the operating company shall provide the Ontario Ministry of Natural Resources and Forestry (MNRF) and the Ontario Ministry of Environment and Climate Change (MOECC) an opportunity to comment on the company's contingency plan for leaks or spills and shall address any comments provided by MOECC or MNRF.

(7) **Table 4.2** is amended by substituting the requirements for LVP (non-sour services) with the following:

Class 1 location		Class 2 location	Class 3 location	Class 4 location
Transmission lines (refined products)	1.000	0.900	0.700	0.550
Uncased railway crossings	0.625	0.625	0.625	0.625

This requirement is not retroactive and applies to new pipelines only.

(8) Clause **7.10.3.2** is deleted and substituted with the following:

7.10.3.2

For HVP and for sour service pipeline systems, all butt welds shall be inspected by radiographic or ultrasonic methods, or a combination of such methods, for 100% of their circumferences, in accordance with the requirements of clause 7.10.4.

(9) Clause **10.3.8.1** is deleted and substituted with the following:

10.3.8.1

Prior to a change in service fluid, including from non-sour service to sour service, the operating company shall conduct an engineering assessment to determine whether the pipeline systems would be suitable for the new service fluid. The assessment shall include consideration of the design, material, construction, operating, and maintenance history of the pipeline system and shall be submitted to the Director for approval.

(10) Clause **10.3** is amended by adding the following clause:

10.3.11

For the protection of the pipeline, the public and the environment, the operating company shall develop a pipeline integrity management program for steel pipelines operated at 30% or more of the SMYS of the pipe at MOP that complies with the applicable requirements of clause 3.2 of CSA Z662-15.

(11) Clause **10.5.2** is amended by adding the following clauses:

10.5.2.5 Emergency communication meetings

The operator of a transmission pipeline shall conduct meetings with local authorities, inviting police, firefighting authorities, Ontario Ministry of Transportation (MTO), Ministry of Natural Resources and Forestry (MNRF), Ministry of the Environment and Climate Change (MOECC), local conservation authorities and TSSA, to explain to the authorities the characteristics of the pipeline system the operator operates, the type of fuels being transported and the typical behavior of these fuels in case of uncontrolled escapes or spills and the capabilities and the coordination required to respond to pipeline emergencies.

These meetings shall be conducted at intervals not exceeding five years at locations that ensure the key stakeholders can attend. The meetings shall be prioritized to correspond to the operating company's prioritization of the covered pipeline segments according to the risk.

10.5.2.6

Operating companies shall prepare an emergency response plan and make it available on request, to local firefighting authorities, as well as the authorities referred to in clause 10.5.2.5.

(12) Clause **10.6** is amended by adding the following clause:

10.6.5 Right-of-way encroachment

10.6.5.1

No person shall construct, erect or install any structure or tangible item on or within the pipeline right-of-way, including but not limited to patios, concrete slabs, buildings, pool houses, garden sheds, swimming pools, hot tubs, fish or other man-made ponds, saunas or fences, unless written permission is first obtained from the operating company.

10.6.5.2

No person shall deposit or store any flammable material, solid or liquid spoil, refuse, waste or effluent on or within the pipeline right-of-way.

10.6.5.3

Notwithstanding the above, operating companies may erect structures required for purpose of pipeline system operation on the pipeline right-of-way.

10.6.5.4

No person shall operate a vehicle or mobile equipment except for farm machinery or personal recreation vehicles across or within a pipeline right-of-way unless written permission is first obtained from the operating company or the vehicle or mobile equipment is operated within the travelled portion of a highway or public road already existing in the pipeline right-of-way.

10.6.5.5

Operating companies shall develop written procedures for periodically determining the depth of cover for pipelines operated over 30% of SMYS of the pipe at MOP. Such written procedures shall include a rationale for the frequency selected for such depth determinations. Where the depth of cover is found to be less than 60 cm in lands being used for agriculture, an engineering assessment shall be done in accordance with clause 3.3 and a suitable mitigation plan shall be developed and implemented to ensure the pipeline is adequately protected from hazards.

- (13) Clause **10.15.1.2** is amended by adding the following items:
 - (e) maintain warning signs and markers along the pipeline right-of-way;
 - (f) maintain existing fences around above ground pipeline facilities; and
 - (g) empty tanks and purge them of hazardous vapours within 60 days of deactivation.
- (14) Clause **12.4.11.1** is renumbered as clause 12.4.11.1.1. Clause **12.4.11** is amended by adding the following clauses:

12.4.11.1.2

All new and replacement natural gas service regulators shall comply with the requirements of CSA 6.18-02 (R2008) (Service Regulators for Natural Gas), published by the Canadian Standards Association, including the Drip and Splash Test contained in Appendix A of the said standard. Where a regulator-meter set installation or supplemental protective devices provides equivalent protection against regulator vent freeze up passes a successful test in accordance with Appendix C of the said standard, the requirements of Appendix A (Drip and Splash Test) and those contained in clause

14.15 (Freezing Rain Test) of the standard are waived. Evidence of tests completed in accordance with Appendix C of the standard shall be retained by the operating company as permanent records.

12.4.11.1.3

Regulator-meter set configurations shall be included in the operating company's operating and maintenance procedures.

(15) Clause 12.4.15.6 is revoked and substituted with the following:

12.4.15.6

Where regulator failure would result in the release of gas, open ends of the vents shall be located where the gas can escape freely into the atmosphere and away from any openings in the buildings. Clearances from building openings shall be commensurate with local conditions and the volume of gas that might be released, but shall not be less than those set out in the following table:

Column:	I	П	Ш	IV
Building opening	0.3	1	3	1
Appliance vent outlet	0.3	1	1	1
Moisture exhaust duct (dryers)	1	1	1	1
Mechanical air intake	1	3	3	3
Appliance air intake	0.3	1	3	3
Source of ignition	0.3	1	1	3

Clearance from service regulator vents discharge (m)

Column I applies to natural gas regulators certified under CSA 6.18 standard, incorporating an OPCO system and with a limited relief of 1.5 m3/h.

Column II applies to natural gas regulators certified under CSA 6.18 standard (if within the scope of the standard) with a relief capacity up to 55 m3/h.

Column III applies to natural gas regulators with a relief capacity over 55 m3/h.

Column IV applies to propane regulators.

Where regulators may be submerged during floods, either a special anti-floodtype breather vent fitting shall be installed or the vent line shall be extended above the height of the expected flood waters.

(16) Clause 12.4.15 is amended by adding the following item:

12.4.15.10

No person other than an employee or person authorized by the distributor shall interfere with or perform any alterations, repairs, tests, services, removals,

changes, installations, connections, or any other type of work on the distributor's system.

(17) Clause 12.10.12 is amended by adding the following items:

(e) For polyethylene piping installed in Class 1 and Class 2 locations, the upgraded maximum operating pressure shall not exceed the design pressure calculated in accordance with the requirements of Clause 12.4.2; and

(f) For polyethylene piping installed in Class 3 and Class 4 locations, the upgraded maximum operating pressure shall not exceed the design pressure calculated in accordance with the requirements of clause 12.4.2 with a combined design factor and temperature derating factor ($F \times T$) of 0.32, unless the operating company conducts an engineering assessment to determine whether it would be suitable for the existing polyethylene piping to be operated at the new pressure. The assessment shall include consideration of the design, material, construction, operating, and maintenance history of the pipeline system and be submitted to the Director for approval.

(18) Clause 12.10 is amended by adding the following clause:

12.10.16

Operating companies shall establish effective procedures for managing the integrity of pipeline systems operated at less than 30% of SMYS of the pipe at MOP (Distribution Systems) so that they are suitable for continued service, in accordance with the applicable requirements of clause 3.2 of CSA Z662-15.

Section 4

POLYETHYLENE PIPE CERTIFICATION

3. Polyethylene piping and fittings that are used in a polyethylene gas pipeline shall be certified by a designated testing organization accredited by the Standards Council of Canada as conforming to CSA-B137.4 (Polyethylene Piping Systems for Gas Services).

Section 5

WELDER QUALIFICATION

4. Welds shall not be made in any steel pipe that forms or is intended to form a part of a steel oil or gas pipeline or a component of a steel pipeline unless the welding procedures have been approved and the welder is qualified to make the weld in accordance with the requirements of CSA-Z662-15 (Oil and Gas Pipeline Systems) and is the holder of the appropriate authorization issued under O. Reg. 220/01 (Boilers and Pressure Vessels) made under the Act.

- 5. (1) This Code Adoption Document amendment is in effect on February 15, 2018.
 - (2) Where there is a conflict between this document and a code, standard or publication adopted by this document, this document prevails.
 - (3) Any reference to "Director" in a code, standard or publication adopted by this document means the Director for the purposes of O. Reg. 210/01 (Oil and Gas Pipeline Systems).

DATED at Toronto, Ontario, this 15th day of February 2018.

ORIGINAL SIGNED BY

John Marshall Director, O. Reg. 210/01 (Oil and Gas Pipeline Systems)

Any person involved in an activity, process or procedure to which this document applies shall comply with this document. This document was developed in consultation with the Pipeline Risk Reduction Group

> Fuels Safety Program, Technical Standards and Safety Authority 345 Carlingview Drive, Toronto, ON M9W 6N9, Tel: (416) 734-3300 Fax: (416) 231-7525

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.2 Page 1 of 3 Plus Attachment

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

July 21, 2020 Technical Standards and Safety Authority (TSSA) Report Exh B/Tab 1/Sch 5/App.C/p.,2,4 (Haddad Morgan & Associates Ltd. Letter)

Preamble:

On July 21, 2020, the TSSA filed a report making the following statements regarding the Windsor Pipeline Replacement Project (Project):

The applicable regulation that applies to Windsor Line Replacement Project is Ontario Regulation 210/01: Oil and Gas Pipeline Systems. The applicable standard for this project is CSA Z662-15 which TSSA adopted under FS-238-18 - Oil and Gas Pipelines CAD Amendment (February 15, 2018).

A review of the raised issue on this project:

- a) Depth of cover: Depth of cover for distribution network is defined by table 12.2 of CSA Z662-15
- b) Pipeline abandonment: The requirements for abandon distribution pipeline are defined by section 12.10.3.4 of CSA Z662-15

As part of its application, Enbridge Gas provided a letter from Haddad Morgan & Associates Ltd. (Haddad Report) which makes the following statements:

- The analysis completed by Enbridge's Engineer was to Z662-15; however, there is a more current version of this standard at Z662-19.
- Provided Enbridge proceeds in accordance with Z662-19 and applies the 1.2m depth and following from TAC March 2013, the County could accept the 1.2m depth per Table 1 provided the main was encased.

Question:

a) Please confirm whether Enbridge Gas has based the construction of the proposed pipeline on the CSA-Z662-15 standard.

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- b) If so, why does Enbridge Gas consider the CSA-Z662-15 standard the appropriate standard to follow rather than the CSA Z662-19, which the Haddad Report states is the more current version of the standard?
- c) Please provide a copy of the sections of the CSA-Z662-15 and CSA Z662-19 standards that pertain to depth of cover and pipeline abandonment.
- d) Please identify the differences, if any, between the CSA-Z662-15 and CSA Z662-19 standards with respect to depth of cover and pipeline abandonment.
- e) Has Enbridge Gas had any discussions with the TSSA regarding recommendations of the Haddad Report on the applicability of the CSA Z662-19 to the Project? If so, please provide the outcome of those discussions.
- f) [Question for TSSA] The TSSA letter states that the applicable standard for this Project is CSA-Z662-15. Based on the information in your possession, does the Project meet the requirements of CSA-Z662-15? More specifically, does the proposed depth of cover and pipeline abandonment proposal for the Project proposed by Enbridge Gas meet the requirements of the CSA-Z662-15 standard? Does the TSSA have any concerns with the Project as proposed by Enbridge Gas? If so, please explain.
- g) [Question for TSSA] Please provide the TSSA's view on the recommendation of the Haddad Report regarding the relevance of CSA Z662-19, explaining why the TSSA still considers the CSA-Z662-15 the relevant standard for this project for both the depth of cover and the pipeline abandonment.
- h) [Question for TSSA] The TSSA refers to Table 12.2 and Section 12.10.3.4 of the CSA Z662-15. Please provide a copy of Table 12.2 and Section 12.10.3.4 which specifically identifies the information that is being relied upon by the TSSA.
- i) Please advise whether there are any Enbridge Gas distribution pipeline construction projects in Ontario that have been or are subject to the CSA Z662-19 standard. If so, please provide a summary of these projects, explaining why these distribution pipeline projects conform to CSA Z662-19 rather than CSA-Z662-15.
- j) Would Enbridge Gas be willing to agree to a depth of cover of 1.2m for the construction of the proposed pipeline? If so, what would be the incremental costs associated with the 1.2m depth of cover?

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Response:

- a) Confirmed.
- b) EGI's pipeline construction projects in Ontario are subject to the requirements of CSA Z662-15 which is the applicable standard adopted by the TSSA for pipeline design, construction and maintenance in Ontario. EGI follows the TSSA guidelines for its pipeline projects as the TSSA is technical regulatory authority for all pipeline projects in Ontario. Please see the letter from TSSA, dated July 21, 2020 filed in this proceeding.
- c) See Exhibit I.STAFF.1 a).
- d) Requirements for depth of cover of distribution pipelines is identical between CSA Z662-15 and CSA Z662-19.
- e) Yes. Enbridge Gas had a phone discussion with TSSA and it was determined that Enbridge Gas has correctly applied the CSA Z662-15 to the project as it is the standard that is adopted at this time.
- f) Response from TSSA:

Yes to first question. Depth of cover is also in compliance with the adopted standard. TSSA did not find any code non-compliances on the review of this project.

g) Response from TSSA:

TSSA is in process of critically reviewing all the standards and amended Code Adoption Documents in Ontario. At this point of time, TSSA does not have any timeline as when and if adopts CSA Z662-19. Applicable standard for all pipeline operations in Ontario is CSA Z662-15.

- h) <u>Response from TSSA:</u> Please see Attachment 1 for the CSA Z662-15 Table 12.2 for depth of cover and Section 12.10.3.4 for abandonment, respectively.
- i) Please see response to part b).
- j) No, Enbridge Gas would not be willing to agree to a depth of cover of 1.2m for the construction of the proposed distribution pipeline.

Table 12.2 Cover (See Clauses <u>12.4.7.1</u>, <u>12.4.7.2</u>, and <u>12.4.8.2</u>.)

	Cover for buried pipelines, minimum, m			
Location	Distribution lines	Service lines		
Private property	0.60	0.30*		
Right-of-way (road)	0.60	0.45		
Right-of-way (railway)	0.75	0.75		
Below travelled surface (road)	0.60	0.45		
Below base of rail (railway): Cased Uncased steel or polyethylene	1.20 2.00	1.20 2.00		
Water crossing	1.20+	1.20+		
Drainage or irrigation ditch invert	0.75	0.75		

* Consideration should be given to providing additional cover in areas to be cultivated or gardened.

+ Reduced cover, but not less than 0.6 m, may be used if analysis demonstrates that the potential for erosion is minimal.

Note: Cover is measured to the top of the carrier pipe or casing pipe, whichever is applicable.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.2 Attachment 1 Page 2 of 2

12.10.3.4

The requirements for deactivating or reactivating piping specified in Clause <u>10.15</u> and the requirements for abandonment of pipelines in Clause <u>10.16</u> shall not apply.

The deactivation and abandonment of piping shall be subject to the following requirements:

- Operating and maintenance procedures shall include provisions for sealing off the supply of gas to abandoned piping, including control lines, equipment, and appurtenances.
- b) Where piping is abandoned, it shall be purged and
 - i) removed; or
 - ii) disconnected or separated, and the ends capped, plugged, or otherwise effectively sealed to prevent the flow of gas.
- c) Capping, plugging, and sealing of service lines shall be completed outside the buildings served by such lines.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.3 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/ Tab 1/Sch 5/App B/p.22,23

Preamble:

Enbridge Gas provided a memo from Wood PLC on the applicability of the depth of bury standards in Figure 4 and Table 1 of the TAC guidelines which states the following:

In our experience, municipalities we have dealt with have not, to date, referenced the above standards. For new or replacement plant installations, municipalities have deferred to the utility company's standard depth of bury. The exception to this practice has been at a location of an actual or anticipated future conflict, where addition depth of bury has been required.

Further, it is often the case that the bury depth of utilities constructed within the undeveloped portion of a road allowance will *increase* following the placement of the pavement structure (granular subbase, base and asphalt) associated with road widening, which can result in an increased bury depth of 500 mm or more, depending on the road profile, drainage and pavement design. Consequently, a depth of bury of 1.0m within a pre-existing road right of way could be expected to result in a depth of bury in the order of 1.5m or more following widening of the roadway.

Question:

- a) Does Enbridge Gas agree with the comments made by Wood PLC regarding the depth of cover requirements should the widening of the roadway occur?
- b) [Question for TSSA] Please provide the TSSA's view on the comments made by Wood PLC.

Response:

a) Yes.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.3 Page 2 of 2

b) RESPONSE FROM TSSA:

Mentioned document, TAC guideline, as the name implies is only a guideline and is not enforceable in Ontario. TSSA cannot provide its point of view for the comment made by Wood PLC. TSSA can only comment on the requirements mentioned in <u>Ontario Regulation 210/01: Oil and Gas Pipeline Systems</u> and adopted standard through <u>FS-238-18 - Oil and Gas Pipelines CAD Amendment (February 15, 2018)</u>.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.4 Page 1 of 3 Plus Attachments

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh A/Tab 2/Sch 1/p.5,6

Preamble:

According to Enbridge, Essex County has premised their position regarding the depth of cover upon the transmission line provisions of the CSA Z662 code rather than the distribution provisions and upon a misinterpretation and application of the Transportation Association of Canada's Underground Utility Installations Crossing Highway Rights-of-Way (the TAC Manual).

Despite the TAC Manual only suggesting a depth of cover of 1.5m beneath the traveled portion of the road way, Essex County has requested a depth of cover of 1.5 meters anywhere within 6m of the travelled edge of the road way.

Question:

- a) Please provide a copy of the CSA Z662 standard, clearly indicating the transmission line provisions.
- b) Does the TAC Manual apply to both gas transmission and distribution pipelines?
- c) Please confirm whether the construction of any previous Enbridge Gas distribution pipelines in Ontario have been subject to the provisions of the TAC Manual.
- d) Please explain in what circumstances Enbridge Gas would agree that the provisions of the TAC Manual would be applicable.

Response:

a)

CSA Z662 Standard:

- Clause 2.2 Definitions The proposed Windsor line replacement meets the definition of a distribution pipeline as it operates at less than 30% SMYS and is downstream of regulating and odorizing stations (Attachment 1). It conveys gas to service lines and other distribution lines.
- Clause 4 Table 4.9 Cover and Clearance. (Attachment 2).
- Clause 4.11.1 Cover and Clearance. (Attachment 3)

TSSA Code Adoption Document:

• Clause 2.2 has been amended by adding the following clarification:

For the purpose of this Code Adoption Document, within a gas pipeline system, transmission pipelines are those lines that operate at or above 30% of the pipe's specified minimum yield strength (SMYS) at MOP.

Please refer to Exhibit I.STAFF.1, Attachment 1, page 3, Section 3 (Amendments to CSA Z662-15 (Oils and Gas Pipeline Systems).

b) The TAC Guidelines for Underground Utility Installations Crossing Highway Rights of Way (March 2013) is a general guidance document for all utility crossings and is not specific to gas pipelines. Table 1 on Page 25 of the TAC Guideline differentiates between high pressure and low pressure gas pipe lines. The TAC document could refer to either transmission or distribution lines where it refers to gas pipelines.

Enbridge Gas's position is that the intent of the TAC guideline document is as follows:

- A document that collects practices across Canada to guide users on potential requirements for utilities that are crossing highway right of ways (as the title suggests).
- A guideline to help direct users with respect to potential content they may want to include in their own specifications and requirements documents.
- That this document was created by subject matter experts in the field with a specific focus on the utilities crossing a highway with little specific discussion around pipes that are paralleling the roadway for many kilometers. The Company's assumption is that had longitudinal installations been an item that was intended to be incorporated into this

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document the results and expectations may have been different than the current content of this document.

Please see Attachment 4 for an email exchange between Scott Walker of Enbridge Gas and Mr. Lawrence Arcand, P. Eng and President of T2 Utility Engineers and Chair of the TAC. In this email exchange Mr. Arcand confirms Enbridge Gas's position on the intent of the document is correct and indicates that County of Essex may be misinterpreting the content relative to the proposed pipeline project.

- c) No, not to Enbridge Gas's knowledge.
- d) Enbridge Gas agrees with the stated purpose of the TAC Guideline which is "to assist the various road authorities in establishing and administering reasonably uniform criteria for the accommodation of utilities crossing highway (and freeway) rights-of way. It is Enbridge Gas's opinion that the TAC Guideline is not applicable for the planned gas pipeline installation parallel to County Road 46, as there is no road crossing involved in this installation.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.4 Attachment 1 Page 1 of 1

2.2 Definitions

C There is a commentary available for this Clause.

The following definitions shall apply in this Standard.

Line, distribution — a pipeline in a gas distribution system that conveys gas to individual service lines or other distribution lines.

Line, transmission — a pipeline in a gas transmission system that conveys gas from a gathering line, treatment plant, storage facility, or field collection point in a gas field to a distribution line, service line, storage facility, or another transmission line.

Table 4.9 Cover and clearance (See Clauses <u>4.11.1</u>, <u>4.11.2</u>, <u>4.11.3</u>, and <u>4.12.2.1</u>.)

C There is a commentary available for this Table.

			Cover for buried pipelines, minimum, m		
Location	Type of pipeline	Class loca- tion	Normal excavation	Rock excavation requiring blasting or removal by comparable means	
General (other than as indicated below)	LVP or gas HVP or CO ₂ HVP or CO ₂	Any 1 2, 3, or 4	0.60 0.90 1.20	0.60 0.60 0.60	
Right-of-way (road or railway)	Any	Any	0.75	0.75	
Below travelled surface (road)*	Any	Any	1.20	1.20	
Below base of rail (railway)+ — Cased — Uncased Water crossing	Any Any Any	Any Any Any	1.20§ 2.00§ 1.20‡	1.20§ 2.00§ 0.60	
Drainage or irrigation ditch invert	Any	Any	0.75	0.60	
Clearance from	Type of pipeline	Class location	Clearance for mm	r buried pipelines, minimum,	
Underground structures and utilities (conduits, cables, and other pipelines)	Any	Any	300		

* See Clause <u>4.12.3.1</u>.

Drainage tile

+ Within 7 m of centreline of the outside track, measured at right angles to the centreline of the track.

Any

* Reduced cover, but not less than 0.6 m, may be used if analysis demonstrates that the potential for erosion is minimal.

Any

50

(Continued)

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.4 Attachment 2 Page 2 of 2

Table 4.9 (Concluded)

§ Deviations from these requirements are permissible provided that the appropriate cover profile is determined through an engineering assessment in consideration of both normal and abnormal external loadings, and any other factors that could impact the integrity of the pipeline, and that

a) the cover directly below the base of rail is a minimum of 1.2 m for cased and 2.0 m for uncased pipelines; and

b) a minimum depth of cover of 0.75 m is maintained throughout the remaining area.

Notes:

1) Cover shall be measured to the top of the carrier pipe or casing pipe, whichever is applicable.

See also Clause <u>1.6</u>.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.4 Attachment 3 Page 1 of 1

4.11.1

G There is a commentary available for this Clause.

The cover requirements for buried pipelines shall not be less than the values given in Table <u>4.9</u>, except as allowed by Clause <u>4.11.2</u>.

Filed: 2020-08-14, EB-2020-0160, Exhibit I.STAFF.4, Attachment 4, Page 1 of 6

From:	Garde, Ty
To:	Blair Warnock
Subject:	[External] FW: TAC Guideline Intent and Usage
Date:	Wednesday, August 5, 2020 10:23:01 AM
Attachments:	Guidelines for Underground Utility Installations Crossing Highway Rights-of-Way - 2013.pdf

EXTERNAL: PLEASE PROCEED WITH CAUTION.

This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Scott forwarded his correspondence with the TAC lead author. You will see that he is in agreement with Scott interpretation of the use of the document. Notably, he agrees with Scott's statement that document is for crossings, not parallel alignments.

Ту

From: Scott Walker <Scott.M.Walker@enbridge.com>
Sent: Thursday, May 14, 2020 8:34 AM
To: Garde, Ty <ty.garde@woodplc.com>
Subject: FW: TAC Guideline Intent and Usage

Sorry Ty, I just wanted to make sure Lawrence was ok with us using his opinion in our response to Essex but I just got off the phone with him and he is fine with us using it.

Their committee has agreed to get together to discuss whether changes need to made to this document in the future to clarify its use.

Thanks,

Scott Walker

Manager Engineering - Pipeline Design **Core Projects**

ENBRIDGE TEL: 519-436-4600(5003418) | CELL: 519-365-2729 50 Keil Drive North Box 2001, Chatham, N7M 5M1 enbridge.com Safety. Integrity. Respect.

From: Lawrence Arcand <lawrence.arcand@t2ue.com>
Sent: Wednesday, May 13, 2020 11:59 AM
To: Scott Walker <<u>Scott.M.Walker@enbridge.com</u>>; 'juan.barrera@ibigroup.com'
<juan.barrera@ibigroup.com>; Scott, Christopher <<u>Christopher.Scott@york.ca</u>>; Murphy, Steve
<<u>Steve.Murphy@york.ca</u>>; Tony DiMarino <<u>tony.dimarino@t2ue.com</u>>
Subject: [External] RE: TAC Guideline Intent and Usage

EXTERNAL: PLEASE PROCEED WITH CAUTION.

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open attachments unless you recognize the sender or know the content is safe.

Hi Scott

Thanks for reaching out to us regarding the application of this document. As discussed you assessment listed below regarding the intent of the document is correct. I have attached a copy for everyone's reference. Look particularly at the Figure 4, which I have also cut and pasted to the bottom of this e-mail for ease.

I am including some additional people on this correspondence for input and to assist.

- Juan Barrera Vice Chair PUMS
- Christopher Scott Secretary PUMS
- Steve Murphy Former Co-Chair and current active member PUMS
- Tony DiFabio Member PUMS and MTO Team Lead Provincial Highway Corridor Management Section

Gentlemen. It appears as though Essex County is using our document and may be misinterpreting the content relative to this situation. I know when written it was intended, as per the title, to be relevant for crossings and not parallel lines. Figure 4 may however open the door to this misinterpretation.

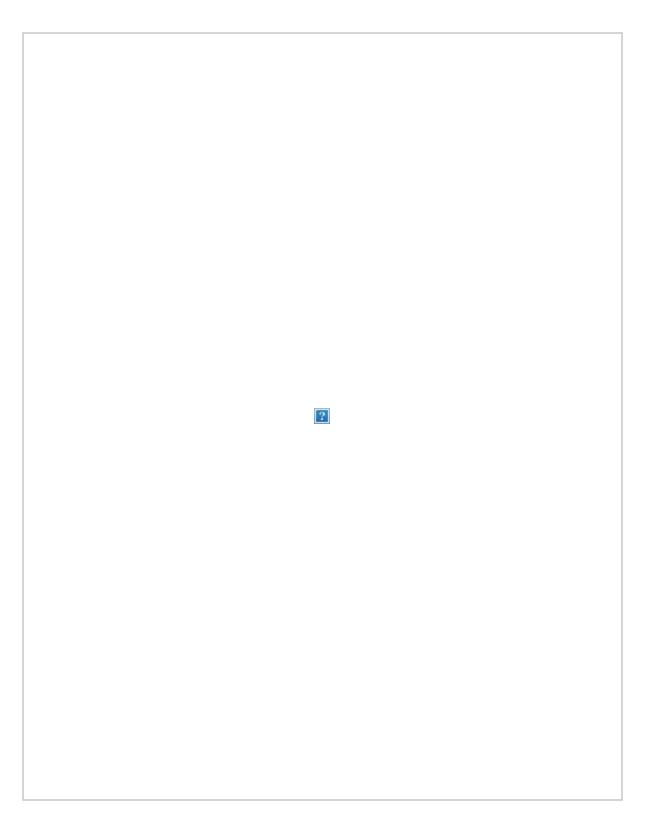
I have a couple suggestions – long term and short term.

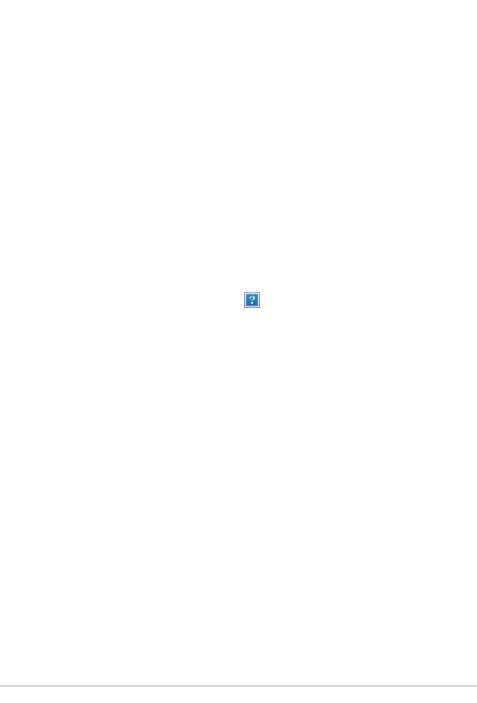
Long Term – I suggest that we add to the agenda of the next meeting to bring this topic up and review whether we need to publish and update or some clarification to this document.

Short Term – Tony, I know that you were part of the original group back in 2013 that pulled this document together. I wonder if it would help to get a clarification regarding MTO's use of and interpretation of this document so that some clarification may be provided in this situation. Read the details and let me know your thoughts, we can set up a call to discuss if necessary.

I would value your input and feedback to this situation.

Thanks, Lawrence





Lawrence Arcand, P.Eng, PE

President T2 Utility Engineers

330 Taunton Road East | Unit C-04 | Whitby ON L1R 0H4

Filed: 2020-08-14, EB-2020-0160, Exhibit I.STAFF.4, Attachment 4, Page 5 of 6

Direct: 289 638 2192 | Cell: 905 424 1959 Lawrence.Arcand@T2ue.com | www.T2ue.com | LinkedIn

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From: Scott Walker <<u>Scott.M.Walker@enbridge.com</u>>
Sent: Wednesday, May 13, 2020 10:59 AM
To: Lawrence Arcand <<u>lawrence.arcand@t2ue.com</u>>
Subject: TAC Guideline Intent and Usage

Lawrence, thanks again for your insight into this document as discussion with the Chair of The Committee that owns this document is helpful in assessment of our design of a current job along County Road 46 in Essex.

As discussed, this pertains to a 60km job in which approximately 29km is in road allowance along this county road. We are proposing to replace an old NPS 10 pipeline with a new NPS 6 pipeline. We have proposed a depth for this pipeline at 1m which is in excess of the required .6m required for a distribution pipeline in the CSA Z662 standard which we are required to meet for installation. As requested by the County we have also done a stress analysis that demonstrates that the pipe could be driven over by the most largest loads allowed on this road by a significant margin. At this time the county's position is that they can not approve something contrary to what is in the TAC guidelines without accepting full liability on any future issues.

Where I was hoping you could provide us with clarity is around the intent and usage of the TAC document. Our position is that this document is;

- 1. A document that collects practices from across Canada to guide users on potential requirements for utilities that are crossing highway right of ways (as the title suggests).
- 2. A guideline to help direct users with respect to potential content they may want to include in their own specifications and requirements documents.
- 3. That this document was created by subject matter experts in the field with a specific focus on the utilities crossing a highway with little specific discussion around pipes that are paralleling the roadway for many kilometers. Our assumption is that had longitudinal installations been an item that was intended to be incorporated into this document the results and expectations may have been different than the current content of this document.

Your comments with respect to the intent and usage of this document would be helpful and most appreciated.

Thanks,

Filed: 2020-08-14, EB-2020-0160, Exhibit I.STAFF.4, Attachment 4, Page 6 of 6

Scott Walker

Manager Engineering - Pipeline Design **Core Projects**

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Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.5 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/ Tab 1/Sch 5/App C/p.

Preamble:

The Haddad Report made the following observations:

- The higher end of the load analysis presented by Enbridge Gas yields results in excess of that following the prescribed loading criterion set forth by the Bridge Code's CL-625ONT vehicle or any evaluation vehicle defined in CAN/CSA S6.
- Consideration, with respect to soil response, does not included areas that have been disturbed and are formed with non-native soil to form the road, driveways and road shoulders over the years, to name a few instances of disturbance.

Question:

a) Please provide Enbridge Gas' interpretation of the significance of these observations in the context of the current proceeding.

Response:

a) The significance of the evaluating the higher loading was only for informational purposes to display to the County that the pipeline could withstand loads greater than those set out in the referenced codes.

The soil response comments are not significant because the pipeline, when backfilled according to Enbridge Gas's specifications including the recommendations of the projects geotechnical report, would not be subject to the non-uniformity of soils that have been disturbed over time.

Should the road widening be constructed at a future date, and assuming the pavement base, and subbase materials are comprised of OPSS 1010 granular materials, or the equivalent standard at the time of construction, with an asphaltic concrete surface as per conventional road pavement design, and further assuming the design thicknesses of the pavement components are sufficient to support the

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.5 Page 2 of 2

traffic loading, the engineering properties of the pavement materials would be superior to the existing subsurface soils that are present beyond the existing County Road 46 travel lanes, resulting in an improved loading capacity as compared to the existing soils.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.6 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 7/p.1

Preamble:

Essex County advised that the terms and conditions regarding the construction of the pipeline would be formalized in a Road User Agreement (RUA) and would act as the permit outlining the location of the pipeline and any construction activities which would require the consent of Essex County.

The RUA would be approved by Essex Council and adopted by by-law. Enbridge Gas states that the Franchise Agreement specifically delegated the ability to approve the location of a proposed pipeline to the Road Superintendent or other officer. Requiring approval of Essex Council is contrary to the express provision of the 1957 Agreement. According to Enbridge this RUA would appear to be an attempt to modify the 1957 Franchise Agreement without regard to the Municipal Franchises Act or this Board's Model Franchise Agreement.

Question:

- a) Please provide a copy of the most recent version of the RUA presented to Enbridge Gas by Essex County.
- b) Please identify the specific aspects or provisions of the RUA that Enbridge Gas considers to be a modification of the existing Franchise Agreement and explain why Enbridge Gas disagrees with these modifications. In Enbridge's view, is the RUA a supplement to the Franchise Agreement, or an unrelated document?
- c) Please identify the provisions of the RUA that Enbridge Gas has agreed to or is willing to agree to.
- d) Has Enbridge Gas entered into RUAs with other municipalities/counties? If so, please explain how these RUAs differ from the existing franchise agreements with these municipalities/counties?
- e) Please confirm that the existing Franchise Agreement has been in place without modification since 1957. Why has the Franchise Agreement not been renewed?

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.6 Page 2 of 2

- a) The most recent version of the RUA was filed by Essex. See Affidavit of J. Mustac, Exhibit M.
- b) and c) The primary disagreements with the County of Essex are in respect of the subject matter of this Application. It is not possible to confirm the acceptance or rejection of conditions in isolation from all other terms that would constitute the agreement. Not in the form substantially the same as presented by Essex County.
- d) Enbridge Gas has never entered into any form of RUA as substantive as the RUA being requested by Essex County. Typical agreements are in the form of municipal permits that are standard form. Most operational issues are dealt with as discussions between Enbridge Gas' construction group and the municipality.
- e) This is the current Franchise Agreement. Enbridge Gas has attempted to enter into the Model Franchise Agreement (MFA) with the County However, the County has not been willing to enter into the MFA until the RUA was signed.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.7 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 1/p.15

Preamble:

At this point, discussions with Essex have concluded without a signed RUA or other approval for the work to proceed.

Question:

a) Has Enbridge Gas had any further discussions/negotiations with Essex County since the application was filed? If so, please provide any updates.

Response:

a) Enbridge Gas has not had further discussions/negotiations with Essex County since the application was filed.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.8 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 4/ p.1

Preamble:

Enbridge Gas has estimated the cost for removing the abandoned pipeline and for providing the additional depth of cover at 1.5m as compared to the costs provided in the Leave to Construct Application. The combined potential increased cost is approximately \$13.1 million, consisting of \$5.9 million for the removal of the pipeline and \$7.2 million for the additional depth of cover.

Question:

a) Has Enbridge Gas engaged in any discussions with Essex County regarding sharing these additional costs? If so, what is Enbridge Gas' understanding of Essex County's position on cost sharing? If not, why not?

Response:

a) The County of Essex indicated that they are not willing to share costs associated with the project. Enbridge Gas understands that the County of Essex views all costs incurred for the project to be borne by the project.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.9 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 1/ p.15

Preamble:

Enbridge Gas requested that this proceeding be conducted expeditiously such that a decision is issued at the earliest opportunity and in any event prior to August 15, 2020 in order to avoid additional construction, demobilization and mobilization charges.

Question:

a) Please comment on the implications of a decision being rendered in October or November of 2020.

Response:

a) Due to the integrity and safety concerns of the existing NPS10, Enbridge Gas has begun construction on all areas not governed by the County of Essex in an effort to maintain the original schedule and targeted in-service date. Enbridge Gas could complete construction in 2020 with compression of work crews and reassurance of no permit delays from the County of Essex in moving forward once a decision is rendered.

Enbridge Gas will begin construction of the remaining assets as soon as a decision is rendered without delay. There would be added costs if a decision was delayed into November 2020 in demobilization and remobilization in 2021 for mainline work. Costs would also be incurred from missed opportunity to install the NPS6 main due to potential weather conflicts and winter pricing mechanisms as of November 1st.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.10 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 5/App C/p.1

Preamble:

The Haddad Report of May 7, 2020 states:

Both parties note the proposed construction will be located outside the current main roadway driving path but will come within 2m of the existing road edge. However, it is our understanding that the County Road 46 will experience road widening over the course of the pipelines life placing the proposed service within the drive path. Moreover, the existing shoulder is considered a travelled portion based on use of this region for maintenance activities and other motorist access needs.

Question:

a) Please explain whether, in Enbridge Gas' view, the shoulder of the road should be considered part of the traveled portion of the road?

Response:

Enbridge Gas does consider the gravelled shoulder part of the travelled portion of the road. The shoulder width varies to as little as approximately 1 metre in width. Enbridge Gas notes that only approximately 3300m of the more than 21,000 metres of the proposed pipeline along County Rd 46 is between 2-3m from the road edge and only some of that length will be within the gravelled shoulder of the road. The remainder of the proposed project is 3m or more, which is outside the gravelled shoulder of the road. Moreover, the proposed depth of cover of 1m is appropriate according CSA Z662 for depth of cover under the travelled portion of the road.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.11 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 7/p.7

Preamble:

Essex County was of the view that the location should accommodate a potential road widening of County Road 46 west of Manning Road for approximately 5.9 kms. Enbridge Gas moved the running line such that it was more than 6m from the edge of the traveled portion of the roadway to avoid a future conflict in this area.

Question:

- a) Is this the only potential road widening that Enbridge Gas is aware of?
- b) When is this road widening expected to occur?
- c) Will the existing pipeline in this area be removed by Enbridge Gas? If, so, please explain why.
- d) If the existing pipeline is to be removed by Enbridge Gas, please confirm whether:
 - i. Removal is part of the 21.8 km of line that Essex County is requesting that Enbridge Gas remove. If not, please confirm how many kilometres of existing line in this area will be removed by Enbridge Gas.
 - ii. Costs to remove this part of the line are part of the \$5.9 million costs estimated for the removal of the pipeline. If not, please provide the additional costs of undertaking the removal of the pipeline in this area.
- e) Has Essex County confirmed that the movement of this part of the line beyond 6m from the edge of the traveled portion of the roadway is an acceptable solution? If so, please provide details.
- f) Does the movement of this part of the line require Enbridge Gas to obtain any new easements (temporary and/or permanent)? If so, has Enbridge Gas obtained any new land rights that it requires?

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.11 Page 2 of 2

g) Is Enbridge Gas aware of any other potential road widening plans that would place any other part/s of the proposed service beneath the traveled portion of the road? If so, what is Enbridge Gas proposing to do with respect to the location of these parts of the line?

Response:

- a) Enbridge Gas has been advised by the County of Essex in general that road widening will happen along the entire proposed route. However, only the portion of west of Manning Road has any plan for widening within the next decade. Enbridge Gas notes that for even this section definitive plans are not available. The Capacity Expansion Program on the County of Essex website identifies pre-construction and construction on County Road 46 prior to 2037 and does not included any work, even environmental assessments, regarding the widening of County Road 46 east of Manning Road occurring before 2037.
- b) County of Essex has expressed differing timelines for when this widening will occur. See a) above.
- c) Enbridge Gas had planned to abandon in place in the ROW and evaluate easements on a case by case basis.
- d) i) Removal of the 21.8km in ROW was part of Enbridge assumption to abandon the existing pipe in place per construction and maintenance practices of properly sectioning, plugging, grouting and removal of all aerial crossings.

ii) The \$5.9M is an incremental cost to remove this part of the line compared to abandoning the existing pipe in place.

- e) Movement further than 6m from road edge to the West of Manning Road was established in consultation with Town of Tecumseh and was beneficial to the County of Essex requirements. This section of County Road 46 is a uniquely commercialized area with a number of covered drains which offers ease of installation further from road edge unlike the more rural areas. The County of Essex indicated this is an acceptable location in this section.
- f) Yes, please see Enbridge Gas's change request No.3. Lands secured in this application for the section west of Manning Road are sufficient to accommodate construction in this area.
- g) There have been no other road widening plans noted by any other municipality.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.12 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 5/p.2,3

Preamble:

At the request of the Essex County, Enbridge Gas completed a detailed engineering analysis of the stresses that would be transferred to the pipeline under the most severe loading conditions permissible by law in Ontario and found that the pipeline could withstand these stresses with a large margin of safety at the proposed 1m depth of cover.

This exercise was completed again with an independent third party, Wood PLC, that also concluded the pipeline could be safely operated under the most severe loadings expected.

Question:

a) Is it Enbridge Gas' view that the proposed 1m depth is sufficient if further future road widening occurs within this 29 km stretch of County Road 46 that results in the pipeline being under the traveled portion of the roadway?

Response:

a) Yes.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.13 Page 1 of 3 Plus Attachments

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 1/p.4 Exh B/Tab 1/Sch 7/p.8,9

Preamble:

Following receipt of its leave to construct approval, Enbridge Gas moved forward seeking consent with Municipal and County partners to install approximately 29 kms of the proposed NPS 6 distribution pipeline along County Road 46...

In addition to obtaining the consent from Essex County, Enbridge Gas also required consents from the Town of Lakeshore, as the pipeline design would be within close proximity to watermains owned and maintained by the Town of Lakeshore.

As a condition of their consent for the installation of the pipeline, the Town of Lakeshore required a minimum horizontal separation of 1.5m between its watermains and the pipeline, for safety and integrity reasons. Enbridge Gas understands the watermains were installed several decades ago and are vulnerable to leaks or breakage with the construction of another utility at the same depth.

The Town of Lakeshore has also advised Enbridge Gas of its concerns regarding the pipeline depth of 1.5m (requested by the County) and the impact that it would have on the safety and integrity of the existing watermain.

Question:

- a) Please provide evidence of discussions and/or comments provided by Town of Lakeshore (Lakeshore) regarding its concerns with the installation of the proposed pipeline at a depth of 1.5m meters and the separation between the pipeline and the watermains.
- b) Does Enbridge Gas's proposal for a depth of cover of 1m address the minimum horizontal separation of 1.5m that Lakeshore requires between its watermains and the proposed pipeline?

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.13 Page 2 of 3 Plus Attachments

- c) If the proposed pipeline were to be installed with a depth of cover of 1.2m, would Enbridge Gas be able to maintain the required horizontal separation of 1.5m that Lakeshore requires between its watermains and the proposed pipeline? Please explain and please provide the views of Lakeshore on this potential option.
- d) To the best of Enbridge Gas' knowledge, who would be liable for the cost to fix any damages/leaks that occur on Lakeshore's water mains as a result of Enbridge Gas having to install at a depth of 1.5m.
- e) Please identify the length of the line that would be in close proximity to these watermains.
- f) If there have been further discussions with Lakeshore since the application was filed, please provide a summary of these discussions and an indication of when Enbridge Gas expects to receive consent.
- g) Has Enbridge Gas obtained required consents from the Town of Tecumseh? If not, please provide a detailed explanation of any discussions and when Enbridge Gas expects to receive consent.

- a) Town of Lakeshore provided municipal consent with condition of 1.5 m separation; however the email correspondence (See Attachment 1 and 2) indicates they were aware this would not be possible for the entire stretch and agreed to work with Enbridge Gas in the field to accommodate Windsor Line proposal. Brian Laramie from the Town of Lakeshore expressed his concern for Enbridge installing at 1.5m at the final site walk through as the Town of Lakeshore water main which is currently at approximately 1.5m. There is significantly increased risk of plant damage to water main and services infrastructure if we install the natural gas main and subsequent services at the same depth.
- b) Yes. Enbridge Gas design of 0.75m and subsequently the 1m depth is sufficient to meet the minimum horizontal separation of 1.5m that Lakeshore requires between its watermains and the proposed pipeline. Where this separation is not possible, expedient alternative running line decisions have been jointly made in areas managed with the Town of Lakeshore to maintain clearances.
- c) Without daylighting to validate actual depths it should be possible to confirm such. To install at this depth of cover, Lakeshore warned it would warrant added construction mitigation to comply with safe excavation practices by supporting the

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.13 Page 3 of 3 Plus Attachments

water main horizontally wherever infrastructure has been exposed. During final consent walk through on Lakeshore Road 309 with Lakeshore the depth of 1.2m is of equivalent concern as the water main is generally found 1.2-1.5m depth.

- d) Enbridge Gas would be liable for any plant damage to Town of Lakeshore water main.
- e) At 1.5m depth Enbridge Gas's proposed pipeline could still be 1.5m laterally offset from the Lakeshore watermains for the entire length of the pipeline along County Road 46. Enbridge Gas primary concern is for loss of lateral support on the Lakeshore watermain because of the excavation being so close as well as the potential for conflict with gas services all crossing the watermain and its services.
- f) Enbridge Gas has municipal consent from Town of Lakeshore. Please see Attachment 3. A brief discussion with Brian Laramie from the Town of Lakeshore via phone to update that Enbridge Gas had made a request to daylight and verify actual locations of their watermains had been made to Krystal Kalbol. Brian Laramie indicated he may be following up with an email to Krystal but no conversations on this topic have happened since then.
- g) Enbridge Gas has the approval from Town of Tecumseh for proposed running line; however municipal consent is not required as the pipeline is not within Tecumseh Rds. Please see attachment 4.

From:	Brian Laramie
То:	Chantelle Rodger
Cc:	Nelson Cavacas; Tony DiCiocco; Albert Dionne; Jeff Wilson; Jill Fiorito; Addie White; Mark Murray; Garry Punt
Subject:	[External] RE: Enbridge Windsor Line Replacement - Lakeshore Municipal Consent and Approval for Mainline
Date:	Tuesday, March 24, 2020 8:52:25 AM
Attachments:	image004.png
	image005.png
	image006.png
	image007.jpg
	<u>TOL_Logo_120x60_186e3a59-dd5d-4158-9f44-c041cc7e2e86.png</u>
	facebookicon_d766ec2b-2c88-4634-9295-63362c1c35dd.png
	twittericon_413655e7-5826-47b3-a0de-f68255bcd6c4.jpg

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Good morning Chantelle,

The Town of Lakeshore understands your concern regarding the last condition stating that the Town requires 1.5 meters separation between the new gas main and Lakeshore watermain.

We understand this may not be possible for the entire project and we will work and be a partner with Enbridge as always to help this project proceed. If there are areas that Enbridge believes will be difficult to attain 1.5 meters separation from Lakeshore watermain, please identify these areas prior to the walkthrough and we can closely review in the field and come up with an agreeable running line. The Town can then issue an email approving these specific areas. The 1.5 meter separation was agreed to in the December 5th 2019 meeting and the Town also agreed to moving the running line closer to/into the road in certain areas to achieve the separation.

Reviewing the example below, Lakeshore main was well off our locates, which is the reason why spotting our main prior to construction was of top priority for both parties. Please correct me if I am wrong but with our watermain in the granular shoulder and only one existing utility (Bell) in the north boulevard, couldn't the alignment for gas be north of the Bell cables. By doing so the 1.5 meter separation is achieved and it would provide a decent amount of working space to install the new main. Is this correct or is there another utility north of the Bell cables that would prevent this change in alignment.

The Town of Lakeshore will not issue an amended Municipal Approval and Consent letter.

Please let me know if you have any questions or concerns, Brian Laramie

Brian Laramie Engineering Technologist

Town of Lakeshore

Filed: 2020-08-14, EB-2020--0160, Exhibit I.STAFF.13, Attachment 1, Page 2 of 4

T 519-728-1975 ext. 296 <u>blaramie@lakeshore.ca</u>

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NOTICE: Due to COVID-19, effective March 17, 2020 all Town facilities are closed to the public until further notice. The Town continues to monitor this rapidly changing public health situation in conjunction with the Windsor Essex County Health Unit and will provide updates as they become available. For further information about the pandemic, its impact on Town services and to receive emails on updates, <u>subscribe</u> to our webpage or check out our <u>Facebook</u> and <u>Twitter</u> accounts for up to date

From: Chantelle Rodger [mailto:Chantelle.Rodger@enbridge.com]
Sent: March-20-20 12:37 PM
To: Brian Laramie <blaramie@lakeshore.ca>
Cc: Nelson Cavacas <ncavacas@lakeshore.ca>; Tony DiCiocco <tdiciocco@lakeshore.ca>; Albert Dionne <adionne@lakeshore.ca>; Jeff Wilson <jwilson@lakeshore.ca>; Jill Fiorito

?

<jfiorito@lakeshore.ca>; Addie White <Addie.White@enbridge.com>; Mark Murray <Mark.Murray@enbridge.com>

Subject: RE: Enbridge Windsor Line Replacement - Lakeshore Municipal Consent and Approval for Mainline

Good afternoon Brian,

Thank you for your email yesterday and providing Lakeshore's approval for the mainline install and also for taking my call this morning.

I'm concerned about the last bullet point of Lakeshore's approval as it's pretty binding on EGI. As discussed, we became aware yesterday of a location on Lakeshore Road 309 where we are unable to meet a 1.5 meter separation from the watermain due to the location of existing utilities. Below is a photo for ease of reference.

Given bullet point 3 of the Approval, I think we agree that there will be locations where meeting a 1.5 meter separation from watermain will not be possible.

As such, I hoping that the Approval can be amended to state that EGI will work to achieve a 1.5 meter minimum separation between the proposed gas main and Lakeshore's watermain. In the event this separation is not possible EGI shall contact Lakeshore Engineering Services to establish a mutually suitable location for the NPS 6 gas main.

Please let me know if Lakeshore is in agreement.

Thank you,

Chantelle Rodger

Advisor Permitting Transmission

ENBRIDGE GAS INC. TEL: 519-436-4600 ext. 5002411 | CELL: 519-350-0557 | <u>chantelle.rodger@enbridge.com</u> P.O. Box 2001, 50 Keil Drive North, Chatham, ON N7M 5M1

enbridge.com Integrity. Safety. Respect.

From: Brian Laramie <<u>blaramie@lakeshore.ca</u>>
Sent: Thursday, March 19, 2020 3:55 PM
To: Chantelle Rodger <<u>Chantelle.Rodger@enbridge.com</u>>
Cc: Nelson Cavacas <<u>ncavacas@lakeshore.ca</u>>; Tony DiCiocco <<u>tdiciocco@lakeshore.ca</u>>; Albert
Dionne <<u>adionne@lakeshore.ca</u>>; Jeff Wilson <<u>iwilson@lakeshore.ca</u>>; Jill Fiorito

Filed: 2020-08-14, EB-2020--0160, Exhibit I.STAFF.13, Attachment 1, Page 4 of 4

<jfiorito@lakeshore.ca>

Subject: [External] Enbridge Windsor Line Replacement - Lakeshore Municipal Consent and Approval for Mainline

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Good afternoon Chantelle,

The Town of Lakeshore has completed review of all proposed mainline for the NPS 6 Windsor Line Replacement project. Attached is Lakeshore's Letter of Consent and Approval for all mainline installation within Lakeshore road allowances. A separate letter will be provided for all proposed gas service installations once review has been completed.

Please let me know if you have any questions or concerns, Thank you,

Brian Laramie Engineering Technologist

Town of Lakeshore T 519-728-1975 ext. 296 blaramie@lakeshore.ca

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Filed: 2020-08-14, EB-2020-0160, Exhibit I.STAFF.13, Attachment 2, Page 1 of 2

From:	Brian Laramie
То:	<u>Chantelle Rodger; Tammy Mungar</u>
Cc:	<u>Nelson Cavacas; Tony DiCiocco; Albert Dionne; Jeff Wilson; Jill Fiorito; Garry Punt</u>
Subject:	[External] Enbridge Windsor Line Replacement - Lakeshore Municipal Consent and Approval for Services
Date:	Thursday, April 2, 2020 1:32:41 PM
Attachments:	TOL_Logo_120x60_186e3a59-dd5d-4158-9f44-c041cc7e2e86.png
	facebookicon_d766ec2b-2c88-4634-9295-63362c1c35dd.png
	<u>twittericon_413655e7-5826-47b3-a0de-f68255bcd6c4.jpg</u>
	Enbridge Windsor Line Replacement – Municipal Approval for Services Signed.pdf

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Good afternoon Chantelle,

The Town has completed review of all proposed gas services within Lakeshore for the NPS 6 Windsor Line Replacement project. Attached is Lakeshore's Consent and Approval Letter.

As mentioned before, any changes for the proposed installation of the services will need to be communicated to Lakeshore for review and approval within Lakeshore road allowances. Please contact Jill Fiorito to coordinate inspections for open cut work within municipal drains.

Thank you, Brian

Brian Laramie Engineering Technologist

Town of Lakeshore T 519-728-1975 ext. 296 blaramie@lakeshore.ca

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NOTICE: Due to COVID-19, effective March 17, 2020 all Town facilities are closed to the public until further notice. The Town continues to monitor this rapidly changing public health situation in conjunction with the Windsor Essex County Health Unit and will provide updates as they become available. For further information about the pandemic, its impact on Town services and to receive emails on updates, <u>subscribe</u> to our webpage or check out our <u>Facebook</u> and <u>Twitter</u> accounts for up to date

From: Brian Laramie
Sent: March-19-20 3:55 PM
To: 'Chantelle Rodger' <Chantelle.Rodger@enbridge.com>
Cc: Nelson Cavacas <ncavacas@lakeshore.ca>; Tony DiCiocco <tdiciocco@lakeshore.ca>; Albert
Dionne <adionne@lakeshore.ca>; Jeff Wilson <jwilson@lakeshore.ca>; Jill Fiorito
<jfiorito@lakeshore.ca>

Filed: 2020-08-14, EB-2020-0160, Exhibit I.STAFF.13, Attachment 2, Page 2 of 2

Subject: Enbridge Windsor Line Replacement - Lakeshore Municipal Consent and Approval for Mainline

Good afternoon Chantelle,

The Town of Lakeshore has completed review of all proposed mainline for the NPS 6 Windsor Line Replacement project. Attached is Lakeshore's Letter of Consent and Approval for all mainline installation within Lakeshore road allowances. A separate letter will be provided for all proposed gas service installations once review has been completed.

Please let me know if you have any questions or concerns, Thank you,

Filed: 2020-08-14, EB-2020-0160, Exhibit I.STAFF.13, Attachment 3, Page 1 of 1



TOWN OF LAKESHORE

419 Notre Dame St. Belle River, ON NOR 1A0

April 2, 2020

Enbridge Gas Inc. 50 Keil Drive North Chatham, Ontario N7M 5M1

Re: Enbridge Windsor Line Replacement – Municipal Consent and Approval for Gas Services

The Town of Lakeshore has completed review of all submitted documents for the NPS 6 Windsor Line Replacement project. In coordination with the 2000 Model Franchise Agreement, please accept this letter as municipal consent and approval for the proposed gas service work within Lakeshore road allowances. The following conditions have been agreed upon through previous correspondence:

- All road allowances shall be restored to the pre-existing or better condition and restored to Lakeshore's satisfaction
- Pre-construction, construction and post-construction photos for each proposed gas service to be completed by Enbridge and available to the Town upon request
- The following services have been approved for open cut across a Municipal Drain
 - o 453 County Road 46 Middle Road Drain
 - o 1039 County Road 46 4th Concession Drain
 - o 2717 County Road 46 Middle Road Drain
 - o 2835 County Road 46 Knister Drain
- Additional open cuts across Municipal Drains beyond the four mentioned locations above will have to be reviewed and approved on a case by case scenario by Lakeshore
- Cable concrete matting to be used for bank stabilization of all open cuts of municipal drains
- All work within a Municipal Drain will be inspected. Lakeshore will appoint a representative to complete inspection
- All hard surface (asphalt and tar and chip) disturbed by servicing construction will be repaired to the Town of Lakeshore's satisfaction. Specifications for asphalt restoration will be determined on a case by case scenario
- A minimum vertical separation of 2 meters between proposed gas main and engineered hard bottom of Municipal Drains is required
- A minimum vertical separation of 1 meter is required between watermain and proposed gas service crossings

Should you have any questions please do not hesitate to contact the undersigned.

Yours truly,

Brian Laramie, C.E.T. Engineering Technologist Engineering Services

From:Chantelle RodgerTo:Michelle LanduytSubject:FW: EGI 2020 Windsor Line ReplacementDate:Wednesday, June 24, 2020 2:41:00 PMAttachments:Enbrige Temporary Use Approval-NTR.pdf

TLU request was submitted March 10, 2020. Approval per below received March 11, 2020

Chantelle Rodger

Advisor Permitting Transmission

ENBRIDGE GAS INC.

TEL: 519-436-4600 ext. 5002411 | CELL: 519-350-0557 | <u>chantelle.rodger@enbridge.com</u> P.O. Box 2001, 50 Keil Drive North, Chatham, ON N7M 5M1

<u>enbridge.com</u>

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From: Kirby McArdle <kmcardle@tecumseh.ca>
Sent: Wednesday, March 11, 2020 9:15 AM
To: Chantelle Rodger <Chantelle.Rodger@enbridge.com>
Cc: Sam Paglia <spaglia@tecumseh.ca>; Brad Dupuis <bdupuis@tecumseh.ca>; John Henderson
<jhenderson@tecumseh.ca>
Subject: [External] EGI 2020 Windsor Line Replacement

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Chantelle,

In follow up to our meeting yesterday I wanted to provide some comments for the work as proposed.

The County of Essex is the Road Authority and as such any municipal consent will need to come from them. They will also be the approval authority for any new entrances or culverts enclosing any of their roadside ditches. For any restoration details with respect to these ditches direction will need to come from them as well.

The proposed pipeline does cross several Municipal Drains and for some locations it runs parallel to a Municipal Drain. For these areas our Drainage Superintendent, Sam Paglia will be in contact with you with regards to information on the drain designs and grades. My understanding is we may engage a consultant on behalf of the drains owners to inspect any work in/on or around these Municipal Drains.

The Town's main concerns regarding the project as proposed was in relation to a future trunk water main planned on the same side of the road. Currently, a distribution main runs along the road and services a portion of the residents; the Towns long-term plans include the installation of a 400mm transmission main along the length of the project. After review of the works we can confirm that as

shown on the plans there is enough room to satisfy our separation concerns when the future works takes place. There will be locations where the existing water main may be exposed due to construction but these are unavoidable. As long as the new pipe line is placed in accordance with the plans reviewed the Town has no objections to its location.

We do request that the Water Department be informed of any works that may entail the existing water main to be exposed either by daylighting to verify or through open cut construction. The Water Department also requests to be consulted on the decisions for the service connections of the new pipe line that will cross the water main to the north side of CR #46.

With respect to the use of a portion of closed North Talbot Rd. at the easterly extent of the project the Town will allow this road allowance to be used as a staging area. The area will be returned to pre-existing conditions upon completion of the works to the Towns satisfaction.

Kirby McArdle, P.Eng. Manager, Roads & Fleet Town of Tecumseh

Kirby McArdle Manager Roads & Fleet

kmcardle@tecumseh.ca Town of Tecumseh - 917 Lesperance Rd - Tecumseh, ON. - N8N 1W9 Phone: 519 735-2184 , 144 Fax: 519 735-6712 - <u>www.tecumseh.ca</u>

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Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.14 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from <u>Board Staff (STAFF)</u>

INTERROGATORY

Reference:

Exh B/Tab 1/Sch 7/App.A./p.3

Preamble:

As part of the application, Enbridge Gas has provided an Administrative Report from the Essex County Engineer to the County Council, which states the following:

The existing pipeline, is located approximately 9m outside the existing edge of pavement and is to some extent installed in the municipal right of way with approximately 20% in private easements.

Question:

- a) Please confirm whether Enbridge Gas agrees with the description of the location of the existing pipeline provided in the Administrative Report. If not, please provide a description of the location of the existing pipeline along County Road 46.
- b) Is any portion of the existing pipeline located within 6m of the traveled portion of roadway?
- c) Has Enbridge Gas considered whether the installation of the entire new pipeline more than 6m from the existing travelled portion of County Road 46 is feasible? If not, please explain why this has not been considered. If this has been considered, please explain why this has not been pursued and provide an estimate of the additional associated costs.

- a) Confirmed.
- b) Yes, approximately 6.2kms.
- c) Enbridge Gas has completed an extensive review of right of way of County Road 46 and has determined that the proposed alignment is best and that an alignment

Filed: 2020-08-14 EB-2020-0160 Exhibit I.STAFF.14 Page 2 of 2

greater than 6m from the edge of the road is not feasible. There are a number of conflicts with other utilities and municipal drains.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ED.1 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Environmental Defence (ED)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 4, Page 2

Preamble:

"The estimated cost for the scope of work to remove the NPS 10 steel requested by the County of Essex rather than to abandon the existing NPS 10 is ... \$5,875,000"

Question:

- (a) Please provide a table detailing the difference in the cost of leaving the abandoned pipe in place as approved in EB-2019-0172 versus the cost of removal as calculated in Enbridge's s. 101 Application. Please itemize the costs for each option and the difference between the totals for each.
- (b) For comparative purposes, please complete the following table comparing the costs and project details in the ten most recent pipeline removal project in Canada that Enbridge has been involved in:

Project name	Cost	Length of	Cost	Size of	Reason	Project
		pipe	per km	pipe	for	start and
					removal	end date
Windsor						
Pipeline						
Comparator 1						
Comparator 2						
Comparator n						

- (c) If Enbridge if believes the above table does not include the most appropriate comparators, please complete the table again with the projects that Enbridge believes are the most appropriate comparators.
- (d) On a best efforts basis, please provide (i) an estimate of the cost per km to abandon a pipeline in place on average and (ii) an estimate of the cost per km to remove a pipeline on average. If an average is imprecise, please provide a range of

reasonable figures for each. Please provide Enbridge's underlying calculations and assumptions.

(e) How much abandonment funding would be required to be set aside for the Windsor pipeline according to the formula used by the Canadian Energy Regulator for pipeline abandonment? Is this amount based on the assumption of remove or leaving the pipe in place or otherwise?

- a) Please see Enbridge Gas's pre-filed evidence at Exhibit B, Tab 1, Schedule 4, page 1 to page 3 for the difference in the cost of leaving the abandoned pipe in place as approved in EB-2019-0172 versus the cost of removal as calculated in Enbridge Gas's. 101 Application.
- b) and c) These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.
- d) and e) These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1. Enbridge Gas also notes that each abandonment will be unique given the circumstances of the abandonment, and therefore the cost will be different in each circumstance.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ED.2 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Environmental Defence (ED)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Pages 8 to 15

Question:

- (a) If Enbridge abandons the pipeline in place, who would be responsible for removing the pipeline in the future if the space is needed for other utilities?
- (b) If Enbridge abandons the pipeline in place, who would be responsible for removing the pipeline in the future if the space is needed for other utilities if Enbridge has gone bankrupt?
- (c) Does Enbridge reserve funds for abandonment costs in a way that ensures ratepayers are protected in the event of Enbridge going bankrupt? Please explain.
- (d) Please provide excerpts of all portions of the relevant franchise and road user agreements relating to pipeline abandonment and removal.
- (e) Is Enbridge required in its franchise agreement or road user agreement to remove this pipeline if required by Essex?
- (f) Please describe in detail how the Canadian Energy Regulator regulates pipeline abandonment, including the criteria used to determine when a pipeline should be removed versus left in place, the methodology used to estimate the costs that should be set aside, and whether the costs that must be set aside are based on removal or abandonment in place. Please cite and file all relevant Canadian Energy Regulator documentation relation to this topic.
- (g) Please compare the responses to (f) to how abandonment is regulated by the OEB. Please discuss and explain the differences.
- (h) Essex asserts that: "Enbridge proceeded to commence construction of the new pipeline without obtaining the prior approvals, permits, licences and certificates from the County to construct the pipeline within its jurisdiction. (Essex Evidence, Tab 1, p. 3)" Is that true? If not, please explain.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ED.2 Page 2 of 2

Response:

- a) and b) While this question is out of the scope of the current proceeding, Enbridge Gas notes that the existing NPS10 is near the property line of homeowners which is a highly unlikely location for other utilities to locate.
- c) As indicated in EB-2019-0188, Exhibit I.ED.4:

A provision for future abandonment costs is included in OEB approved gas distribution rates and is collected in the asset depreciation rate. Future abandonment costs charged to earnings through the depreciation expense are recorded as a liability on the Enbridge Gas financial statements and are collected from all ratepayers. Depending on the circumstances, the costs could be charged to ratepayers in different manners, such as through higher net salvage rates included within depreciation rates and provisions included within rates, for a period of time leading up to and or after the abandonment. While less likely, it is also possible that the pipe retirement and abandonment could be treated as an extraordinary retirement, and a loss could be included within rates. It is also possible, that should such a situation arise, the Board could order some other mechanism for recovery.

- d) Please see Enbridge Gas pre-filed evidence at Exhibit B, Tab 1, schedule 3 and Exhibit B, Tab 1, Schedule 7, Appendix A, page 45 to 52 for the Road User Agreement with Essex County.
- e) Removal of any abandoned and decommissioned pipeline would be subject to the provisions and interpretation of the Franchise Agreement. There are circumstances where removal would not be required, such as the present Application, and there are circumstances where removal would be appropriate. The condition of decommissioning the pipeline as set out in the RUA is a deviation from Enbridge Gas' ordinary practice.
- f) The Windsor Line Replacement Project falls under the regulation of the OEB, not CER. The proposed Windsor Line Replacement and the existing Windsor Line are distribution pipelines and as such the abandonment of the existing Windsor Line does not require OEB approval. Enbridge Gas will abandon the existing Windsor Line to meet the requirements of the CSA Z662-15, Clause 12.10.3.4. Please see Exhibit I.STAFF.2.
- g) Refer to response in part f).
- h) Please see Exhibit I.ESSEX.4 f).

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ED.3 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Environmental Defence (ED)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Pages 8 to 15; Essex Evidence, Tab 5, p. 19.

Preamble:

The TAC Guidelines for Underground Utility Installations Crossing Highway Rights-of-Way state:

"The utility should notify the road authority in writing of the intention to abandon its facilities in place. Such abandoned facilities within the right-of-way should remain the responsibility of the utility. The road authority may give reasonable notice to require the removal of abandoned utility facilities and restoration of the right-of-way, or the filling of any such facilities by an approved method, when necessary to avoid interference with the operation, maintenance or reconstruction of the highway. Any facilities that the utility requests to abandon that contain hazardous materials should not be permitted to remain in the rightof-way and should be removed at the utility's expense. Any utility facilities that are proposed to be abandoned and removed by the utility should be disposed of consistent with industry standards and provincial and local laws."

Question:

- (a) Does Enbridge agree with the above TAC Guideline? If not, why not?
- (b) If Enbridge leaves the pipeline in place, would it remain the responsibility of the utility?

Response:

a) As noted elsewhere, Enbridge Gas views the applicability of the TAC Guideline as a whole to be in relation to areas where utilities cross highways and not longitudinal installations within a municipal right-of-way. Enbridge Gas would interpret this provision to permit abandonment in place in areas of utilities crossing rights-of-way except where the existing pipeline would physically conflict with planned infrastructure.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ED.3 Page 2 of 2

b) Abandoned pipeline as per the Model Franchise Agreement is the responsibility of the Municipality.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ED.4 Page 1 of 3

ENBRIDGE GAS INC. Answer to Interrogatory from Environmental Defence (ED)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 4, Page 2

Preamble:

In EB-2019-0188, Exhibit I.ED.4, Enbridge said:

A provision for future abandonment costs is included in OEB approved gas distribution rates and is collected in the asset depreciation rate. Future abandonment costs charged to earnings through the depreciation expense are recorded as a liability on the Enbridge Gas financial statements and are collected from all ratepayers. Depending on the circumstances, the costs could be charged to ratepayers in different manners, such as through higher net salvage rates included within depreciation rates and provisions included within rates, for a period of time leading up to and or after the abandonment. While less likely, it is also possible that the pipe retirement and abandonment could be treated as an extraordinary retirement, and a loss could be included within rates.

Question:

- (a) How does Enbridge propose to recover the costs for removing the pipeline if it is required to do so?
- (b) Please describe generally how pipeline abandonment is paid for in Ontario, including those that are removed and those that are left in place.
- (c) How much funding, if any, has been set aside or earmarked for the abandonment of this pipeline?
- (d) Enbridge said that "abandonment costs [are] included in OEB approved gas distribution rates and [are] collected in the asset depreciation rate." Please indicate the amount collected in relation to the NPS 10 pipeline at issue.
- (e) Enbridge said that "abandonment costs [are] included in OEB approved gas distribution rates and [are] collected in the asset depreciation rate." Please indicate the amount collected in relation to all Ontario pipelines to date. Please discuss

whether this could or should be used to pay for the removal of this pipeline if said removal is required.

- (f) Please explain and elaborate on the paragraph included in the preamble.
- (g) How much abandonment funding would have been required to be set aside for the NPS 10 pipeline according to the formula used by the Canadian Energy Regulator for pipeline abandonment?

- a) If Enbridge Gas is required to incur incremental costs to remove the NPS 10 steel main as requested by the County of Essex, as opposed to abandoning it in place, the costs will be charged/debited to accumulated depreciation consistent with the treatment of costs that would have been incurred to abandon the pipe in place.
- b) In accordance with the Uniform System of Accounts for Class A Gas Utilities, gas utilities in Ontario recover (and ratepayers pay for) the net salvage cost (or abandonment cost, or cost to retire) of a pipeline through the depreciation charged on the pipeline over its life. Depreciation allocates the service value of the plant asset over its estimated life in a systematic and rational manner. The service value of the plant, for depreciation purposes, shall be its cost less its estimated net salvage value. Net salvage value means the salvage value less removal costs. In cases where removal costs exceed salvage value, the net salvage value will be negative. Whether pipeline abandonment is through removal or via being left in place, recovery is the same, but the quantum of the net salvage value to be recovered is impacted.
- c) Enbridge Gas does not set aside or segregate funds for the abandonment of pipelines. With regards to the new Windsor pipeline, no abandonment / net salvage / cost to retire liability has been established as-of-yet, as the pipeline is not in service, and therefore no depreciation has been recognized.
- d) Enbridge Gas is not able to provide the amount specific to the NPS 10 pipeline at issue. The costs collected through the asset depreciation rates over the life of the pipeline are calculated at the group (or pool) level, and not the individual asset level.
- e) Enbridge Gas does not have the required information for all Ontario utilities, to be able to quantify the amount of abandonment costs collected in relation to all Ontario pipelines to date. Enbridge Gas is also not able to quantify the amount it has collected to date, as the actual cost of retirements have been netted against amounts collected over time. Also, please see response to Part a).

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ED.4 Page 3 of 3

- f) The preamble to this question reflects a portion of Enbridge Gas's response to an Environmental Defence (ED) interrogatory in EB-2019-0188, in which ED asked who would pay for the cost of abandoning a pipeline if it becomes a stranded asset. Enbridge Gas's response attempted to articulate how abandonment costs were typically recovered in relation to assets that were retired in the normal course of business, at the end of their useful lives. This is further elaborated upon in the other parts of this interrogatory response. The response in the preamble then attempted to further articulate, that under the scenario of a stranded asset, it is possible that the treatment and recovery of a stranded asset (including the abandonment of that asset) could occur in different manner, such as through an extraordinary retirement, subject to Board approval.
- g) The quantum and treatment of abandonment costs that would have been required for the NPS 10 pipeline in accordance with the Canadian Energy Regulator formula is not relevant to this proceeding.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ED.5 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Environmental Defence (ED)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Pages 14 and 15, paragraph 61

Preamble:

"The critique by Haddad, Essex County's third party reviewer, is erroneously relying on a transmission pipeline standard for depth and not the distribution pipeline standard;"

Question:

- (a) Why are the standards for depth different for transmission versus distribution pipelines from an engineering perspective?
- (b) Why are the standards for depth different for transmission versus distribution pipelines from a legal/policy perspective?
- (c) Is the pipeline in question part of the Dawn-Parkway system?
- (d) Please provide a map situating the pipeline in Ontario's overall gas pipeline network.
- (e) The map at Exhibit B, Tab 1, Schedule 1, Attachment 1, describes the stations along this pipe as "transmission stations." Why are these called "transmission" stations if the pipeline is not a "transmission" pipeline.
- (f) To shed light on the transmission/distribution distinction, please provide a map of all of Enbridge's pipelines in Ontario that distinguishes between those that are transmission pipelines and those that are distribution pipelines (e.g. with two different colours).

- a) Standards for installation depth of distribution pipelines are generally less than those of transmission pipelines for the following reasons:
 - i. Distribution pipelines operate at a lower stress making them less susceptible to adverse effects of other loadings.

- b) Minimum requirements for each are specified in the CAN/CSA Z662-15. Distribution pipelines are used to deliver gas directly to customers, so attachments to these lines are frequent. Shallower depth makes them more cost effective to install and easier and safer to attach to. Distribution lines are generally installed in public right of ways which contain other utilities and the shallower installation depth avoids potential conflict with utilities that need to be installed below the frost line, like sewer and water pipelines. Transmission lines tend to operate at higher stresses.
- c) No.
- d) This question is not relevant to the issues in this proceeding. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.
- e) The name transmission station is a historical term that Enbridge Gas has used but not consistently to name a station that regulates gas from one pipeline system to another. Other common terms are distribution station or regulating station. The term transmission station is not meant to define the classification i.e. transmission vs. distribution, of a pipeline. Historically the Windsor Line was designed to bring gas into Windsor from Port Alma. The first stations installed to feed this pipeline or from this pipeline to other pipelines at lower pressures carried that Transmission name.
- f) This question is not relevant to the issues in this proceeding. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.1 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit A, Tab 2, Schedule 1, page 1, paragraph 2 and page 7, paragraph 24.

Preamble:

"This Application is to resolve a dispute between Enbridge Gas and The Corporation of the County of Essex ("Essex County")..."

"Enbridge Gas will participate in written and/or oral proceedings, including, if ordered, virtual technical or settlement conferences to ensure an expeditious decision following a proper review and consideration of the matters herein."

Question:

- a) Does Enbridge Gas believe that its dispute with Essex County can be resolved through a settlement process with the assistance of a facilitator appointed by the OEB? Please explain the reasons for your answer.
- b) Please list all compromise solutions that Enbridge proposed to Essex County to resolve the dispute prior to its decision to file this Section 101 application.
- c) Please confirm that Enbridge could have resolved its dispute with Essex County at the risk of higher project costs than were approved by the OEB in the EB-2019-0172 Decision, but decided to file the Section 101 application to obtain OEB preapproval of higher project costs in order to preclude a prudence review of project costs at re-basing. Please explain your answer.

- a) Enbridge Gas seeks to negotiate resolutions where possible. Given the current situation and the stated positions, Enbridge Gas is not optimistic that a facilitated settlement process would prove successful.
- b) Please see Exhibit B, Tab 1, Schedule 7 for the discussion between Enbridge Gas and Essex County to resolve the dispute prior to its decision to file this section 101 application. As stated in the pre-filed evidence, Enbridge Gas engaged in several

discussions with Essex County in regards to the construction of the Windsor Line project within County Road 46 Right of Way, but Enbridge Gas was not able to get consent from Essex County unless Enbridge Gas made significant departures from the requirements of the CSA Z662 code and Enbridge Gas's construction policies and procedures. Also, see response to part b) and Exhibit I.PP.7 a).

c) Enbridge Gas does not agree with the premise of the question. Condition 4 of the Board's order in EB-2019-0172 (reproduced below), required Enbridge Gas to seek prior approval from the Board if there were changes to the project. As such, Enbridge Gas could not accede to the demands of the County of Essex without approval of the Board. The County of Essex will not agree to grant a permit to Enbridge Gas to construct the project as Enbridge Gas has requested consistent with the approval in EB-2019-0172.

The evidence put forward by Enbridge Gas has demonstrated the safety of its proposal and its compliance with applicable legal requirements. The depth of cover was specified in the environmental report to be 1.0m consistent with Enbridge Gas's practices. The County of Essex has insisted upon the additional depth which would cause Enbridge Gas to depart from its typical construction practice.

In addition, removal of the NPS 10 pipeline for virtually the entire length was not contemplated in EB-2019-0172 and therefore did not form part of the project approved by the Board. The normal practice is to abandon such pipelines in place in municipal rights-of-way.

If Enbridge Gas's request for its preferred installation location and abandonment in place of the existing pipeline is granted such that there is no significant delay, it is not anticipated that costs will exceed the amount approved by the Board.

4. Enbridge Gas shall advise the OEB of any proposed change in the project, including but not limited to changes in: OEB-approved construction or restoration procedures, the proposed route, construction schedule and cost, the necessary environmental assessments and approvals, and all other approvals, permits, licences, certificates and rights required to construct the proposed facilities. Except in an emergency, Enbridge Gas shall not make any such change without prior notice to and written approval of the OEB. In the event of an emergency, the OEB shall be informed immediately after the fact.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.2 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit A, Tab 2, Schedule 1, page 2, paragraph 6 and Exhibit B, Tab 1, Sch. 4, page 1, paragraph 2

Preamble:

"This Application will confirm to the Board that Enbridge Gas will install the NPS 6 steel for the entire length of the pipeline."

Question:

- a) What is the increase in the length and the cost of using NPS 6 steel (pipe) for the entire length of the pipeline over what was approved by the OEB in the EB-2019-0172 Decision? Please provide details about the increase in the cost of materials, labour, contingency and overheads.
- b) Is the increased cost due to the installation of a greater length of NPS 6 steel pipe included in the \$13.1 million cost estimate.

- a) This question is beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.
- b) In EB-2019-0172 Enbridge Gas had indicated that installing NPS 6 for the entire length was approximately \$1.3 million more than a combination of NPS 6 and NPS 4. The \$13.1million does not include costs associated with such change. Enbridge Gas would not be installing a greater length of NPS6 as a result of this Application as the preferred running line route has not changed.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.3 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit A, Tab 2, Sch. 1, Page 3, Paragraph 8

Question:

- a) Please confirm that this is the first Section 101 application filed by Enbridge Gas or its predecessor gas distributors.
- b) Please explain the reasons why a gas distributor would need to file a Section 101 application.

- a) Please see Exhibit I.PP.1 e).
- b) Please see Exhibit I.PP.1 c) and d).

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.4 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit A, Tab 2, Sch. 1, Page 6, Paragraph 22

Preamble:

"Essex County chose not to participate in the LTC Application even though it was aware its position on the depth of cover would not(be) meeting the following circumstances:

- a. were not required to meet the CSA Z662;
- b. were not required to ensure the safety of persons or property;
- c. were not consistent with the purpose and intent of the existing 1957 Franchise Agreement (Exhibit B,Tab 1, Schedule 3, Appendix A); and
- d. That Enbridge Gas would not readily agree to such demands."

Question:

- a) Please confirm that Enbridge was aware of the position of Essex County at the time of the EB- 2019-0172 LTC proceeding.
- b) Did Enbridge inform the OEB of the position of Essex County during the EB-2019-0172 LTC proceeding? If the answer is yes, please file copies of any documents or Technical Conference transcript references where Enbridge informed the OEB of the position of Essex County. If the answer is no, please explain why not.

- a) Yes, Enbridge Gas was aware of the position of Essex County with respect to its preference for additional depth at the time of the EB-2019-0172 proceeding. However, the use of the TAC Guidelines as a required standard was not known until April 8, 2020.
- b) No, as indicated in the evidence in the LTC proceeding Enbridge Gas was continuing discussions with municipalities of Tecumseh, Lakeshore, Chatham-Kent and Essex County in varying regards to consent for execution of the project. All

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.4 Page 2 of 2

impacted municipalities including the County of Essex provided letters of support for the project and were included in the original LTC application. Route refinement with municipalities are typically managed through the municipal consent/permit process.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.5 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit A, Tab 2, Schedule 1, pages 7 and 8, paragraph 26

Question:

- a) Please confirm that Enbridge is not seeking OEB approval of additional costs for the Windsor Replacement Project that are greater than what was approved by the OEB in the EB-2019-0172 Leave-to-Construct Decision. Please explain your answer.
- b) Please confirm that Enbridge will not be seeking an increase in the Windsor Pipeline Replacement Project ICM rate rider approved by the OEB in the EB-2019-0194 Decision. Please explain your answer.
- c) Please confirm that Enbridge will not be seeking approval of a new or revised ICM rate rider for the Windsor Pipeline Replacement project in the EB-2020-0095 Enbridge Gas application for OEB approval of its proposed 2021 rates. Please explain your answer.

Response:

a) to c) Confirmed. This Application is not seeking approval of costs. Enbridge is seeking direction regarding the nature in which the Project will be completed. Depending upon the decision of the Board, costs incurred may or may not change from Enbridge's estimated costs in EB-2019-0172.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.6 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Sch. 1, page 4, paragraph 13

Preamble:

"Essex County has requested that when the proposed pipeline is within 6 metres of the edge of the road that the pipeline be installed with a 1.5 metres minimum depth of cover."

Question:

- a) What length of the existing NPS10 pipeline is within 6 metres of the edge of the road?
- b) What length of the proposed NPS 6 pipeline is within 6 metres of the edge of the road?

- a) Approximately 6.2 kms of the existing NPS 10 pipeline is within 6m of the edge of County Road 46.
- b) Approximately 22.9 kms of the proposed NPS 6 pipeline is within 6m of the edge of County Road 46. See pre-filed evidence at Exhibit A, Tab 2, Schedule 1, paragraph 11.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.7 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Sch. 1, page 6, paragraph 21

Preamble:

"Enbridge Gas did consider moving the running line to a location greater than 6 metres from the traveled portion of the roadway. While this would position the pipeline away from the road edge and minimize lane closure requests, the location is problematic as it generally positions the pipeline on the edge of, or under, municipal drains."

Question:

- a) How many municipal drains would be affected? Please provide the number of drains and the length of pipe involved.
- b) Please compare the cost of the option of moving the running line to a location greater than 6 m from the travelled portion of the roadway at less than 1.5m of cover to the option of leaving the running line within 6 m at 1.5 m depth of cover. Please provide itemized cost information to support your answer.

- a) There are 8 drains that would be affected, Doyle, Bondy, Brady Outlet, Knister, Middle Road, 4th Concession, Doyle and 18-19 Side Road. The length of pipeline involved is approximately 12.5 kms in length.
- b) This option is not feasible regardless of the depth as it would place the main in drains. Connection of distribution customers from the bottom of drains is inconsistent with reasonable practice. Therefore, the costs have not been estimated as the installation is not feasible.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.8 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Pages 14 and 15, paragraph 61

Preamble:

"The critique by Haddad, Essex County's third party reviewer, is erroneously relying on a transmission pipeline standard for depth and not the distribution pipeline standard;"

Question:

- a) What is the definition of a transmission line? Please provide direct quotes with references to acts, regulations, and standards.
- b) Please explain using the definitions with references from your response to part (a) why the Windsor Replacement Pipeline is not a transmission line.

Response:

a) CSA Z662 defines a transmission line as a pipeline in a gas transmission system that conveys gas from a gathering line, treatment plant, storage facility, or field collection point in a gas field to a distribution line, service line, storage facility, or another transmission line.

CSA Z662 defines a distribution line as a pipeline in a gas distribution system that conveys gas to individual customers or other distribution lines.

CSA Z662, Clause 12, Scope Diagram Figure 12.2, depicts transmission lines as upstream of metering and/or odorizing and/or pressure-regulating stations. TSSA Code Adoption Document (CAD) Amendment, FS-238-18 – Oil and Gas Pipeline Systems, February 15, 2018, which adopts and amends CSA Z662-15, Clause 2.2 by clarifying that for the purpose of the CAD, within in gas pipeline system, a transmission line is one that operates over 30% of the pipes specified minimum yield strength (%SMYS).

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.8 Page 2 of 2

b) The Windsor Line Replacement is a distribution line, not a transmission line. The line operates at less than 30% SMYS and is downstream of a pressure regulating station. The line conveys gas to individual service lines and other distribution lines. Also, see Exhibit I.PP.1 a).

Filed: 2020-08-14 EB-2020-0160 Exhibit I.EP.9 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Energy Probe (EP)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 4, page 3, paragraph 8

Preamble:

"The LTC Application was premised upon the requirements of CSA Z662 and Enbridge Gas's construction standards, policies and procedures. The costs provided in the LTC Application did not include the additional costs of achieving a depth of cover of 1.5 metres for approximately 22.9 kms."

Question:

Please confirm that the EB-2019-0172 LTC application cost estimate was based on meeting minimum requirements of CSA Z662. If the answer is yes, please explain why Enbridge only planned to meet minimum requirements of CSA Z662. If the answer is no, please list the requirements of CSA Z662 that Enbridge was planning to exceed on the Windsor Pipeline Replacement Project.

Response:

Enbridge Gas confirms that the cost estimate in the EB-2019-0172 LTC application was based on exceeding the minimum requirements of CSA Z662. The cost estimate was based on a minimum installation depth of 0.75m in road right-of -way and 1m for road crossings. Minimum depth of cover as required by CSA Z662, section 12, table 12.2 for road right-of-way and road crossings is 0.6m.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.1 Page 1 of 2 Plus Attachments

ENBRIDGE GAS INC. Answer to Interrogatory from <u>County of Essex (ESSEX)</u>

INTERROGATORY

Reference:

Exhibit A, Tab 2, Schedule 1, Page 1, Paragraph 2

Preamble:

Enbridge alleges that the County is "withholding approval for construction unless Enbridge makes significant and costly departures from the requirements of the" CSA Standards.

Question:

- a) Does Enbridge understand that the County is the road authority for County Road 46 and has an obligation for, among other things, ensuring that the roadways under the County's jurisdiction are safe and available to all users?
- b) Does Enbridge understand that the County applies a number of principles and guidelines in its oversight of roadways under its jurisdiction, including the placement of infrastructure, which principles and guidelines include the TAC Guidelines?
- c) Can Enbridge provide an opinion from an engineer as to why the minimum standards set in the TAC Guidelines should be ignored, and can that engineer certify that ignoring the minimum standards set in the TAC Guidelines will not impact on safety and the use of the roadway in question by all users, taking into account future plans and usage?

- a) Yes. Enbridge Gas has the same obligation when it comes to the design, construction, operation and maintenance of its pipeline infrastructure in those roadways to provide safe and reliable services to its customers.
- b) Yes, but as indicated in the section 101 application, Enbridge Gas disagrees with the County's understanding and application of the TAC guidelines as it pertains to the

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.1 Page 2 of 2 Plus Attachments

Windsor Line Replacement project. Enbridge Gas understands the TAC Guideline is intended for the situation where utilities cross highways. Further, the reference in the TAC Guideline to longitudinal pipeline installations are less than what the County is demanding.

c) Enbridge Gas has provided an engineering opinion to the County. Enbridge Gas has retained Wood E&IS a division of Wood Canada Limited (Wood) a large international engineering firm, to prepare a geotechnical investigation report, and a pipeline vehicle stress analysis report which demonstrates that a depth of cover of 1.0 m is sufficient for the axel loading noted in the report. Please see Exhibit B, Tab 1, Schedule 5, Appendix B for the Wood Report. Even the County's consultant, Dr. Tape, recognized the calculation of stress by Enbridge Gas/Wood was "conservative".

Further at the request of Enbridge Gas, Wood has provided an opinion by a senior highway design engineer which notes that the TAC Guideline is not a widely used document in municipal road design in southern Ontario. Please see Attachment 1, 2 and 3 for the curriculum vitae of the engineers from Wood for more details on their background and experience.

wood.

David Sinke, P.Eng.

Principal / Project Manager

Professional Summary

Mr. Sinke has been employed with Wood since 1990. During his tenure with the firm, he has been involved in the Municipal and Transportation Engineering Groups and the Environmental Assessment Group. Mr. Sinke was made an Associate in 2003 and a Principal in 2011. He has acted as Project Manager, Project Engineer and Contract Administrator on municipal and provincial highway projects.

Qualifications

Education

• B.Eng., Civil Engineering, McMaster University, Hamilton, ON, Canada, 1990

Registrations / Certifications / Licenses

• Workplace Hazardous Materials Information System (WHMIS)

Wood Experience

Design and Contract Preparation

Municipal Roads

- Bradley Avenue Extension City of London
- Appleby Line Improvements -Town of Milton
- 15 Sideroad Shoulder Improvements Town of Milton
- Milton 2019 Asphalt Overlay
- Milton 2019 Crack Sealing Program
- West Street/Charing Cross Intersection Improvements City of Brantford
- St. James Street Reconstruction City of Brantford
- Mountainview Road Town of Caledon
- Speers Road Reconstruction Town of Oakville
- Speers Road, from Third Line to Fourth Line, Oakville
- Speedvale Road, City of Guelph
- Johnson Road Intersection Improvements, City of Brantford
- Goreway Drive Widening Environmental Services, City of Brampton
- Airport Road 1200 mm Storm Sewer by Microtunneling, Region
 of Peel
- Britannia Road Widening from Tremaine Road to Regional Road 25 including CNR Grade Separation, Milton Region of Halton
- Britannia Road Widening from James Snow Pkwy to Highway 407 including Sixteen Mile Creek East Branch Bridge, Milton – Region of Halton

Years of Experience 29 (29 with Wood)

Office of Employment Burlington, ON

Languages • English

Professional Associations

- Association of Professional
 Engineers of Ontario
- Transportation Association of
- Canada (TAC)
- Ontario Public Works
 Association (OPWA)

Areas of Expertise

- Project Management
- Detailed Engineering Design for Municipal and Highway projects
- Conceptual Studies
- Class Environmental
- Assessments
- Contract Administration



Principal / Project Manager



- Dundas Street Widening, from Oak Park to Neyagawa Boulevard Region of Halton
- Upper Middle Road Widening and Reconstruction Region of Halton
- Dundas Street Widening at Brant Street Region of Halton
- Huttonville Creek Culverts at Bovaird Drive, Region of Peel
- Simpson Road Extension Town of Caledon
- Mountain Street, Beamsville Region of Niagara
- Shellard Lane City of Brantford
- Ninth Line Region of Halton
- King Road at CNR Burlington
- Fourth Line Oakville
- Ridgeway Drive Mississauga
- Kennedy Road Town of Caledon
- Waterdown Road Burlington
- North Service Road Town of Oakville
- Creekbank Extension City of Mississauga
- Regional Road 20 Region of Niagara
- Upper Middle Road and Burloak Drive, Region of Halton
- South Service Road, Grimsby Region of Niagara
- Garden Avenue Realignment at CNR City of Brantford
- Newport Street Reconstruction City of Brantford
- Reconstruction of Upper Middle Road, Appleby Line to Orchard Road City of Burlington
- Reconstruction of Guelph Line, Brookville Regional Municipality of Halton
- Red Hill Creek Expressway City of Hamilton
- River Road Reconstruction at CPR Haldimand County
- Reconstruction of James Mountain Road Regional Municipality of Hamilton-Wentworth

Provincial Highways

- Highway 417 Widening, Highway 416 to Maitland Ave
- Salmon River Bridge at Highway 7, Arden
- Makobe River Bridge at Highway 65, Elk Lake
- Improvements to Five Intersections in Central Region
- Highway 21, from Bayfield to Goderich
- Highway 3, from west of County Road 11 to County Road 34, Essex
- Highway 404, from Green Lane to Queensville Sideroad, York Region
- Highway 77, from Highway 3 to Staples, Learnington
- Removal of Concession Road Ramp at QEW Fort Erie
- South Service Road/Bartlett Avenue Interchange Ramps Grimsby
- Highway 6 (New) Hamilton
- Highway 420/Montrose Road Intersection Niagara Falls
- Highway 420 Reconstruction Niagara Falls
- Former Highway 403 Rehabilitation Brantford
- Highway 11 Rehabilitation Hearst
- Q.E.W. Rehabilitation, Guelph Line to Dorval Drive Burlington and Oakville
- Highway 403 Resurfacing, King Road to Mohawk Road Burlington and Hamilton
- Reconstruction of Highway 10 Town of Caledon
- Advance Structures, Highway 403 (407) from Sixteen Mile Creek to Trafalgar Road



Principal / Project Manager



- Reconstruction of Highway 101 Timmins
- Reconstruction of Highway 5 Waterdown

Class Environmental Assessment

Municipal Class Environmental Assessments

- West Street/Charing Cross Intersection, City of Brantford
- Mountainview Road, Town of Caledon
- Lakeshore Road, from Mississaga St. to Dorval Drive, Town of Oakville
- McLaughlin Road, Spine Road and Highway 410 Interchange, Town of Caledon
- Area 47 Arterial Roads, City of Brampton
- Mountainview Drive Improvements, Town of Caledon
- Barton Street/Fifty Road Widening Including CNR Grade Separation, City of Hamilton
- Mississauga Road, from Financial Drive to Bovaird Drive, Brampton (Peel Region)
- King/Vaughan Road Bridge, City of Vaughan
- Steeles Avenue, Brampton (Peel Region)
- Bovaird Drive, Brampton (Region of Peel)
- Conlin Road Widening City of Oshawa
- Regional Road 20, Smithville Region of Niagara
- Mohawk Road Ramp at Highway 403 City of Hamilton
- Shellard Lane, Brantford
- McLaughlin/Chinguacousy, Brampton
- Martindale Road, St. Catharines (Niagara Region)
- Simpson Road, Caledon
- Thorold Road, Welland
- Third Line Class EA, Town of Oakville
- Colborne Street/Dalhouse Street Two-Way Conversion, City of Brantford
- Ninth Line Region of Halton
- Mount Pleasant Arterial Roads City of Brampton
- Kennedy Road Town of Caledon
- Heart Lake Road Town of Caledon
- Townline Road West Lincoln
- Cornwall Road Town of Oakville
- Ridgeway Drive at Highway 403 City of Mississauga
- Stirling Street/CNR Grade Separation Haldimand County
- Lakeshore Road Bridge Replacement Haldimand County
- Grassy Brook Watermain and Wastewater Servicing City of Niagara Falls
- 600 mm Feedermain, Grimsby Region of Niagara
- Vineland/Smithville Water Distribution System Improvements Region of Niagara
- Derry Road Watermain Region of Halton
- Trafalgar Road Watermain Region of Halton
- Grimsby South Service Road Class EA Addendum Region of Niagara
- Industrial Park Road Township of West Lincoln
- Haldimand County 2004 Bridge and Culvert Replacement Program
- Kalar Road Reconstruction City of Niagara Falls
- Regional Road 25 Improvements Region of Halton
- Carlton Street Welland Canal Crossing Improvements Region of Niagara



Principal / Project Manager



- Fourth Line Reconstruction Town of Oakville
- Upper Middle Road/Burloak Drive Improvements City of Burlington
- North Service Road Improvements Town of Oakville
- Twiss Road Improvements Town of Milton
- Derry Road Reconstruction Region of Halton
- Stanley Avenue Reconstruction, Niagara Falls Region of Niagara
- Roberts Street Reconstruction, Niagara Falls Region of Niagara
- River Road Bridge Replacements Haldimand County
- Smithville Trunk Sewer Replacement Township of West Lincoln
- Northwest Quadrant Servicing Town of Dunnville
- James Mountain Road Reconstruction RMHW

Provincial Highways Class Environmental Assessments

- Mohawk Road Westbound Ramp at Highway 403, Hamilton
- Highway 410/Hurontario Street Interchange Modifications, Caledon
- Consolidated Central Region Intersections, York and Simcoe
- Highway 21, from Bayfield to Goderich
- Interchange Improvements at the Former Highway 403 (Garden Avenue)/ Highway 403 Interchange
- Highway 6 (New) Hamilton
- Highway 420/Montrose Road Intersection Niagara Falls
- Ripple Creek and McKellar Creek Culverts, Highway 17
- Pinewood River Bridge and Sturgeon River Bridge Rehabilitation, Highway 11
- CPR Bridge Rehabilitation, Highway 17
- Highway 420 Reconstruction Niagara Falls
- Pancake River Bridge Replacement, Highway 17
- Former Highway 403 Rehabilitation Brantford
- Highway 11 Rehabilitation Hearst
- Q.E.W. Rehabilitation, Guelph Line to Dorval Drive Burlington and Oakville
- Reconstruction of Highway 10, Caledon, Highway 5, Waterdown and Highway 101 Timmins

Contract Administration

- Upper Middle Road, Oakville Region of Halton
- Dundas Street Widening, from Oak Park to Neyagawa Boulevard Region of Halton
- Highway 11 and Highway 141, Huntsville
- Highway 11 and Highway 141, Gravenhurst
- Strasburg Road Extension, Kitchener
- Mountain Street Beamsville (Niagara Region)
- Shellard Lane, City of Brantford
- Regional Road 20, Niagara
- King Road Storm Outlet, City of Burlington
- Removal of Concession Road Ramp at QEW Fort Erie
- Oakville 2008, 2009, and 2010 Hot Mix Paving Program
- Grassy Brook West Sanitary Sewers, City of Niagara Falls
- 450 mm x 10.4 km Feedermain, Grimsby to Smithville, Niagara Region
- Newport Street Reconstruction City of Brantford
- Garden Avenue Reconstruction City of Brantford
- Various Watermain Replacement Town of Grimsby



Principal / Project Manager



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- Various Watermain Replacement Town of Lincoln
- Reconstruction of Highway 5, Waterdown Regional Municipality of Hamilton-Wentworth

Municipal Servicing

- Grassy Brook West Sanitary Servicing, City of Niagara Falls
- 450 mm x 10.4 km Feedermain, Grimsby to Smithville, Niagara Region
- 900 mm Concrete Pressure Pipe watermain replacement, Red Hill Valley, Hamilton
- Various sanitary and watermain relocations, Red Hill Valley Project, Hamilton
- Watermain Replacement Programs, 2002, 1999, 1994, 1993 Town of Grimsby
- University Gardens Sanitary Siphon Replacement Region of Hamilton-Wentworth
- Helen Street Watermain, Dundas Region of Hamilton-Wentworth
- Northwest Quadrant Stormwater, Sanitary and Water Servicing Town of Dunnville
- Wastewater Main in Black Creek Valley and Forcemain on Main Street Halton Region
- Industrial Park Servicing (Roadway, Sanitary, Watermain) Township of West Lincoln
- Replacement of Mountain Road and Elizabeth St. Watermains Town of Lincoln
- Various Watermain Upgrade Programs Township of West Lincoln
- Fields of Fiddlers Green Development, Ancaster

Studies and Reports

- Functional Design Report Appleby Line Improvements Town of Milton
- Roadside Safety Study Haldimand County
- Caledonia Master Servicing Plan Haldimand County
- Smithville Water Distribution System Study Township of West Lincoln
- North Pickering Water and Wastewater Servicing Assessment Ministry of Municipal Affairs
- Kelso Conservation Area Water Distribution System Study Halton Region Conservation Authority
- Township of West Lincoln Sanitary Infrastructure Needs Study Regional Municipality of Niagara
- Preliminary Servicing Study, TCG Lands (City of Burlington)
- Preliminary Servicing Study, Garden Trails Subdivision (City of Burlington)
- Site Servicing and Infrastructure Assessment, Edgar AOC Ontario Realty Corporation
- Roadside Safety Hazard Analysis, Highways 400, 401, 404, 427 and Q.E.W.

Professional History

- Wood, Principal, Senior Transportation Engineer, Burlington, 2009 to present
- Wood, Project Engineer, Burlington, 1990 to 2009



Principal Geotechnical Engineer

Professional Summary

Ty Garde, M. Eng. P. Eng., is Wood's Ontario Geotechnical Discipline Lead and a Principal Geotechnical Engineer with over 35 years of relevant experience in geotechnical aspects of large and medium sized civil engineering projects. He has been responsible for the organization and supervision of numerous field investigations and construction monitoring programs on a large variety of projects including commercial, industrial and residential developments, municipal servicing, pipelines, roadways, bridges and airports. His project experience includes the design and construction of numerous municipal, regional and provincial roadways in Manitoba and Ontario, such as the planned widening of various sections of Highway 401 and Highway 400. Since 2010 he has been a Designated Foundations Contact for high complexity projects with Ministry of Transportation, Ontario (MTO) and responsible for senior technical and quality review of geotechnical reports.

Ty has provided senior geotechnical services for several pipeline upgrading and replacement projects in the GTA and surrounding areas, and in Manitoba and BC. He has worked as a consultant to Enbridge/Union Gas, TransCanada Energy (TCE), Imperial Oil Limited (IOL) and Trans Mountain Pipelines during his career.

Qualifications

Education

- B.Sc, Hons, Geological Engineering, Queen's University, 1979
- M.Eng., Civil Engineering, University of Alberta, 1983

Wood Experience

Regional Express Rail, Highway 401 Tunnel on the Kitchener Corridor, between Islington Avenue and Kipling Avenue, Toronto, Ontario, 2017-2022. Wood is providing geotechnical and instrumentation monitoring services to Toronto Transit Partnership (TTP) during the bid pursuit, design and construction phases of the Highway 401 tunnel project. The project involves the design and construction of twin rail tunnels below Highway 401 and Highway 409, west of Islington Avenue to increase the rail capacity on the Kitchener Corridor. Wood's project responsibilities included summarizing the existing subsurface information, completing a supplementary subsurface investigation, analyzing the available geotechnical information and preparing the foundation investigation and design report for the project. Wood is also responsible for developing the geotechnical instrumentation and monitoring plan

Years of Experience

Total Years of Experience: 38 Total Years with Wood: 5

Office of Employment Cambridge, ON

Languages • English

Professional Associations

Registered Professional
 Engineer, PEO, APEGBC







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(GIMP), supervising and documenting the installation of the instrumentation, and preparing monitoring reports on a regular basis. The GIMP for the project includes 8 Vibrating Wire Piezometers, 11 Shape Accel Arrays, 7 In-Place Inclinometers, 383 survey prisms, 447 Reflectorless Monitoring Points, 37 tilt meters, 4 Vibration Monitoring Instruments, 2 Noise Monitors, and 9 Distometers all remotely monitored through and Automated Data Acquisition and Management System (ADAMS). The duration of the monitoring period including baseline, construction and post construction phases will be about 3.5 years.

New Toronto Courthouse, Toronto ON (2018-2020) The project site is bounded on the west side by Centre Avenue, on the south side by Armoury Street, on the east site by Chestnut Street and on the north side by existing multi-storey buildings. The site was most recently used for surface parking. Historically the site has previously been occupied by residential, industrial and church buildings. The proposed courthouse will be a 17 storey structure with two levels of underground parking. The building will be supported by spread footing and caisson foundations, and the slab on grade will require an underslab drainage system to permanently control groundwater seepage. Wood prepared the geotechnical investigation and design report for the project and consulted with the structural, mechanical and architectural consultants as the foundation design progressed. Wood was also responsible for preparing the annual Certificate of Property Use (CPU) reports in 2019 and 2020, which documented all soils imported and exported to and from the project site, and their compliance with the requirements of the project CPU.

The Bentway (Formerly Project Under Gardiner), Toronto ON (2015-2017) The Bentway (formerly Project: Under Gardiner) is a Waterfront Toronto project to redevelop more than four hectares of land beneath the elevated portion of Toronto's Gardiner Expressway including on the lands of the Fort York National Historic Site, from just west of Strachan Avenue to Spadina Avenue, into a series of public spaces. The project includes a new Fort York pedestrian bridge, The redevelopment will also include multi-use trails, a winter ice skating rink, and active/performance grounds under the Gardiner Expressway and vicinity. The multi-use trails are about 4 m to 5 m wide and approximately 1,000 m long. In some sections east of Strachan Avenue, the multi-use trails are combined with the refrigerated concrete slab for the winter skating rink. The trails are surfaced with appropriate materials, including concrete, resin and aggregate, limestone screenings and grass. Wood prepared the geotechnical investigation report for the project and consulted with the design team consultants on various aspects of the project as the design progressed.

Bridge Reconstruction on the QEW at Seventh Street, EllisDon, St. Catharines, Ontario, Canada. Project Value: \$75 K (Geotechnical component), **2015 - 2016**. The design build project includes demolishing and replacing the existing Seventh Street Bridge over the QEW in St. Catharines, Ontario. The geotechnical services for the project include the preparation of the Final Foundation Investigation and Design Report, supporting the design and construction of the bridge foundations, and construction monitoring including pile installation and settlement monitoring. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review.

Geotechnical Investigation and Design Report, Windsor to Port Alma Pipeline Replacement, Essex and Kent Counties, Ontario (2019-2020) On behalf of Enbridge Gas Inc, Wood carried out a geotechnical investigation for the proposed construction of the Windsor Line Replacement in Windsor-Essex and Chatham-Kent Counties, Ontario. The project consists of the construction of approximately 60 km of pipeline between the Town of Tecumseh in Essex County and the Town of Port Alma in Chatham-Kent County. The existing NPS 10 pipeline will be replaced with a new NPS 6 pipeline under





Principal Geotechnical Engineer

higher pressure than the existing pipeline. The pipeline will be predominantly installed using open cut techniques, with trenchless crossings at the locations of major drains, rivers and at the crossing of MTO Kings Highway 77. Geotechnical services included the subsurface investigation of soils along the alignment and geotechnical reporting to support the design of the trenched and trenchless sections of the new pipeline. A separate Foundation Investigation and Design Report and a settlement instrumentation and monitoring plan were prepared for the Highway 77 undercrossing. Wood also prepared a pipeline vehicle loading analysis stress report that assessed the potential stresses on the pipe in the event that CR 46 is widened at some time in the future. This analysis concluded that the pipe design met the CSA Z662 criteria for super loads provided the axle load does not exceed the highway legal axle load limit in effect at the time of the analysis.

Preliminary Study and Design Report, Enbridge Line 12 Pipeline Crossing Sixteen Mile Creek, Enbridge, Oakville, Ontario (2015-2016) Stage Gate 1 engineering services report as part of the study, assessment and remediation of Line 12 (Geo-Hazard Project) crossing Sixteen Mile Creek, south east of Upper Middle Road West in the Town of Oakville, Ontario. The Line 12 pipeline which runs north eastsouth west and parallel to the Upper Middle Road West in the project area once fed a refinery in Oakville which was decommissioned and the area remediated in the mid-1990's. It is understood that the pipeline was deactivated at that time, emptied of product and filled with nitrogen. Over time, sections of the pipeline have been removed. At the Sixteen Mile Creek crossing, which is located just north east of the Glen Abbey Golf Club, the portion of the pipeline installed along the face of the slope east of the creek was constructed in a relatively shallow trench excavated into the natural slope and was initially covered/protected by a series of stacked cemented bags (cushions) placed parallel to the face of the slope. The cemented bags were in turn supported by a concrete buttress structure constructed at the toe of the slope, adjacent to Sixteen Mile Creek. Initial signs of instabilities/failure were noticed by Enbridge during an aerial patrol in July 2013. The concrete buttress structure failed, likely due to being undercut by the creek, with some parts of the concrete buttress breaking off and several cement bags had fallen down the slope. The study included assessment of fluvial geomorphology, river hydraulics, geological and subsurface conditions, and slope stability. Several remedial options were presented in the report for consideration for advanced design.

Air and Water Line Upgrade, Glen Eden Ski Area, Halton Region, ON (2017)

Geotechnical investigation for new 150 mm diameter air and water lines to upgrade snow making facilities at Glen Eden ski hill in Kelso Conservation Area, Halton, ON. New pipe lines will cross under CPR tracks. Geotechnical services included subsurface investigation of soils, and preparation of settlement instrumentation and monitoring plan for CPR approval for track undercrossing using HDD method. The undercrossing was successfully completed.

Highway 409 Undercrossing, Imperial Oil Limited, Toronto, Ontario, Canada. Project Value: \$135 K (approximate), **2015 - 2016.** Replacement of section of 12" pipeline that transports refined petroleum products from refineries in Sarnia and Nanticoke to the Toronto area, required an undercrossing of Highway 409. Open cut excavation was not a viable option for the pipe replacement, as it would result in traffic disruption along the Highway. Therefore a trenchless installation method was required for this project. Horizontal directional drilling was selected as the preferred trenchless installation method. Wood's scope of work included geotechnical investigation, liaison with Ministry of Transportation Ontario (MTO) settlement monitoring during and following the HDD installation to measure potential settlement of the highway surface and provision of daily reports to the client and to MTO. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review.





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Natural Gas Pipeline Upgrade, Union Gas, Essex County, ON (2018-ongoing) Geotechnical investigation for the construction of approximately 19 kilometers of new NPS20 pipeline between the towns of Kingsville and Woodslee, Ontario. The alignment is in a generally north-south direction and is situated on primarily agricultural lands. The proposed pipeline installation in general involves open cut excavation and backfill along the majority of the pipeline route; and a trenchless pipe installation undercrossing of Ministry of Transportation Ontario (MTO) Highway 3. Geotechnical services included subsurface investigation of soils, including valve site and station upgrades, and preparation of settlement instrumentation and monitoring plan for MTO approval for the Highway 3 undercrossing.

Natural Gas Pipeline Upgrade, Union Gas, Owen Sound ON (2018-2019) Geotechnical investigation for the replacement of approximately 36 kilometres of pipeline between the towns of Chatsworth and Durham, Ontario. The existing NPS10 pipeline alignment is located between and approximately parallel to King's Highway No. 6 and Concession 2 (Municipality of Grey West)/Concession 4 (Township of Chatsworth), generally traversing agricultural and forested lands. The proposed replacement alignment is generally along Concession 2 and Concession 4 to the west of the existing alignment within the road right-of-way's (ROWs). Project included the geotechnical investigation for the new alignment and preparation of the geotechnical design reports.

Natural Gas Pipeline Upgrade, Union Gas, Chatham-Kent ON (2016-2017) Geotechnical investigation for new 48 inch gas line in Chatham-Kent, Ontario. New pipe line alignment included crossing of Highway 40 and several watercourses. Geotechnical services included subsurface investigation of soils, and preparation of settlement instrumentation and monitoring plan for MTO approval for Highway 40 undercrossing using Jack and Bore method. The under crossing of Highway 40 was successfully completed.

Natural Gas Pipeline Upgrade, Union Gas, Sudbury, ON (2017) Geotechnical investigation for new 48 inch gas line in Sudbury, Ontario. New pipe line alignment included crossing of municipal roads and CPR tracks. Geotechnical services included subsurface investigation of soils, and preparation of settlement instrumentation and monitoring plan for CPR approval for track undercrossings using HDD method. The track undercrossings were successfully completed.

Watermain Installation, Town of Tecumseh, Highway 3 near Walker Road, Tecumseh, ON (2019)-Geotechnical investigation for the construction of approximately 1 kilometer of new watermain parallel to and crossing MTO Highway 3. The watermain will be installed using trenchless methods, included the section crossing under Highway 3. Geotechnical services included subsurface investigation of soils, and preparation of settlement instrumentation and monitoring plan for MTO approval for the Highway 3 undercrossing.

Sewage Forcemain Crossing of Highway 3, Leamington, ON (2018-2019)- Geotechnical investigation for the sewage forcemain crossing of MTO Highway 3 in Leamington, Ontario. Geotechnical services included subsurface investigation of soils, and preparation of settlement instrumentation and monitoring plan for MTO approval for the Highway 3 undercrossing. The sewage forcemain was successfully installed in April 2019. using trenchless methods.

Groves Memorial Community Hospital, Township of Centre Wellington, Ontario, Canada. Project Value: \$195 K (approximate), **2015 - 2016**. This project is located in Aboyne, between the towns of Fergus and Elora, in the Township of Centre Wellington, Wellington County, Ontario. The former agricultural lands developed for the hospital are approximately 13.7 ha in area. The project involved the design and construction of a new hospital, with related parking and site amenities. The main hospital structure is a





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13,100 m² two to three storey structure with a partial basement. The development also includes provision for a 1,860 m2 future auxiliary building, located east of the main hospital and several parking areas to the south, north, and east of the two proposed structures. To the west of the main hospital is a helipad. The geotechnical investigation consisted of drilling and sampling a total of seventy seven boreholes. The boreholes were located within the proposed building footprints, helipad footprint, and parking areas and site service locations. Laboratory testing was carried out on selected samples of the recovered soils. Geotechnical analysis and reporting was completed to assist with the design of the structures, parking lots and site servicing. Geotechnical recommendations were provided for shallow and deep foundations, slabson-grade, lateral earth pressures on subsurface walls, seismic considerations, temporary and permanent groundwater control, retaining walls, underground services and pavements.

Bridge Replacement Highway 7 over Salmon River, Kaladar, Ontario (2017 to present). The design build project includes demolishing and replacing the existing two lane bridge on Highway 7 over the Salmon River, located approximately 18 km east of Kaladar, Ontario. The geotechnical services for the project include the preparation of the Final Foundation Investigation and Design Report, and supporting the design and construction of the bridge foundations. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review.

Bridge Replacement Highway 65 over Makobe River, Elk Lake, Ontario (2018 to present). The design build project includes demolishing and replacing the existing two lane bridge on Highway 65 over the Makobe River, in Elk Lake, Ontario. The geotechnical services for the project include the preparation of the Final Foundation Investigation and Design Report, and supporting the design and construction of the bridge foundations including review of the pile driving results for the steel H-piles drive for the abutments and piers. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review.

Centennial Parkway Bridge Twinning and CN Grade Separation, City of Hamilton, Hamilton, Ontario, Canada. Project Value: \$60 K (approximate), 2013. Project Director responsible for completing the geotechnical analysis and providing senior geotechnical review for the CN grade separation project in Hamilton, Ontario. Project scope included borehole investigation, analysis and design, design recommendation and report preparation for twinning of CN Bridge 163 crossing Centennial Parkway. As Project Director and Geotechnical Engineer, Ty was responsible for senior geotechnical review of geotechnical deliverables including factual data, analysis and design recommendations.

Railway Bridge, Road Reconstruction and Widening, Weber Street, Region of Waterloo, Waterloo, Ontario, Canada. Project Value: \$65 K (approximate), 2015. Foundation Lead responsible for completing the geotechnical investigation and foundation design study for the reconstruction and widening of Weber Street in the Region of Waterloo. Geotechnical investigation and design services were provided for the reconstruction of bridges, culverts and underground services within the limits of the study area. The project included the design and construction of a new bridge to carry the CPR tracks over Weber Street. As Senior Geotechnical Engineering, Ty was responsible for geotechnical investigation and foundation design study for the bridge foundations, and approach embankments including slope stability and settlement assessments.





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New Bridges over the St. Lawrence River, Montreal, Quebec, Canada. Project Value: \$125 K (approximate), **2015**. The Champlain Bridge is a federal asset built in 1962 and is one of the busiest bridges in Canada. The design build project includes the replacement of the Champlain Bridge with a new bridge over the St. Lawrence River, a new bridge from Montreal Island to Ile des Souers, reconstruction and widening of Highway A15 and associated ramps. The Project covers approximately 8 km of new highway construction, including the two new bridges. Senior Geotechnical Engineer engaged during the pursuit stage of the project, responsible for completing the geotechnical analysis and preparing the geotechnical reports.

VivaNext Rapid Transit Project, AECOM, Region of York, Toronto, Ontario, Canada. Project Value: \$2 B (approximate), 2013-2014. The Metrolinx/YRTTC contract is a public-private partnership to design, build, and finance 10 new Viva bus stations and approximately 12 km of bus transit rapidway along two sections of Highway 7. The first segment will extend from Helen Street to Interchange Way/Edgeley Boulevard (H2-West), and the second section will run from the Centre Street and Highway 7 intersection to Yonge Street via the existing Centre Street and Bathurst Street Viva route (H2-East). Construction began in 2016 and the bus rapidway will be open for service in 2020. Wood was initially retained by YRRTC to conduct geotechnical investigations and preliminary environmental soil and ground water testing along the corridor. Since 2015, Wood has been providing both environmental and structural engineering services to support both Design and Construction to EllisDon Capital Inc. and Coco International Inc. (EDCO), a joint venture of EllisDon Civil Ltd. and Coco Paving Inc. Geotechnical investigation and design services were provided for the construction of station platforms, municipal services and roadways. The geotechnical investigation was conducted to assess the geotechnical conditions for structural foundations of bridges, culverts, retaining walls, bus station platforms, etc., along the proposed bus transit rapidway. The work consisted of the advancement of approximately 193 boreholes and 47 monitoring wells. Boreholes depths ranged from 5 mbgs to 40 mbgs. Hydrogeological testing was also completed to enable the assessment of the dewatering recovery requirements. In addition as part of the geotechnical work, preliminary environmental soil testing was conducted to assess soil disposal options during construction. As Senior Geotechnical Engineer, Ty was responsible for senior geotechnical review of geotechnical deliverables including factual data, analysis and design recommendations.

Feasibility Study for Double Berthing Platform at Union Station, AECOM, Toronto, Ontario, Canada. Project Value: \$150 K (Geotechnical component), 2011 - 2015. Due to the significant increase in the number of passengers using GO commuter train services through Union Station, the Union Station Rail Corridor (USRC) Infrastructure Program retained Wood to complete a feasibility study for the proposed extension of platforms to the east and west of the existing train shed to permit double berthing of trains to meet future capacity requirements. This comprehensive report analyzed impacts to the USRC, including geotechnical and environmental impacts. Based on the study completed by Wood, it was determined that double berthing could be achieved with the preferred option consisting of the introduction of two additional tunnels per expansion (i.e., four tunnels in total) east and west of the existing Train Shed. Each tunnel was proposed to be 8 m wide, in contrast to the option of a wider 16 m wide tunnel or an overhead pedestrian bridge option, which was also considered. The study considered both safety and operational, economical, and socio-economic influences, as well as constructability, interests of third parties, environmental, schedule, and potential conflicts. As Senior Geotechnical Engineer, Ty was responsible for completing the geotechnical analysis for the design of deep foundations and providing senior geotechnical review during planning and execution of the geotechnical investigation.





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Geotechnical Services, Port Granby Waste Management Facility, Canadian Nuclear Laboratories, Port Granby, Ontario (2015-present). The existing Port Granby Waste Management Facility (PGWMP) site contains waste from the former Eldorado Operation in Port Hope, Municipality of Clarington. The site is located on Lakeshore Road, Municipality of Clarington and is bounded by Lake Ontario to the south. The PGWMF site is perched some 35 m above Lake Ontario and consists of a sloped region with a total footprint of approximately 20 ha adjacent to the natural bluffs along the lake shore. The site is heavily impacted by historical slope failures, historical and active natural erosion scarps and gullies, and active local creep of some of the slopes. The PGWMF site contains an estimated 450,000 m³ of low level radioactive waste (LLRW) and marginally contaminates soils (MCS). The removal of the LLRW material requires phased excavations, mostly using open-cuts up to 10 m below ground, requiring excavations to as much as 4 m below the site background groundwater table. At some locations, such as the east and west gorges, space limitations prohibits the excavation of unsupported slopes and temporary shoring is required to support the excavations at these locations. Geotechnical services included the preparation of slope stability monitoring and response plans, dewatering plans, horizontal directional drilling plans, and temporary shoring plans. The geotechnical monitoring program consists of automated web based remote monitoring of vertical inclinometers and vibrating wire piezometers, supplemented by manual surveys of in-ground settlement rods. As Lead Geotechnical Engineer, Ty has been responsible for preparation and/or senior review of the plans, senior review of the regular monitoring reports and geotechnical consultation and advice during the construction phase of the project.

Multidisciplinary Subsurface Investigation, Phase 1 and Phase 2, for the Detailed Design of the Near Surface Disposal Facility Project at Chalk River Laboratories, Canadian Nuclear Laboratories, Chalk River, Ontario, 2016-2017. Multidisciplinary subsurface investigations for Phases 1 and 2 were carried out for the Detailed Design of the Near Surface Disposal Facility ("NSDF") project (the "Project") at the Chalk River Laboratories ("CRL") site located in Chalk River, Ontario. The field and laboratory studies were carried out according to the Canadian Nuclear Laboratories ("CNL") Statement of Work ("SOW") for Phase 2 and included geotechnical, hydrogeology, hydrochemistry, rock mechanics and seismic studies to support the detail design of the NSDF by the Design Consultant. The field test locations were specified by the Design Consultant and CNL, and based on the projected footprints of the primary components of the development and the supporting structures. The field investigation included sampling and testing of soils and rock, seismic cone penetration testing and in-situ hydraulic conductivity testing. As Senior Geotechnical Engineer, Ty was responsible for project oversight during the planning and execution phases of the field work senior technical review of the project deliverables.

Queen Street Trunk Sewer, City of Stratford, Stratford, Ontario, Canada. Project Value: \$45 K (approximate), **2015 - 2018**. The City of Stratford has initiated a process to design a new 2 m diameter storm water trunk sewer to reduce the storm water flow in the central area of the City through the design and construction of a new 700 m long trunk sewer along Queen Street. It is anticipated that the new trunk sewer will be constructed using a combination of open cut excavations and trenchless methods. Senior Geotechnical Engineer responsible for geotechnical analysis and providing senior geotechnical review. A key responsibility of the design team is to minimize disturbance to the local residential and commercial operations, including the Stratford Theatre, during the construction operations.



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Other Experience

- Natural Gas Pipeline Upgrades, Union Gas, Cambridge, ON (2014) Geotechnical investigation for new 48 inch gas line from Cheese Factory Road to Valens Road in Cambridge/Hamilton ON. New pipe line alignment included crossing of Highway 8. Geotechnical services included subsurface investigation of soils and rock and recommendations for blasting of rock.
- Bayside Development, Waterfront Toronto, Toronto, ON. (2013-2014). The Bayside development is a 13 acre site along Lake Ontario between Lower Sherbourne Street and Parliament Street on Toronto's waterfront. The site is being redeveloped into a mix use commercial, office, cultural and residential space. Geotechnical investigations were competed for the proposed roadways, site servicing including deep OGS installations, building foundations, planters, light standards and storm water detention.
- Canada Square, Ontario Square, Waterfront Toronto, Toronto, ON. (2012-2013). The Canada Square and Ontario Square redevelopment at Habourfront on Queen's Quay in Toronto included the design and construction of a three level underground parking structure and cultural space at the ground level, including pavements and site servicing. Geotechnical services were provided during the design and construction phases of the project.
- Diavik Diamond Mine, Aboriginal Engineering Ltd., Lac Des Gras, NWT (2000-2002). Quality control testing during construction of first enclosure dyke and mine infrastructure including processing plant and permanent residence. Services included materials testing of aggregate and concrete and permeability testing of jet grout materials.
- Lester B. Pearson International Airport, various clients, Mississauga, ON. (1995-2014). Quality control inspection and testing during construction of north-south Runway 15R-33L, Taxiway Echo and confined disposal facility. Resident engineering services during Delta Taxiway connection. Duties included in situ testing of granular materials and concrete, laboratory testing of granular materials and concrete, laboratory testing of granular materials and concrete, hydraulic conductivity testing of clay liner samples, installation of monitoring wells, sampling of soils and water for chemical analyses and project reporting. Geotechnical investigation for four-lane vehicle access tunnel below Runway 15L-33R and Taxiway Echo. Total tunnel length approximately 1 km. Quality control monitoring and testing of concrete, granular materials and site borrow fills during construction including in situ density testing of compacted soils and sampling and testing of cast-in-place concrete. Geotechnical investigation of retaining wall structures within vehicle tunnel to repair damage to concrete and improve drainage behind structure. Geotechnical investigation for fuel operations building, including tanker maintenance building and below-grade parking structure. Quality control monitoring and testing of concrete, granular materials, and site borrow fills during construction. Geotechnical investigation for central workshops and storage facilities. Geotechnical investigations for pass control building, Peel Region police building and south fire hall. Geotechnical investigation for Shell Execujet Centre. Geotechnical investigations for Nav Canada infrastructure upgrades.
- Richardson International Airport, MMM, Winnipeg, MB, (2005-2006), Geotechnical investigations for ground side and airside redevelopment, including road and parking lot pavements, embankments, utility corridors, site grading, bridge foundations and airside aprons.
- Forcemain and Watermain Crossings of Highway 401, EllisDon, Various locations in Ontario, Canada. Project Value: \$120 K (approximate), 2011 - 2012. Project involved completing the foundation investigation and design studies for forcemain and watermain crossings below Highway 401 at various On Route service centre locations on Highway 400 and Highway 401, in Ontario. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review. Foundation investigation and design services were provided for trenchless construction methods including jack and bore, pipe jacking and horizontal directional drilling.



Ty Garde, M.Eng., P.Eng Principal Geotechnical Engineer



- CentrePort Canada Way Grade Separations, SNC Lavalin Constructors Pacific Inc., Winnipeg, Manitoba, Canada. Contract Value: \$120.0 M (approximate), 2009 - 2014. Senior Geotechnical Reviewer responsible for providing geotechnical oversight/review and project management support, and completing and preparing the geotechnical analysis and reports, respectively. Engaged during the bid pursuit, detailed design and construction phases of design build project for the construction of grade separations and roadways for the grade separations and initial phase of highway construction for the CentrePort Canada Way in Winnipeg, Manitoba. Professional services included geotechnical input into the design and construction of bridge foundations, earth embankments, MSE retaining walls, consolidation settlements and settlement monitoring, slope stability, culverts and highway pavements and roadway rehabilitation.
- Noise Barrier Wall Replacement, Highway 401 from Park Road to Ritson Road, Ministry of Transportation Ontario, Oshawa, Ontario, Canada. Project Value: \$ 65 K (approximate), 2012 - 2013. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review. The project included completing the foundation investigation and design study for the replacement of the noise barrier wall along the north and south sides of Highway 401 from Park Road to Ritson Road, in Oshawa, Ontario. Foundation investigation and design services were provided for the proposed noise barrier wall replacement.
- Bridge Replacement, Ford Drive at QEW, Hatch Mott MacDonald Oakville, Ontario, Canada. Project Value: \$50 K (approximate), 2014. Member of Design Build team for replacement of bridge structure over Ford Drive on the QEW in Oakville, ON. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review. Responsible for preparation of Foundation Investigation and Design Report for bridge foundations and culverts
- Highway 407 East Extension, 407 East Development Group SNC-Lavalin and Cintra Infrastructures, Whitby, Ontario, Canada. Contract Value: \$1.0 B (approximate), 2014. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review. The Phase I Extension of Highway 407 East included construction of approximately 22 km of new highway and structures from Brock Road in Pickering to Harmony Road in Oshawa. As the Principal Geotechnical Engineer on the project, responsible for reviewing the foundation design and investigation reports by others. Completed final review and approval of foundation reviews and PDA test reports during construction.
- Highway 17 Widening West of North Bay, Ontario, MMM Group, North Bay, Ontario, Canada. Project Value: \$250 K (approximate), 2014. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review. The project scope included the widening of Highway 17 near North Bay, Ontario included construction of new highway embankments through swamp areas. During construction, there was concern that failure of the existing highway shoulder could occur during excavation of peat below new highway embankment adjacent to existing highway. Duties included consultation and recommendations for safe excavation and backfilling of peat areas below future embankment.
- Foundation Monitoring Program Hwy 69, Four Laning, AECOM, Burwash, Ontario, Canada. Project Value: \$280 K (approximate), 2010 2012. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review. The project involved the monitoring of embankment settlement and pore water pressures for four swamp crossings on Highway 69 from 4.3 km south of Highway 637 to 12.5 km north. Monthly monitoring and reporting of settlement measurements and pore water pressures for embankments constructed within four swamps. Two construction stages required for construction of the NBL and SBL embankments with the first stage consisting of placement of embankment fill to approximately 3 m above original ground surface. Following a wait period to allow for dissipation of pore water pressures, a second stage was completed consisting of surcharge placement.
- Highway 400 Widening near South Canal Road, URS, Newmarket, Ontario, Canada. Project Value: \$465 K (approximate), 2010 2014. Served as the designated Foundation Lead, responsible for the completing the



Ty Garde, M.Eng., P.Eng Principal Geotechnical Engineer



geotechnical analysis and providing senior geotechnical review. The project scope included the widening of Highway 400 north of South Canal Road, design and construction of new highway embankments and retaining walls. Embankment widening to be in areas with thick deposits of peat and soft clay soils. Options considered for soil improvement included removal and replacement of peat and in situ ground improvement. Preparation of detail foundation design investigations and reports for bridges, culverts and retaining walls within project area as well as high fills and deep cuts.

Highway 401 Widening from Credit River to Highway 401/403 Interchange, AECOM, Mississauga, Ontario, Canada. Project Value: \$325 K (approximate), 2011 – 2014. Widening of Highway 401 in Mississauga, Ontario. As the Foundation Lead responsible for preparing detail foundation design investigations and reports for bridges and culverts within project area as well as high fills and deep cuts. High artesian groundwater pressures were encountered within the project area. Completed the geotechnical analysis and provided senior geotechnical review.

Highway 401 Widening from Trafalgar Road to the Credit River, URS, Halton Region/Region of Peel, Ontario, Canada. Project Value: \$275 K (approximate), 2010 - 2013. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review. The project involved preparation of the preliminary foundation investigation and design reports for widening of Highway 401 from Trafalgar Road in the Region of Halton to the Credit River in Mississauga. Foundation investigation and design services were provided for the proposed widening or replacement of six bridges and culverts.

Highway 401 widening from RR 25 to Trafalgar Road, URS, Halton Region, Ontario, Canada. Project Value: \$265 K (approximate), 2010 - 2013. Served as the designated Foundation Lead, responsible for the completing the geotechnical analysis and providing senior geotechnical review. The project involved preparation of preliminary foundation investigation and design reports for widening of Highway 401 from RR 25 to Trafalgar Road in the Region of Halton. Foundation investigation and design services were provided for the proposed widening or replacement of ten bridges and culverts.

Professional History

- Wood, Senior Geotechnical Engineer, Cambridge, ON, 2015 to present
- Golder Associates Ltd., Senior Geotechnical Engineer, Cambridge / Winnipeg / Kamloops / Mississauga, 1992 to 2014
- Peto McCallum Limited, Senior Geotechnical Engineer, Toronto/Hamilton, 1990 to 1992
- Sarafinchin Associates Ltd., Geotechnical Engineer, Toronto, ON, 1987 to 1990
- Golder Associates Ltd, Geotechnical Engineer, Mississauga, ON, 1985 to 1986
- Gecon, Geotechnical Engineer in Training, Calgary, AB, 1983
- EBA Engineering Consultants Ltd., Engineer in Training, Calgary, AB, 1981





Anthony Pusic, P.Eng.

Geotechnical Engineer

Professional Summary

Mr. Pusic is a Geotechnical Engineer with over 7 years of experience in geotechnical and environmental consulting. He has been involved with conducting field work in both disciplines, including overseeing drilling operations and the installation of monitoring wells and piezometers, as well as conducting groundwater sampling for monitoring wells. Mr. Pusic has been involved in projects ranging from foundation and pavement design on typical and difficult soils, Phase One and Phase Two Environmental Site Assessments, remedial activities, construction monitoring, post construction monitoring, and construction and materials inspection. Mr. Pusic has also written reports pertaining to shallow and deep foundation design, pavement design, Phase One and Phase Two ESAs and remediation activities. Mr. Pusic was selected as one of the Top 3 Under 30 Engineers in the Windsor-Essex Area in 2019. The award is intended to recognize the succession of persons registered with Professional Engineers Ontario.

Qualifications

Education

• Bachelor of Applied Science, Honours Civil Engineering, University of Windsor, Windsor, ON, Canada 2012

Registrations / Certifications / Licenses

• Professional Engineers Ontario – Licence number 100191840

Wood Experience

Geotechnical Consultant, Field Technician and Data Analysis New Gold - Rainy River Project, New Gold Inc., Rainy River, Ontario, 2017-2018

Analyzed data from vibrating wire piezometers, slope inclinometers and other geotechnical instruments during the construction of earth dams for tailings ponds at the New Gold Rainy River Mine. Provided reasoning for stopping or continuing construction of the earth dams based on the results of my analysis. Supervised field activities, including placement of clay fill, sand and gravel fill, excavations and rock fill. Created field reports daily and communicated with contractors on scheduling, technical issues and approving of past construction activities. Years of Experience 7 Years of Experience 3 Years with Wood

Office of Employment Tecumseh, Ontario

Languages • English

Professional Associations Professional Engineers Ontario

Areas of Expertise

- Experience in geotechnical field work and project management
- Experience in Phase One and Phase Two Environmental Site Assessments
- Some experience with materials testing, including compaction, concrete and excavation inspections



Anthony Pusic, P.Eng.

Geotechnical Engineer



Geotechnical Engineer

Pipeline Replacement Project, Grey County, West Grey and Owen Sound, Ontario

Assisted with the execution of the field work and the reporting for a new pipeline installed in the counties of Owen Sound, West Grey and Grey. The pipeline included several stream crossings, highway crossings and road crossings. Monitored drilling operations, the installation of piezometers and selected lab testing. Assisted with the reporting for the project including recommendations for open cut installation as well as trenchless crossings.

Geotechnical Engineer

Former Lear Facility Redevelopment, Windsor, Ontario

Conducted a geotechnical investigation for the redevelopment of a brownfield site in Windsor, Ontario. The site was a former industrial facility and was being development into a new subdivision including over 100 single family homes, new sewers and watermains, a new storm water pond and pumping station and several apartment buildings. A geotechnical design was provided for all of the components and included recommendations for reuse of the existing concrete slab of the industrial facility as backfill and reuse of the material excavated from the storm water pond.

Geotechnical Engineer

Various Culvert and Bridge Replacements, Essex County, Ontario

Providing bearing capacities, pavement rehabilitations and cursory surveys of the existing channels, wing walls and culvert at various bridges and culverts throughout Essex County and Chatham-Kent County. The culverts and bridges have been in many different soil types and configurations.

Geotechnical Engineer

Various Geotechnical Investigations, Essex County, Ontario

Providing bearing capacities and pavement recommendations for various sites including: Lacroix and Wellington Sewer Separation, Chatham; University of Windsor Science Research and Innovation Facility, Windsor; New Lakeshore Elementary School, Lakeshore; Tecumseh Road Watermain Replacement, Windsor; Watermain Replacement, Tecumseh; Coronation Street Sewer Replacement, Leamington; Lakeshore New Salt Shed, Lakeshore; Mill Street Library Redevelopment, Windsor, as well as many culvert replacements in Essex County and Chatham-Kent.

Geotechnical Consultant

Laboratory Testing Services, 2015-2017, Essex County, Ontario

Involved in various geotechnical laboratory tests associated with above mentioned projects which including soil properties index tests, direct shear test, compaction tests and concrete testing.

Other Experience

Golder Associates

Geotechnical Consultant, Field Technician

Windsor Armouries Redevelopment, Stuart Olson, Windsor, Ontario (2015-2017)

The former Armouries building in downtown Windsor was being redeveloped for the university of Windsor. A basement was installed, while keeping the façade on three sides of the building. The entire interior of the building was removed and rebuilt. Conducted field inspections, including concrete testing, compaction testing, rebar inspections, subgrade and excavation inspections, and underpinning excavations. Completed



Anthony Pusic, P.Eng.

Geotechnical Engineer



slope inclinometer monitoring during construction to determine if the underpinning activities were affecting the Detroit-Windsor Tunnel, and reported any findings to the client and the architect.

Geotechnical Consultant

Rt. Hon. Herb Gray Parkway (Windsor Essex Parkway), Infrastructure Ontario, Windsor, Ontario, (2015-2017)

Monitored several retaining walls on the Parkway to determine the quality of the construction. Took photos at set intervals to determine any changes, and the causes of any damage noted. Compared detailed surveys (± 2 mm) at different times and made conclusions of any movement measured.

Environmental Consultant

445 Riverside Drive Redevelopment, City of Windsor, Windsor, Ontario (2015)

Redevelopment of a brownfield site into residential/community use in downtown Windsor. Completed a Record of Site Condition Phase One ESA for the Site. Authored a Phase Two ESA following the completion of an extensive field work program.

Construction Supervision and Field Inspection

Construction Supervision and Field Inspection Projects, Essex County, Ontario (2015-2017)

Conduct concrete testing, subgrade inspections, footing inspections, soil classification and compaction testing for various projects in Essex County, including School of Creative Arts, Windsor; St Bernard Catholic School, Windsor; New Learnington Amphitheatre, Learnington.

Professional History

- Wood Environment and Infrastructure, Geotechnical Engineer, Windsor, May 2017 to present
- Golder Associates Ltd., Geo-Environmental and Geotechnical Consultant, Windsor, 2013 to 2017



Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.2 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit A, Tab 2, Schedule 1, Page 2, paragraph 3

Preamble:

Enbridge states that the Decision of the OEB granted Leave to Construct for the Project subject to the "Conditions of Approval"?

Question:

- a) What Conditions of Approval has Enbridge met and when?
- b) What Conditions of Approval remain outstanding?
- c) Has Enbridge commenced construction of the Project despite not meeting all of the Conditions of Approval?

Response:

a) and b)

Enbridge Gas is constructing the Windsor Line project in accordance with the Conditions of Approval in EB-2019-0172 LTC Decision and Order (Conditions of Approval No.1, 3, 4 and 6). Pursuant to Condition of Approval No.4, Enbridge Gas has filed 3 Change requests. Also, as per Condition of Approval No.7, Enbridge Gas has designated one of its employees as project manager. All other Conditions of Approval will be met when the project is completed and placed into service.

c) Please see Exhibit.I.ESSEX.4 f). Certain conditions can only be fulfilled after completion of the project and the pipeline is placed into service.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.3 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit A, Tab 2, Schedule 1, Page 2, paragraph 4

Preamble:

The replacement of the pipeline is required because of its age, and Enbridge wants to complete the installation as soon as possible.

Question:

- a) When did Enbridge become aware of the integrity issues on the existing pipeline?
- b) Was the depth of cover of the current pipeline a consideration in assessing the integrity of the current pipeline?
- c) Did Enbridge consider the minimum depth of cover the County would require in assessing its plans to replace the existing pipeline?
- d) If time is such an important consideration to Enbridge, why does it refuse to install the new pipeline in close proximity to the existing pipeline?

Response:

a) and b) The integrity and depth of cover issues were examined at great length, through Interrogatory responses and technical conference in the Windsor Line Replacement LTC proceeding, EB-2019-0172, see for example Exhibit I.STAFF.2 a) to c) and pre-filed evidence, EB-2019-0172, Exhibit C, Tab 3, Schedule 1. The company notes that these questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

- c) Yes, among several factors.
- d) During the design phase of the project Enbridge Gas evaluated replacement pipeline alignments that would be safely constructible while maintaining a 2m clearance from the existing NPS10 and meet all necessary requirements for design and future

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.3 Page 2 of 2

maintenance. The alignment that has been presented to the County is the result of those evaluations.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.4 Page 1 of 3 Plus Attachments

ENBRIDGE GAS INC. Answer to Interrogatory from <u>County of Essex (ESSEX)</u>

INTERROGATORY

Reference:

Exhibit A, Tab 2, Schedule 1, Page 2, Paragraph 5

Preamble:

Enbridge indicates that it commenced construction of the pipeline where it received the necessary municipal or environmental approvals.

Question:

- a) From which municipalities has Enbridge received approvals? Provide copies of the approvals received.
- b) Are the sections of pipeline for which municipal approvals were received, to be installed within a municipal right-of-way?
- c) If the proposed pipeline is to be installed within the municipal right- of-way, is the pipeline located within the travelled portion of any roadway, including any unpaved shoulder?
- d) If any of the proposed pipeline is located within the travelled portion of the roadway (including any unpaved shoulder), how far from the travelled edge of the roadway is the pipeline located and what is the minimum depth of cover required by each municipality that has provided approval? For each approval and minimum depth described, confirm the type of roadway/highway and its classification.
- e) Are there any agreements or bylaws in effect between the municipalities and either Enbridge or its predecessor, Union Gas, which delineate the minimum depth of cover, or is there another written authority Enbridge is relying on in asserting its purported right to determine the location of any pipeline and its depth of cover without municipal approval? If so, provide copies of the agreement and/or bylaws and/or other written authority.
- f) Was it reasonable for Enbridge to commence construction of the new pipeline prior to having all necessary approvals? If the answer is "yes", how was it

reasonable? If the answer is "no", why did Enbridge commence construction without having all approvals in place?

g) Can Enbridge put the new pipeline into service if the portion that lies within the jurisdiction of the County is not completed?

- a) Approval was received from the following municipalities:
 - Chatham-Kent (See Attachment 1)
 - Town of lakeshore (See Attachment 2)
 - Town of Tecumseh (See Attachment 3)
- b) Yes.
- c) Yes.
- d) Lakeshore and Chatham Kent did not specify any added depth requirements in areas off of the official travelled portion of the roadway. In areas where the main is installed within travelled portions it is installed to the design depth of 1.0m. The designation of roadways in the Project area and their classification is irrelevant to the depth design.
- e) Enbridge Gas designs and installs pipeline based on the Company's Construction & Maintenance manual for pipeline depth of cover and relies on Municipal consultations and consent for the running line. Enbridge Gas is seeking the Board's order pursuant to section 101 of the Ontario Energy Board Act, 1998 for authority to install the pipeline in the desired location.
- f) The Windsor Line Replacement LTC was approved by the OEB based on the integrity and safety concerns for the NPS10. Enbridge Gas commenced construction of the pipeline as directed in the LTC Decision and Order as it feels that it is imperative on many levels to continue construction in areas where municipal consent was achieved. At that time, Enbridge Gas anticipated reaching an agreement with the Essex County. Enbridge Gas notes that the request for removal and additional depth by Essex County were not consistent with past practice, expectations based on the provisions in the 1957 Road User Agreement and the requirements of the remaining municipalities in whose jurisdiction the Windsor Line Replacement is being constructed. See a) including Attachments and d) above.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.4 Page 3 of 3 Plus Attachments

g) Enbridge Gas will consider placing all areas constructed into service as soon as they are completed.

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.4, Attachment 1, Page 1 of 4



Municipality of Chatham-Kent

Infrastructure and Engineering Services Engineering and Transportation Division 315 King St. West, PO Box 640 Chatham ON N7M 5K8 Tel: 519.360.1998 Fax: 519.436.3240 Toll Free: 1.800.714.7497

SENT VIA EMAIL

January 24, 2020

Chantelle Rodger Advisor Permitting Transmission Enbridge Gas Inc. 50 Keil Drive North Chatham, ON N7M 5M1

Dear Ms. Rodger,

Re: Proposed NPS 6 Windsor Line Replacement Project – Municipality of Chatham-Kent Letter of Consent

The Municipality of Chatham-Kent is in support of this Pipeline Replacement Project and the methodology for construction and restoration contained in the documents and drawings that have been provided to date. The Municipality of Chatham-Kent is committed to working with you to ensure successful implementation and completion of this project. Please accept this letter as acknowledgement of our review and approval of the following documents and drawings pertaining to pipeline alignment, crossing locations, depths and restoration:

Documents:

- 2020 Windsor Line Replacement Project Proposed Procedures for Chatham-Kent (attached)
- Road Restoration Detail PL2429-RRD-01 (Standard Road Restoration) dated 2020-01-16

Drawings:

Drawing CAD Code	Date	Drawing CAD Code	Date
PL2429-AL-065	2019-08-20	PL2429-AL-073	2019-08-20
PL2429-AL-066	2019-08-20	PL2429-AL-074	2019-08-20
PL2429-AL-067	2019-08-20	PL2429-AL-075	2019-08-20
PL2429-AL-068	2019-08-20	PL2429-AL-076	2019-08-20
PL2429-AL-069	2019-08-20	PL2429-AL-077	2019-08-20
PL2429-AL-070	2019-08-20	PL2429-AL-078	2019-08-20
PL2429-AL-071	2019-08-20	PL2429-AL-079	2019-08-20
PL2429-AL-072	2019-08-20	PL2429-AL-080	2019-08-20

Chatham-Kent approves of the information contained in both drawings listed in the table above following the *Road Restoration Detail* (PL2429-RRD-01) dated 2020-01-16 for all Road Crossings and in accordance with the restoration procedures outlined in the attached 2020 Windsor Line Replacement Project Proposed Procedures for Chatham-Kent.

www.chatham-kent.ca

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.4, Attachment 1, Page 2 of 4

Additionally, the following comments were addressed and are acknowledged with no further concerns from the Municipality via email on May 3, 2019, October 29, 2019, December 4, 2019 and on January 8, 2020:

- Mainline/pipeline will be installed with a minimum of 0.3m separation for all <u>private</u> closed tile drains and will be identified/exposed on site prior to.
- Mainline/pipeline will be installed with minimum 2.5m clearance from the bottom of the drain for all <u>municipal</u> open and closed drains.
- Individual gas line services for both residential and farm properties will be installed 1.0m below the engineered bottom of both open and closed drains.
- Disturbed gravel shoulders will be replaced with clean Granular-A: minimum 300mm depth or matching exiting where greater and minimum 1.0m wide or matching existing where wider, complete with compaction and proper grading/shaping.
- Watermain crossings to have minimum of 0.3m separation in accordance with Enbridge Utility Separation Standards but will strive towards greater separation all throughout.

If Enbridge is in agreement with our approvals and comments above, please print, sign and return a scanned copy of this letter by email to the Municipality.

Should you have any further questions, please advise. I can be reached by phone at 519-360-1998 or by e-mail <u>chris.thibert@chatham-kent.ca</u>.

Regards,

Chris Thibert, P.Eng. Director, Engineering & Transportation

On behalf of Enbridge Gas Inc.

Chantelle Rodger Mark Murray Advisor Permitting Transmission Supervisor, Permitting

Ryan Brown, Director, Public Works
 Mark McFadden, Manager, Infrastructure Services
 Katerina Oliver, Drainage Superintendent

Attachments

- 2019 CK Rural Expansion Project Proposed Procedures for Chatham-Kent
- Road Restoration Detail PL2335-RRD TYPICAL (Standard Road Restoration) dated 2019-01-24

2020 Windsor Line Replacement Project Proposed Procedures for Municipality of Chatham-Kent

Standard Drain Restoration

The preferred crossing method for Municipal Drains will be by means of Horizontal Directional Drilling (HDD). Where an HDD (trenchless) crossing is not feasible the Municipal Drain will be open cut. No site damage is anticipated during the HDD crossing process, but all crossing locations will be restored to pre-existing condition or better if required. Enbridge will return to Municipal Drain crossings the year after construction to confirm restoration is satisfactory and will complete restoration repairs as required.

Roadway Restoration

Enbridge will retain a third-party consultant to provide geotechnical services during open cut road crossings. All granular and asphalt material being used will be confirmed to be suitable per OPSS specifications. Material reports will be made available to any Municipal authority to demonstrate compliance with road repair specifications. The geotechnical consultant will monitor placement and complete compaction testing during roadway restoration and placement of granular and asphalt material.

Any inspection that Municipality Chatham-Kent would like to perform during restoration will be accommodated.

Closed Tile Drain Restoration

If an open cut installation is required for a closed municipal drain it will be temporarily repaired to maintain flow during construction activities. Permanent repairs (if not completed at the time of installation of the pipeline) will follow construction by a local drainage contractor to the satisfaction of Chatham-Kent.

Condition Assessment – Roads and Drains

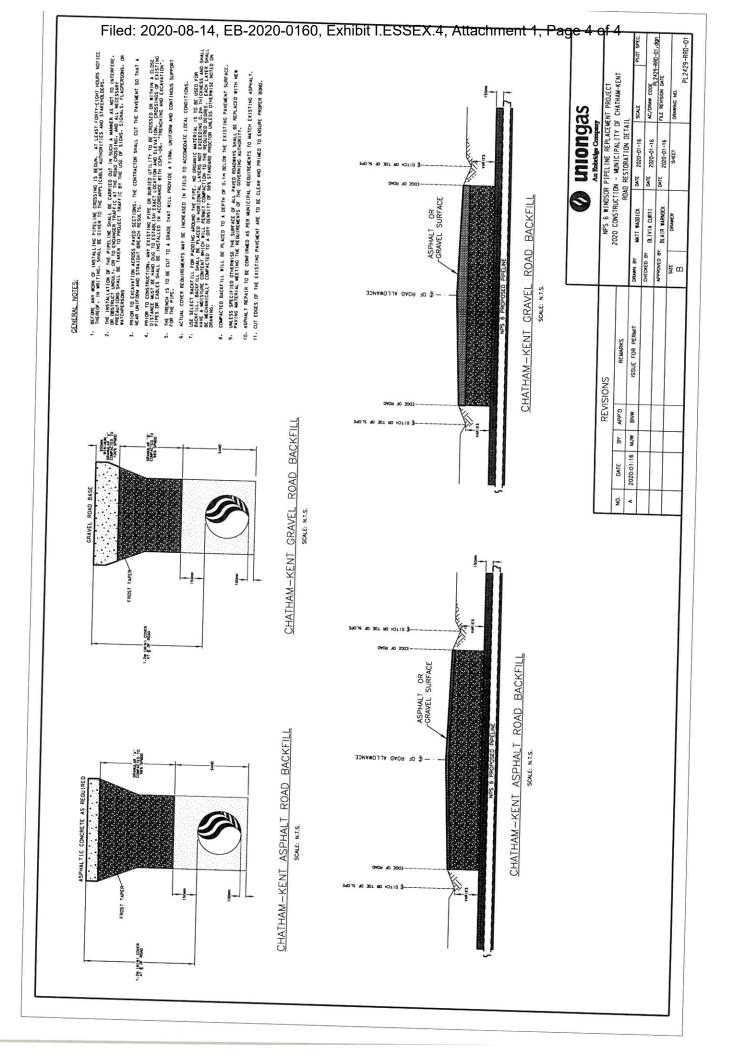
Enbridge will complete a precondition assessment of the approved haul route and municipal drains impacted by the scope of work. The assessment will consist of a detailed description and photographs to establish a condition baseline, and if necessary, can be used as a comparison to confirm impact to haul routes and restoration of municipal drains. A copy of the assessment will be supplied to Chatham-Kent.

A post construction site review after construction is complete can be conducted for Chatham-Kent to confirm haul route condition and drain restoration. Following this site review any deficiencies and/or requirements that need to be addressed will be completed by Enbridge.

Water-main Crossing Procedure

Prior to any commencement of the construction at each crossing, including exposure of water mains, the Contractor shall notify the municipality of Chatham-Kent a minimum of 48 hours' in advance, which shall not include Saturdays, Sundays or statutory holidays.

A utility inspector will be on site to ensure the water main support is installed in accordance with the approved support drawings.



Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.4, Attachment 2, Page 1 of 1



TOWN OF LAKESHORE

419 Notre Dame St. Belle River, ON NOR 1A0

April 2, 2020

Enbridge Gas Inc. 50 Keil Drive North Chatham, Ontario N7M 5M1

Re: Enbridge Windsor Line Replacement – Municipal Consent and Approval for Gas Services

The Town of Lakeshore has completed review of all submitted documents for the NPS 6 Windsor Line Replacement project. In coordination with the 2000 Model Franchise Agreement, please accept this letter as municipal consent and approval for the proposed gas service work within Lakeshore road allowances. The following conditions have been agreed upon through previous correspondence:

- All road allowances shall be restored to the pre-existing or better condition and restored to Lakeshore's satisfaction
- Pre-construction, construction and post-construction photos for each proposed gas service to be completed by Enbridge and available to the Town upon request
- The following services have been approved for open cut across a Municipal Drain
 - o 453 County Road 46 Middle Road Drain
 - o 1039 County Road 46 4th Concession Drain
 - o 2717 County Road 46 Middle Road Drain
 - o 2835 County Road 46 Knister Drain
- Additional open cuts across Municipal Drains beyond the four mentioned locations above will have to be reviewed and approved on a case by case scenario by Lakeshore
- Cable concrete matting to be used for bank stabilization of all open cuts of municipal drains
- All work within a Municipal Drain will be inspected. Lakeshore will appoint a representative to complete inspection
- All hard surface (asphalt and tar and chip) disturbed by servicing construction will be repaired to the Town of Lakeshore's satisfaction. Specifications for asphalt restoration will be determined on a case by case scenario
- A minimum vertical separation of 2 meters between proposed gas main and engineered hard bottom of Municipal Drains is required
- A minimum vertical separation of 1 meter is required between watermain and proposed gas service crossings

Should you have any questions please do not hesitate to contact the undersigned.

Yours truly,

Brian Laramie, C.E.T. Engineering Technologist Engineering Services

From:Chantelle RodgerTo:Michelle LanduytSubject:FW: EGI 2020 Windsor Line ReplacementDate:Wednesday, June 24, 2020 2:41:00 PMAttachments:Enbrige Temporary Use Approval-NTR.pdf

TLU request was submitted March 10, 2020. Approval per below received March 11, 2020

Chantelle Rodger

Advisor Permitting Transmission

ENBRIDGE GAS INC.

TEL: 519-436-4600 ext. 5002411 | CELL: 519-350-0557 | <u>chantelle.rodger@enbridge.com</u> P.O. Box 2001, 50 Keil Drive North, Chatham, ON N7M 5M1

<u>enbridge.com</u>

Integrity. Safety. Respect.

From: Kirby McArdle <kmcardle@tecumseh.ca>
Sent: Wednesday, March 11, 2020 9:15 AM
To: Chantelle Rodger <Chantelle.Rodger@enbridge.com>
Cc: Sam Paglia <spaglia@tecumseh.ca>; Brad Dupuis <bdupuis@tecumseh.ca>; John Henderson
<jhenderson@tecumseh.ca>
Subject: [External] EGI 2020 Windsor Line Replacement

EXTERNAL: PLEASE PROCEED WITH CAUTION.

This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Chantelle,

In follow up to our meeting yesterday I wanted to provide some comments for the work as proposed.

The County of Essex is the Road Authority and as such any municipal consent will need to come from them. They will also be the approval authority for any new entrances or culverts enclosing any of their roadside ditches. For any restoration details with respect to these ditches direction will need to come from them as well.

The proposed pipeline does cross several Municipal Drains and for some locations it runs parallel to a Municipal Drain. For these areas our Drainage Superintendent, Sam Paglia will be in contact with you with regards to information on the drain designs and grades. My understanding is we may engage a consultant on behalf of the drains owners to inspect any work in/on or around these Municipal Drains.

The Town's main concerns regarding the project as proposed was in relation to a future trunk water main planned on the same side of the road. Currently, a distribution main runs along the road and services a portion of the residents; the Towns long-term plans include the installation of a 400mm transmission main along the length of the project. After review of the works we can confirm that as

shown on the plans there is enough room to satisfy our separation concerns when the future works takes place. There will be locations where the existing water main may be exposed due to construction but these are unavoidable. As long as the new pipe line is placed in accordance with the plans reviewed the Town has no objections to its location.

We do request that the Water Department be informed of any works that may entail the existing water main to be exposed either by daylighting to verify or through open cut construction. The Water Department also requests to be consulted on the decisions for the service connections of the new pipe line that will cross the water main to the north side of CR #46.

With respect to the use of a portion of closed North Talbot Rd. at the easterly extent of the project the Town will allow this road allowance to be used as a staging area. The area will be returned to pre-existing conditions upon completion of the works to the Towns satisfaction.

Kirby McArdle, P.Eng. Manager, Roads & Fleet Town of Tecumseh

Kirby McArdle Manager Roads & Fleet

kmcardle@tecumseh.ca Town of Tecumseh - 917 Lesperance Rd - Tecumseh, ON. - N8N 1W9 Phone: 519 735-2184 , 144 Fax: 519 735-6712 - <u>www.tecumseh.ca</u>

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Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.5 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit A, Schedule 1, Page 3, Paragraphs 9 and 10

Preamble:

Enbridge asserts that "typically" it applies to the applicable road authority for approval to install a project and that this is to avoid conflicts with current and future infrastructure.

Question:

- a) Does Enbridge acknowledge that the County has advised Enbridge throughout the consultations related to this project that the County preferred that the pipeline be aligned within close proximity to the existing pipeline and/or property line to avoid future widening and infrastructure plans?
- b) Has Enbridge completed an analysis for the cost of keeping the new pipeline in close proximity to the existing pipeline? If so, provide a copy. If not, why not?
- c) On what authority is Enbridge relying on in asking the OEB to ignore the rights of the County pursuant to the Franchise Agreement and the obligation of Enbridge to obtain the County's consent?
- d) What steps did Enbridge take to avoid conflicts with current and future infrastructure, and satisfy the County that the proposed alignment took this into consideration?

Response:

a) Yes. West of Manning Road where the County identified a potential widening within the next 10 years, Enbridge Gas moved the pipeline away from the edge of pavement. Enbridge Gas notes the County has not provided detailed engineering drawings showing the widening for any area – even west of Manning Road. Enbridge Gas notes that the County did not, and has not produced any infrastructure widening plans, including long term asset management plans, to consider east of Manning Road.

- b) No. The installation of the new pipeline in close proximity to the existing line is not feasible and the current running line is inconsistent along the ROW and varies into private easements. There are also too many conflicts that would make that running line not feasible.
- c) Enbridge Gas is not asking the Board to ignore the 1957 Franchise Agreement. Enbridge Gas has requested the Board grant approval where the County has refused to do so despite not identifying any conflict with infrastructure nor providing any engineering analysis that Enbridge Gas' proposal is not appropriate. The legislature gave the Board certain powers including s.101 of the *Ontario Energy Board Act, 1998* and Enbridge Gas is seeking to have the Board exercise its authority.
- d) Prior to finalization of consent applications, it is common to physically validate the location of utilities. Enbridge Gas requested to complete pre-construction locates to physically validate utilities on several occasions and confirm the locations of existing infrastructure and conflicts but were declined the request for daylighting permits to work in the ROW by the County of Essex.

All daylighting in Lakeshore and Chatham-Kent was completed in March and April 2020 to validate and facilitate running line discussions for consent.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.6 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit A, Tab 1, Schedule 1, Page 4, paragraph 11

Preamble:

Enbridge has indicated that the "unusual" requirements of the County includes (a) the execution of a Road User Agreement, (b) a minimum depth of cover of 1.5 metres of approximately 22.9 kilometres of the new pipeline, and (c) removal of the abandoned existing NPS 10 steel main.

Question:

- a) Can Enbridge clarify why the County seeking to have any agreement regarding the installation in writing is "unusual"? Has Enbridge never before been asked to enter into an agreement in writing with a municipality prior to commencing construction of a project?
- b) Has Enbridge prepared any drawings showing the pipeline along the route and at the depth approved by the County? If so, provide copies of same. Has Enbridge never been asked to meet a minimum depth required by a municipality before that exceeds CSA Standards?
- c) Why does Enbridge believe that it is reasonable to leave a pipe in place in a right-of-way that is constrained and has limited room for various demands for placement of infrastructure?

Response:

a) It is not the mere fact that the County required a "road user agreement" that caused an issue. Enbridge Gas has numerous franchise agreements and obtains the consent for works from a municipality through permits, consents and would consult with the municipalities regarding the needs of a municipality. As can be seen from the approvals provided in Exhibit I.Essex.26, the existing road user agreement proposed by the County deviates significantly from the requirements applied to other local projects in respect of the Windsor Line Replacement.

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Enbridge Gas was not presented with a draft agreement until Friday April 17th, 2020 and such agreement was a departure from past practice with the County and the manner in which Enbridge Gas engages with other municipalities. Enbridge Gas attempted to negotiate an acceptable agreement with the County that would be consistent with Enbridge Gas' obligations.

- b) Enbridge Gas was asked to resubmit a drawing proposal for the County of Essex to review that would show the depth of 1.0m and 100% abandonment of the County Rd 46 area in early April 2020. Paper copies for consideration were left with Essex County administration for K. Kalbol and K. Ballallo to comment on if sufficient. The question on minimum depth is too broad to answer accurately. In road allowance the depths that Enbridge Gas has designed have been sufficient to satisfy municipalities. Under drains and culverts there have been varying requests based on upcoming municipal renewal plans.
- c) Enbridge Gas is proposing to abandon the existing pipeline in place as per the 1957 franchise agreement.

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ENBRIDGE GAS INC. Answer to Interrogatory from <u>County of Essex (ESSEX)</u>

INTERROGATORY

Reference:

Exhibit A, Tab 1, Schedule 1, Page 4, paragraph 13

Preamble:

Enbridge has alleged that the County has failed to demonstrate a safety reason or future conflict with a road project to support the County's requirement for a minimum depth of cover of 1.5 metres.

Question:

- a) Why has Enbridge failed to provide an engineering report confirming that a departure from the TAC Guidelines creates no safety concerns, will have no impact on the integrity of the roadway, and will not limit the ability to use the roadway by all users of County Road 46?
- b) Has Enbridge been advised repeatedly that (1) County Road 46 is used for overweight and oversized loads and agricultural users, among others, that utilize both the paved roadway and the unpaved shoulder of the roadway and (2) that the County intends to widen County Road 46?

- a) Please see Exhibit I.ESSEX.1 c) and response to part b) below.
- b)
- Yes. Enbridge Gas provided an engineering analysis demonstrating a depth of cover of 1.0 metre was sufficient. Even Dr. Tape acknowledged the loading analysed by Enbridge Gas/Wood was "conservative". Enbridge Gas notes that most municipalities do not require adherence to the TAC Guideline. Further, Enbridge Gas interprets the TAC Guidelines as recommendations for utilities crossing roadways whereas the situation at dispute in this Application involves a longitudinal installation.
- 2. Yes, but the County has not provided Enbridge Gas with a timeline for road

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expansion nor a cross section of the proposed expansion for consideration that would impact the proposed pipeline alignment east of Manning Road in Windsor. Regardless, Enbridge Gas's proposed depth of cover of .75 to 1m is sufficient.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit A, Tab 1, Schedule 1, Page 5, paragraph 14

Preamble:

Enbridge has alleged that the County has "demanded" that Enbridge remove the portion of the existing pipeline that lies in the County's right-of way rather than allowing it to be abandoned.

Question:

a) Did Enbridge agree very early in its discussions with the County to remove the existing pipeline once the new pipeline was placed into service?

Response:

a) In discussions with Essex County, Enbridge Gas was advised that one way to reduce depth of cover requirements from 1.5m to 1.0m was for Enbridge Gas to agree to abandon the pipeline along County Rd 46. Enbridge Gas agreed to consider the abandonment but indicated that significant costs and preconstruction assessments are required for an abandonment plan. The County of Essex then later indicated that 1.5m depth was the minimum acceptable standard for the RUA.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit A, Tab 1, Schedule 1, Page 5, paragraphs 15 and 16

Preamble:

Enbridge has alleged that the County's requirements will increase costs by \$13 million and that the depth required by the County will create risks and challenges for working around the Town of Lakeshore's watermains.

Question:

- a) Why would Enbridge proceed to calculate costs for submission to the OEB prior to determining what the requirements of the municipalities, including the County, were?
- b) How did Enbridge calculate potential costs at all without first ascertaining the requirements of the various municipalities, including the County?
- c) Were the risks and challenges with other infrastructure addressed through a route study as part of an environmental assessment? If the answer to this is "yes", confirm how the route study addressed these concerns. If the answer to this is "no", why did Enbridge fail to have a route study completed as part of the environmental assessment process?
- d) Did Enbridge not consider a contingency allowance in its original LTC Application to address any increased costs it may learn of during the municipal approval process? If the answer to this is "yes", what contingency did Enbridge build in and how was it calculated? If the answer to this is "no", why did Enbridge not build a contingency in?

Response:

a) Enbridge Gas costs were based on the requests of Essex County. All other municipal requirements were understood through consultations with Town of Tecumseh and via Lakeshore municipal consent.

- b) See response to part a).
- c) As noted in Section 2.0 the Environmental Report (ER), a detailed routing study was not completed because the proposed Windsor Replacement Pipeline will be generally replaced within existing road allowances, in the immediate vicinity of the existing Windsor Pipeline and its associated service connections. This approach serves to co-locate linear infrastructure in accordance with Section 1.6.8.5 of the Provincial Policy Statement¹, and serves to parallel existing disturbance, which reduces potential impacts to the natural environment (in accordance with the Ontario Energy Board (OEB) Guidelines²). For these reasons, a detailed routing study was deemed unnecessary, as metrics would have determined that co-locating the pipeline to parallel existing disturbance was preferable to any alternatives outside of the municipal road allowance, particularly in an area of prime agricultural lands (ER Section 4.2.5). The ER was completed in accordance with the guidance outlined in the OEB Guidelines. The County was provided the opportunity to comment on the Environmental Assessment through the OEB process. No responses were received from the County.
- d) A Contingency was included in the LTC Application (EB-2019-0172, Exhibit C, Tab 4, Schedule 1). Contingency is calculated on the overall project costs in the original LTC. The requests made by the County of Essex are outside of the normally expected contingencies to construction of a distribution pipeline. Enbridge Gas makes decisions considering the prudence of the expenditure and the existence of a contingency sufficient to cover an expenditure does not necessarily mean such expenditure is prudent.

 ¹ Government of Ontario. Provincial Policy Statement, 2020 – Under the Planning Act. Available online at: <u>https://files.ontario.ca/mmah-provincial-policy-statement-2020-accessible-final-en-2020-02-14.pdf</u>.
 ² Ontario Energy Board. 2016. Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario. 7th Edition.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.10 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit A, Tab 2, Schedule 1, Page 6, paragraphs 20, 21, and 23

Preamble:

Enbridge alleges that it has repeatedly explained and demonstrated through an engineering report that the proposed installation is appropriate and the County has provided no technical information to the contrary.

Question:

- a) Can Enbridge explain how the information and reports provided by Enbridge to date confirms that the minimum depth has been considered in relation to a roadway of the nature of County Road 46, that the proposed installation will not negatively affect the integrity of the roadway, and that the proposed installation will not impact on the various users of the roadway or the future expansion of the roadway?
- b) Is it Enbridge's position that it did not receive the various technical reports completed by Haddad Morgan addressing the deficiencies in the information and opinions provided by Enbridge?

- a) The engineering report prepared by Wood for Enbridge Gas concludes that for 1.0 m of cover over the pipeline, and for the vehicle loading noted in the report the stress on the pipe is estimated to be approximately 51% of the allowable limit in accordance to CSA Z662.
- b) Enbridge Gas received three letters from Haddad Morgan, dated May 7, May 19 and May 29, 2020.

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ENBRIDGE GAS INC. Answer to Interrogatory from <u>County of Essex (ESSEX)</u>

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 1, paragraph 3

Preamble:

Enbridge indicates that as part of its original application related to this Project it sought approval of the form of land agreements related to easements it could enter into with private landowners.

Question:

a) Did Enbridge attempt to obtain land rights from private landowners adjacent to County Road 46? If the answer to this question is "yes", what efforts were made and how many agreements were entered into and where? If the answer to this is "no", why did Enbridge not approach private landowners and why is Enbridge taking steps to abandon current private easements?

Response:

a) Enbridge Gas provided the list of all land rights obtained in the LTC for EB-2019-0172. Also, please see Enbridge Gas response in Exhibit I.STAFF.11 f).

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 4, Paragraphs 14 and 15

Preamble:

Enbridge indicates that it has agreed to a 1.0 metre depth of cover within six metres of the edge of the travelled portion of the road. Enbridge further alleges that any deeper depth of cover has material financial implications not only to immediate construction but to longer term for future operation and maintenance of the pipeline and connection of future services. Enbridge further alleges that an additional depth of cover would significantly alter a typical construction plan for the installation of the distribution type within any road allowance including the proposed County Road 46 location. Enbridge further alleges that a depth of cover of 1.5 metres changes the excavation requirements and increases the potential for the conflict with other third party utilities.

Question:

- a) What are the "material" financial implications to increasing the depth of cover?
- b) Are the financial implications the only concerns of Enbridge Gas in the circumstances? If not, what other concerns are taken into account?
- c) Is the majority of the new pipeline proposed to be installed within 3.0 metres of the existing edge of the paved portion of the roadway of County Road 46? If not, how much of the new pipeline is proposed to be installed within 3.0 metres of the current paved edge of County Road 46?
- d) If County Road 46 is widened as projected, would the new pipeline fall beneath the paved portion of the expanded County Road 46 and/or under the unpaved shoulder?
- e) If the new pipeline fell beneath the paved portion of a widened County Road 46, it would clearly be within the travelled portion. Would this result in increased maintenance costs as the pipeline would be under the paved road? Would any maintenance and/or future service connections require the

destruction or excavation of the road and the cost associated with the replacement? Alternatively, does Enbridge admit that (1) it would be required to move the new pipeline to another location to accommodate widening so that the pipeline is outside the travelled portion of the road, (2) that Enbridge would be responsible for all relocation costs, and (3) that private easements may be required in the future considering there are no other options so close to the edge of pavement within the right of way now?

- f) Given that the County intends to widen County Road 46 does this have any implication or effect on the 1.0 metre minimum depth of cover being proposed by Enbridge? If so, what is/are the implication(s) and effect(s)?
- g) Enbridge alleges that a 1.5 metre depth, "increases the potential for the conflict of other third party utilities". To what "other third party utilities" is Enbridge specifically referring?
- h) How would a 1.5 metre minimum depth of cover conflict with the other alleged third party utilities?
- i) Has Enbridge confirmed what other utilities would be in conflict with the proposed alignment and the depths of those utilities? If so, what utilities are in conflict with Enbridge's proposed alignment and what are the depths of those utilities? If not, why has Enbridge not ascertained this in advance of bringing this application or alleging that the 1.5 metre minimum depth required by the County will conflict with other utilities?

- a) As stated in the pre-filed evidence, any deeper depth of cover has material financial implications not only to immediate construction but to longer term for future operation and maintenance of the pipeline and connection of future services. Minimum excavation and construction requirements after 1m of cover alter construction methods and decrease daily productivity for safe compliance to appropriate shoring and trenching. With directional drilling all bell pits for main tie in's and each service connections would require trench boxes and significantly greater excavations to complete.
- b) Safety is the primary concern in execution of any construction project. With additional depth comes risk and cost to the execution details to complete construction. The County of Essex had declined Enbridge Gas's requests for lane closures for worker safety and with increase excavation area requirements the cost to maintain roadside safety while working in such conditions was a heavy

consideration in this request. Eventually with agreement from the County of Essex to have limited lane closures this safety risk is still of great concern.

- c) Yes, with the exception of approximately 6 kms proposed West of Manning Road in Windsor. For the majority (20+kms) of the remaining 30 kms of this proposed pipeline in the municipalities of Lakeshore and Chatham-Kent (not within Essex County), the pipeline is within 3m of the edge of gravel and paved roads.
- d) Enbridge Gas cannot comment on this question as a proposed road cross section for the suggested widening of County Road 46 was never provided.
- e) Enbridge Gas cannot not speculate on future costs of maintenance of the pipeline or future service connections based on a hypothetical argument that County Road 46 may expand. Should the proposed pipeline in the future be covered by a future expansion Enbridge Gas would determine the impacts to its ability to maintain the pipeline and service customers from the pipeline at that time and make appropriate mitigation plans then.
- f) The County must provide plans and profiles of the existing conditions and the proposed widening to Enbridge Gas before Enbridge Gas can evaluate the impact of the proposed widening on the gas distribution pipeline.
- g) Enbridge Gas is referring to watermains, sanitary sewers and closed storm drains and their respective service lines that are generally known to be installed with this 1.5m approximate depth of cover.
- h) In order to trench for pipeline installation, perform pipeline tie-ins and service customers from the proposed pipeline at a depth of 1.5m to top of pipe, trenches become very wide to slope them for safe human occupancy even when shoring is considered. The proposed pipeline is in relatively close proximity, i.e. 1.5m offset to existing watermains. The possibility of losing lateral support on watermains is high which may cause failure of those mains is a concern.
 Also, when installing services off the proposed main they would then need to cross over water, sewer and storm drains installed with similar depth of cover increasing
- i) During design Enbridge Gas completed a field survey to collect the positions of above ground utility structures as well as obtained as-built data and GIS mapping from the municipalities and other utility owners along County Road 46 to determine the position of those utilities in the road right of way. Enbridge Gas's proposed alignment avoids direct conflict with those utilities based on this exercise. Enbridge Gas would normally perform field verification of lateral position and depth of those utilities that are buried by daylighting them at various points along the

the opportunity for third party damage.

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proposed alignment, but Enbridge Gas was not granted approval to complete any works of investigation as the County of Essex would not permit it.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 4, paragraphs 16 and 17

Preamble:

Enbridge sets out the additional costs and work required for trench construction at a depth of 1.5 metres.

Question:

- a) According to plans filed with the County, was it not the intention of Enbridge to use boring for approximately 9.2 kilometres of the new pipeline?
- b) If Enbridge Gas plans to bore for the construction of 9.2 kilometres of the new pipeline, why can boring not be utilized for the balance of the new pipeline?
- c) Does Enbridge admit that boring is generally a less disruptive method of installing new pipeline than trenching?

Response:

a) Yes.

- b) Enbridge Gas's construction plan is a mix of open trench and trenchless installation from the furthest west point in Town of Tecumseh through to Rochester Townline. Estimates for added costs for construction methods maintain a mix of directional drilling and trenching but all main tie in's and service attachments will still require significant excavations as noted previously. Utilizing additional directional drilling is indeed a possibility but Enbridge is seeking a prudent use of funds to execute construction for the entire replacement of the NPS10 Windsor Line.
- c) Not necessarily. Directional drilling can be viewed as 'generally' less disruptive but Enbridge Gas would make the following observations:
 - Actual construction execution requires practical locations strategically placed for bore pits and tie in of mainline sections.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.13 Page 2 of 3

- Extended locations for stringing and welding pipe to be pulled into installation for the increased lengths of bores may restrict resident access to homes for duration of drilling at site.
- Temporary land use is often required at drill set up and tie in pit locations with preventative environmental measures set in place for hydrovac in the event of frac out.
- In areas where directional drill tie in, service connections and entry or exit pits are required the disruption to that site can be significant.
 In contrast, trenching at .75m depth in comparison in an area with short leave out sections allows for full resident access. Spill piles kept directly adjacent to installation, return of native soil into trench and seeding activities immediately upon completion for restoration offers a comparatively less disruptive overall method.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

TAB 2 – Exhibit B, Tab 1, Schedule 1, Page 6, Paragraphs 21 and 22

Preamble:

Enbridge sets out that installing the new pipeline to a location greater than six metres from the travelled portion of the roadway would be problematic as it would generally position the pipeline on the edge of, or under, municipal drains. Enbridge alleges that municipal drains are generally a regulated area with numerous conditions and restrictions for both construction methods, restoration and timing windows and are commonly treated as another utility because of their requirement for maintenance, including dredging.

Question:

- a) To what drain or drains is Enbridge referring?
- b) Where are these drains, specifically, located?
- c) Is there one drain to which Enbridge is referring or are there numerous drains?
- d) What is the exact location and depth of the drains and are they within the jurisdiction of the County or another municipality?
- e) Does the existing pipeline conflict with any municipal drains?
- f) Was this assessment outlined in the environmental assessment to confirm the impact is greater further from the paved edge of the roadway? If so, provide a copy of the relevant section of the environmental assessment?
- g) Was the cost to obtain private easements investigated by Enbridge? If so, what were the costs associated with private easements and how were those costs determined?

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.14 Page 2 of 2

- a) Please see Exhibit I.EP.7 a).
- b) These drains are specifically located along County Road 46.
- c) There are numerous drains that Enbridge Gas is referring to.
- d) The drains are in the municipality of Lakeshore.
- e) Yes. Inadequate depth of cover of the existing pipeline, including near municipal drains was noted in EB-2019-0172. It should also be considered that the existing pipeline was installed more than 70 years ago and infrastructure, such as municipal drains, has likely changed since that time. At that time, it was reasonable to assume there were different design, construction and permitting process to follow and far fewer attachments to that pipeline.
- f) The Environmental Report (ER) did not explicitly evaluate whether the impact to the environmental is greater further from the paved edge of the roadway. As noted in Section 2.4 of the ER, the preferred route that was evaluated consisted of a general location. All the natural features that are discussed in the ER are located outside of the existing disturbance associated with roadways. Locating the pipeline outside of the municipal road allowance would increase negative impacts to the biophysical and socio-economic features identified in the ER. Working immediately adjacent to the roadway allows construction crews to use previously disturbed areas. Locating the pipeline in an area that is not previously disturbed would result in an increased footprint on previously undisturbed land.
- g) This question is beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.15 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 7, Paragraph 23

Preamble:

Enbridge alleges that the County's proposal to move the proposed new pipeline to a location beyond six metres beyond the current edge of the paved portion of the roadway would offer no construction cost relief to Enbridge and significantly compromise the prospect of any future growth in service attachments.

Question:

- a) What are the details as to the manner in which movement of the proposed pipeline to a different location or using a depth of cover of a minimum of 1.5 metres would "significantly compromise" the prospect of future growth and service attachments?
- b) What construction cost relief would there be for the pipeline if it is paved over when County Road 46 is widened? Does Enbridge appreciate that repairs and service connections under the paved portion of County Road 46 would require pavement cuts, and that pavement cuts are not permitted by the County?

Response:

a) The placement in or around the bottoms of existing waterways or municipal drains compromises Enbridge Gas's ability to connect new growth customers. Waterways and municipal drains are subject to restriction windows for excavation or species at risk elements that may diminish timing windows to run new services or diminish operations maintenance requirements. Municipal drains are subject to dredging and clearing activities to maintain proper drainage and municipal work would be subject to 3rd party requirements to operate machinery for completing.

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 b) Enbridge Gas would consider cost implications when road profile changes are known. Enbridge Gas was unaware that pavement cuts are not permitted on County Road 46.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.16 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 7, Paragraph 24

Preamble:

Enbridge indicates that the demand for additional depth will make it more difficult for Enbridge to accommodate the required clearance to these other utilities. Enbridge alleges that a number of conflicts present themselves at the 1.5 metre depth of cover requested by the County.

Question:

- a) Please provide details as to "what other utilities" Enbridge is referring;
- b) Provide details of the conflicts that would occur if Enbridge utilized the 1.5 metres minimum depth of cover required by the County;
- c) Provide specifics of how the "other utilities" would be impacted, where the utilities are located along the approximately 29 kilometres of County Road 46 affected by the proposed new pipeline and what required clearances would be impacted by a minimum depth of cover of 1.5 metres?

Response:

a) to c) Please see Exhibit I.ESSEX.12.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

TAB 2 – Exhibit B, Tab 1, Schedule 1, Page 7, Paragraph 25

Preamble:

Enbridge alleges that the typical installation of NPS6 distribution pipelines can accommodate clearances to other utilities at the long standing 0.75 to 1.0 metre depth primarily using open cut trenching methods which Enbridge alleges are most efficient and effective in terms of time and cost.

Question:

- a) What is the maximum operating pressure of the NPS6 distribution pipelines to which Enbridge is referring?
- b) In what other municipalities and/or regions were these NPS6 pipelines installed and what was the maximum pressure for these pipelines?
- c) In what areas of the right-of-way were these other NPS6 pipelines installed, i.e. How far from the paved edge of the roadway? Were any under paved portions of roadways?
- d) What was the minimum depth required by each municipality and/or region in which the NPS6 pipelines were installed and what was the associated pressure? Confirm what minimum depths were required for each type of roadway, i.e. what depths were required for "highways" and/or "freeways" versus a local roadway.
- e) Were there any agreements between the responsible road authority and Enbridge setting out the depth of cover prior to the installation of the NPS6 pipelines Enbridge has previously installed, and, if so, provide copies of those agreements?
- f) What is the minimum and maximum depths of cover of the existing pipeline?

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g) What guidelines that Enbridge relies on permit a minimum depth of cover of 0.75 metres in the travelled portion of a roadway, and specifically a roadway similar in use to County Road 46?

- a) 3450 kPa
- b) and c) Enbridge Gas operates thousands of kilometres of pipeline with varying level of maximum operating pressure throughout Ontario. To provide the pipe pressure by municipalities or region is not relevant to this proceeding.
- d) There is no minimum depth required by the municipalities. As per Enbridge Gas Construction and Maintenance Manual, the depth of cover is .75m for a proposed pipeline. The minimum depth of cover required by code CSA Z662-15, table 12.2 is 0.6m. Please refer to Exhibit I.STAFF.2, Attachment 1.
- e) This question is beyond the scope of this proceeding.
- f) The depth of the existing gas pipeline is not to determine the appropriate depth of cover of the proposed NPS 6 pipeline as the NPS10 is a mixed vintage from the1940's to current day and is at end of life. Standards for design and installation are not the same as for new installations today and this should not be used for comparative reasoning in 2020.
- g) Enbridge Gas follows the requirements of CSA Z662-15, table 12.2 for the proposed pipeline. Please refer to Exhibit I.STAFF.2, Attachment 1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.18 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 8, paragraphs 26 and 27

Preamble:

Enbridge alleges that removal of the existing line is inconsistent with Enbridge's typical practice and was not planned as part of this Project.

Question:

- a) Did Enbridge agree to remove the existing pipeline from the County's right-ofway when the new line is brought into service?
- b) Did Enbridge put a value to the loss of land utilization by the County that would result from leaving an abandoned line in place?
- c) Why has Enbridge agreed to remove the pipelines from private easements, but is now taking the position it should not be obligated to do so from the County's lands?
- d) What maintenance costs does Enbridge anticipate will arise in order to continue to maintain the abandoned pipeline?

- a) Please see Exhibit I.ESSEX.8 a).
- b) No.
- c) Enbridge Gas will consider removal of pipelines from private easements as appropriate with landowners given the physical attributes of each property, but it is Enbridge Gas's discretion to release or retain the easement. Enbridge Gas has not yet made final decisions to release easements of the NPS10.
- d) Enbridge Gas does not anticipate costs to maintain the abandoned pipeline.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.19 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 10, paragraph 36

Preamble:

Enbridge states that it conducted meetings and presentation with both County Council and Administration from May of 2019 to May of 2020.

Question:

- a) Did County Council advise Enbridge it had concerns with the Project?
- b) Did County Council advise Enbridge to work with County staff to meet the County's requirements?
- c) Did county council express concern to Enbridge over the proposed like for like replacement and that it did not properly account for future growth? Did County Council request information pertaining to future growth projections being utilized by Enbridge?
- d) Did Enbridge communicate any of the above to the OEB as part of its original application related to the Project, even though Enbridge knew municipal consent would be required if the Project was approved by the OEB? If not, why did Enbridge conceal these concerns from the OEB?

- a) Yes.
- b) Yes.
- c) Yes. Essex County Council requested additional information on how a reduced NPS pipeline at a higher pressure could sufficiently serve future growth customers.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.19 Page 2 of 2

d) Enbridge Gas did not conceal any concerns in the OEB process. All municipal consent discussions were ongoing into March and April of 2020 leading to the granting of the LTC.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.20 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 11, paragraph 42

Preamble:

Enbridge states that the 1957 Franchise Agreement specifically grants Enbridge the right to install its pipeline within a highway.

Question:

a) Can Enbridge confirm where in the 1957 Franchise Agreement it permits Enbridge the authority to determine the specific location and depth of a pipeline within or along the highway and where in the 1957 Franchise Agreement this authority is taken from the County Engineer?

Response:

a) Sections 3 to 6 of the 1957 Franchise Agreement are directed to the installation of a pipeline.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.21 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 11, paragraphs 43 and 44

Preamble:

Enbridge alleges that the County provided no examples of what documentation would address the County's concerns with capacity, alignment of the pipeline, and traffic control plans.

Question:

a) Did the County provide detailed comments to the alignment drawings submitted by Enbridge, expressing detailed concerns the County had with alignment and depth? Confirm when this occurred.

Response:

a) Between March 13 and 25, 2020 the County of Essex began providing feedback points on alignments and project details that had been submitted. County of Essex requested traffic control plan details for every calendar day of the project, daily work schedules with hours of lane restrictions, additional pipeline removal plans, pavement protection details including list of all equipment utilized on the project etc. Enbridge Gas resubmitted with information known at that time for all items while awaiting the Road User Document that was to come on March 18. On March 18, RUA was still with solicitor so Enbridge Gas continued to work towards providing additional details, updating schedules and requested approval on documents submitted. March 24 received feedback that Traffic Control Plan had not been reviewed in detail but that road closure days were unacceptable and provided no direction on how to satisfy. RUA was still unavailable.

Between March 25, 2020 and April 8, 2020 the County of Essex requested visuals and pictorials of each portion of County Rd 46 with details on intersections including dates and times for closures for the project. Without approvals to establish a timeline Enbridge Gas was able to commit to weekly look a head and daily updates on progress only. On April 8, the County of Essex provided feedback on the alignments that the TAC guidelines will be adhered to and must be reflected in

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project submission prior to consent. CSA and Z662 were insufficient for the County and feedback at this time was provided that alignment drawings must reflect all requests made by the County of Essex, a RUA be signed prior to approvals. RUA was pending and would be made available April 17 to move forward with details of how to narrow down areas of concern on alignments for the County.

On April 17 at 5:27 pm, the RUA was presented to Enbridge Gas for review.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 12, paragraphs 46 and 47

Preamble:

Enbridge alleges that following a meeting with the County on February 6, 2020, Enbridge provided revised pipeline alignment drawings and a revised Traffic Control Plan.

Question:

- a) Did the revised alignment drawings address the County's concerns?
- b) Did the revised Traffic Control Plan illustrate no lane closures as required by the County?

Response:

- a) At no time so far in the project has Enbridge Gas received feedback that any alignment drawings were to the satisfaction of the County of Essex.
- b) Enbridge Gas indicated throughout all discussions that for the safety of workers within the ROW, a project with no lane closures was unsafe, impractical and not feasible.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 12, paragraph 48

Preamble:

Enbridge alleges that it learned of the requirements to be included in the Road User Agreement between March 8, 2020 and April 8, 2020.

Question:

a) Confirm when Enbridge received a sample of a typical Road User Agreement from the County and provide a copy of the sample provided to Enbridge.

Response:

a) A sample Road User Agreement was provided by the County of Essex to Enbridge on February 7, 2020 and referenced a Wind Farm from 2016. Please see Attachment 1. Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 1 of 43

ROAD USER AGREEMENT

THIS AGREEMENT made in duplicate this <u>10⁴⁺</u> day of <u>August</u>, 2016 (the "Effective Date"),

BETWEEN:

THE CORPORATION OF THE COUNTY OF ESSEX (Hereinafter referred to as the "Corporation")

OF THE FIRST PART

- and -

SP BELLE RIVER WIND LP (by its general partner, SP Belle River Wind GP Inc.) (Hereinafter referred to as the "Producer")

OF THE SECOND PART

WHEREAS the Corporation is a an upper tier municipality within the meaning of the *Municipal Act*, 2001, S.O. 2001, c. 25, governed by the Warden and County Council and operated by Administration, which Administration is hereby authorized to enter into and administer this Agreement in its entirety, including, but not limited to, decisions with respect to the operation and termination of this Agreement in accordance with its provisions;

AND WHEREAS the Producer is a limited partnership formed pursuant to and operating under the laws of the Province of Ontario, acting in this Agreement through its general partner, a corporation incorporated pursuant to the laws of Canada, and has represented to the Corporation that it has the requisite skill, ability, expertise and qualifications to carry on the business of wind power generation and transmission;

AND WHEREAS the Producer, pursuant to the laws of the Province of Ontario, wishes to construct, operate, maintain, and decommission a 100 megawatt wind energy generation facility known as the Belle River Wind Project, consisting of up to 41 wind turbines and other related and ancillary installations and equipment (including but not limited to junction boxes, cables, wires, access roads and entrances, overhead and buried distribution and transmission lines and poles, and a substation), within the boundaries of the Town of Lakeshore in the County of Essex (the "**Project**");

AND WHEREAS the Producer wishes to use certain portions of the road allowance(s) along County roads owned by the Corporation for the purpose of the Deliveries and performing the Works upon the terms and conditions hereinafter set forth;

AND WHEREAS the Corporation has agreed to grant to the Producer the rights described in this Agreement upon the terms and conditions as set out in this Agreement;

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AND WHEREAS the Producer has agreed to implement and comply with the Schedules attached to this Agreement;

AND WHEREAS the Effective Date of this Agreement shall be the date this Agreement is executed by the Corporation, which execution will not occur until all Schedules have been finalized, approved by the Corporation and attached to this Agreement, and the Agreement has been executed by the Producer;

NOW THEREFORE IN CONSIDERATION of the undertakings and covenants hereinafter expressed and upon the terms hereinafter set forth, and other valuable consideration, the receipt and sufficiency of which is hereto acknowledged, the Corporation and the Producer mutually covenant and agree as follows:

Recitals

1. The Parties warrant that the above recitals are true and that the same form an integral part of this Agreement and accordingly are hereby incorporated into this Agreement by reference.

Definitions

- 2. In this Agreement:
 - (a) "Applicable Laws" means any and all applicable laws, statutes, codes, ordinances, principles of common and civil law and equity, rules, approvals, regulations and municipal by-laws which are binding upon and applicable to the Project;
 - (b) "Approved Plan" means, as applicable, the approved Pole/line Plan (as may be amended from time to time) or the approved Plans (as may be amended from time to time) as approved by the County Engineer in accordance with the provisions of this Agreement;
 - (c) "Collector System" means the low voltage collector system required for the Project;
 - (d) "Collector System Plan" means the plan drawn to scale, showing the showing the permitted routing for the Collector System, as set out in *Schedule "C-1"* to this Agreement;
 - (e) "County Engineer" means the Director of Transportation Services/County Engineer for the Corporation or such other person as may from time to time be designated by the County Engineer;
 - (f) "Crossing" means any place where any components of the Pole/line System cross, in whole or in part, any travelled portion of a Highway;
 - (g) "Deliveries" means the transporting of materials, components and equipment, including overweight or over-size cargos, across or along the Highways, to provide for the construction, maintenance, repair, replacement, relocation, removal or decommissioning of wind turbines, electrical infrastructure, Entrances and other materials, components and equipment for the Project (including, without limitation,

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concrete, construction materials, wind turbine nacelles, blades, tower sections and transformers) and, for certainty, shall include the Initial Deliveries;

- (h) "Entrance Work" means the construction, maintenance and use of Entrances;
- (i) "Entrance Plan" means the plan showing the Entrances, as set out in Schedule "B" to this Agreement;
- (j) "Entrances" means the points of access across and through Highways to be constructed by Producer, as applicable, from the travelled portion of the Highway connecting to certain private access roads that lead to Project wind turbine generators and/or other infrastructure located on private land;
- (k) "Highway(s)" includes a common and public highway, street, roadway, avenue, parkway, driveway, square, bridge, viaduct or trestle, any part of which is intended for or is used by the general public for the passage of vehicles and includes the area between the lateral property lines thereof and shall include not only the travelled portion of such highway, but also ditches, driveways, sidewalks, and sodded areas forming part of the road allowance now or at any time during the term hereof under the jurisdiction of the Corporation. For greater clarity, the location and general site plan details of the Project, and the portions of Highways affected by this Agreement are more particularly depicted on *Schedule "A-1"* to this Agreement, and those Highways affected by the Agreement are further particularly described in *Schedule "A-2"* to this Agreement;
- (1) "Initial Construction Work" means the construction work relating to the Project to be undertaken by the Producer or its agents or contractors in connection with the original installation within the Highways of the Pole/line System including Entrance Work, Road Work and Tree Work, all as performed by the Producer to achieve substantial completion of the Project;
- (m) "Initial Deliveries" means the transporting of materials, components and equipment, including overweight or over-size cargos, across or along the Highways, to provide for the construction, maintenance, repair, replacement, relocation, or removal of wind turbines, electrical infrastructure, Entrances and other materials, components and equipment necessary to achieve substantial completion of the Project (including, without limitation, concrete, construction materials, wind turbine nacelles, blades, tower sections, transformers);
- (n) "Party" means, singularly, either the Corporation or the Producer and "Parties" means, collectively, both the Corporation and the Producer;
- (o) "Plan" means any plan required to be provided by the Producer to the Corporation pursuant to this Agreement which, for certainty, does not include the Pole/line Plan;
- (p) "Pole/line Plan" means, collectively, the Collector System Plan and the Transmission Line Plan, showing the Highways or portions thereof where the Work is proposed and the location of the proposed Pole/line System or part thereof, together with specifications relating to the proposed Pole/line System or part thereof;

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(q) "Pole/line System" means, collectively, such poles and lines (with other necessary or incidental appurtenances) associated with the Collector System and the Transmission System as the Producer may from time to time require or deem desirable for the transmission or distribution of electricity over, under, along and through the Highways in connection with the Project;

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- (r) "Project" has the meaning given to such term in the Recitals;
- (s) "PPA" means the power purchase agreement for the Project dated September 22, 2014 between the Producer and the Ontario Power Authority (predecessor in name to the Independent Electricity System Operator).
- (t) "Road Work" is temporarily reconstructing or re-aligning road sections, turns and intersections on the Highways to permit the passage of overweight or over-size cargoes;
- (u) "Transmission System" means the high voltage transmission line required for the Project;
- (v) "Transmission Line Plan" means the plan drawn to scale, showing the permitted routing for the Transmission System, as set out in *Schedule "C-2*" to this Agreement;
- (w) "Tree Work" is defined as cutting, trimming or removing trees or hedges growing in or adjacent to the Highways;
- (x) "Work" or "Works" means any work relating to the Project to be undertaken by the Producer or its agents or contractors in connection with the Highways, including without limitation, the Initial Construction Work, the Road Work, the Tree Work, the Entrance Work and original installation within the Highways of the Pole/line System and any and all repair or relocation work or additions to or replacements of any part of the Pole/line System or to the Project from time to time during the Term.

Schedules

3. The following Schedules (as may be amended from time to time by mutual agreement of the Parties) are attached hereto and form part of this Agreement:

Schedule "A-1" – Overall Project Map showing boundaries of Project;
Schedule "A-2" - List of the lands comprising the Highways upon which the Pole/line System will be located;
Schedule "B" – Entrance Plan;
Schedule "C-1" – Collector System Plan;
Schedule "C-2" – Transmission System Plan;
Schedule "D" – Acknowledgement and Consent Agreement;
Schedule "E" - Schedule of Permits Fees and Charges.

Grant

4. The consent, permission and authority of the Corporation is hereby given and granted to the

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Producer, its employees, agents and contractors:

- (a) to enter upon the Highways from time to time and at any time, to the extent they remain under the jurisdiction of the Corporation, to lay, construct, maintain, replace, remove, relocate, operate, inspect and repair the Pole/line System within, over, under or across the road allowance of the Highways for the distribution and/or transmission of electricity in connection with the Project as shown on the approved Pole/line Plan, and to carry out the Works contemplated in this Agreement. The consent, permission and authority hereby given extends only to the Highways as shown on Schedule "A-I" and listed on Schedule "A-2" attached hereto, and the Corporation shall not be obligated to provide any other right-of-way for the Pole/line System . Should the Corporation dispose of any portion of the Highways, it shall as a condition precedent to such disposal or closure retain an easement in favour of the Producer for the exercise by the Producer on such portion of the Highways of the rights granted to the Producer hereunder. Notwithstanding the foregoing, the Producer covenants and agrees that, except as otherwise agreed and subject to compliance with the Producer's 'Leave to Construct' authorization issued by the Ontario Energy Board in respect of the Project, it shall limit the installation and use of the Pole/line System within County Road 31 to below the surface of County Road 31 in accordance with the approved Pole/line Plan;
- (b) to use the Highways for the Deliveries; and
- (c) to do such other things as may be approved by the Corporation pursuant to the requirements of this Agreement including, without limitation, make any improvements required by the Corporation at intersection(s) or Entrance(s) in accordance with approved Plans.

5. The consent, permission and authority hereby given and granted shall be subject to:

- the rights and obligations of the Corporation to construct, maintain, reconstruct, rehabilitate and use at any and all times all Highways under the jurisdiction of the Corporation;
- (b) the right of free and legal use of all Highways by all persons entitled to use them;
- (c) the rights of the owners of the properties adjoining the Highways to enjoy full access to and from the Highways and of constructing crossings and approaches from their properties; and
- (d) the rights and privileges that the Corporation may grant to other persons on the Highways provided, to the extent in the control of the Corporation, such rights do not derogate from or interfere with the exercise by the Producer of the rights granted to the Producer hereunder;

all of which rights are hereby expressly reserved.

6.

Save as hereinafter provided, the consent, permission and authority hereby given and granted

to the Producer to enter upon the Highways shall at all times be subject to the prior approval of the County Engineer which shall be administered in accordance with the procedures set forth in this Agreement. All Work done from time to time under this Agreement is subject to the prior approval of the County Engineer, acting reasonably, who has full power and authority to give such directions and orders that the County Engineer considers in the best interest of the Corporation, and the Producer will follow all directions and orders that the County Engineer provides that are issued in accordance with the provisions of this Agreement and Applicable Laws.

Term

7. The rights hereby given and granted shall commence on the Effective Date and shall continue and be in full force and effect for a period of twenty-five (25) years from the Effective Date (the "Term") provided however that in the event the PPA is renewed or extended (or a substitute power purchase agreement is executed in respect of the Project), the Producer shall be entitled to request the consent of the Corporation, not to be unreasonably withheld or delayed, for an extension of the Term of this Agreement, on the same terms and conditions (provided, however, that the Parties may negotiate any mutually agreed upon amendments which may be required at the time of such extension), to coincide with the extended term of the PPA or the term of any substitute power purchase agreement for the Project, as applicable. Notwithstanding anything to the contrary, the rights hereby granted shall terminate in the event the PPA expires or is terminated and no substitute power purchase agreement is entered into for the Project. For certainty, in no event shall the Term of this Agreement exceed fifty (50) years from the Effective Date.

Co-Location

8.

(a) Where the Producer considers it to be commercially and technically practical and in the best interests of the Project, the Producer may negotiate with Hydro One Networks Inc. ("HONI") the right to co-locate all or a portion of the Pole/line System on HONI's existing or replacement electric poles located on the Highways ("Co-location" or "Co-locate" or "Co-located") provided that the foregoing shall not be deemed to create any obligation on the Producer to enter into any commitments or agreements with respect to the foregoing.

- (b) The Corporation agrees that it will work diligently with HONI to review and approve any applications from HONI related to the construction, operation, maintenance and decommissioning of the Project.
- (c) The Corporation confirms that it has granted or will grant HONI sufficient rights to lay, construct, maintain, replace, remove, relocate, operate, inspect, alter and repair HONI's equipment and electrical poles located on the Highways, for a period not less than the Term, and that such rights will permit HONI to grant the Producer the right to Co-locate, including appurtenant structures required to facilitate such Co-location,

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for the Term, subject to such terms and conditions that HONI and the Producer may agree upon.

Permits

9.

- (a) To the extent required for the Project, the Producer will require an Entrance permit and other miscellaneous permits for each site that has an access to a Highway under the jurisdiction of the Corporation, which sites are listed on the Entrance Plan attached hereto as *Schedule "B"*. The Producer shall not be permitted to construct any other access points onto any Highway under the jurisdiction of the Corporation without the prior consent of the Corporation.
- (b) The Producer will require a permit from the Corporation for any improvements or alterations made to any Highway, including without limitation improvements made to any intersection within any Highway under the jurisdiction of the Corporation, whether such improvement is temporary or permanent.

Approval Process

- 10 Before commencing any Works under this Agreement, the Producer will deposit a copy of the Pole/line plan (including any amendments thereto), with the County Engineer for review pursuant to the Section 11 hereof. For the purposes of this section, Works of the Producer include not only original installations but also any and all repair or relocation works or additions to or replacements of any part of the Pole/line System, but, for certainty, shall not include any regular maintenance or operations.
- 11. The County Engineer shall review and consider the Pole/line Plan and any other Plans submitted by the Producer and, within a reasonable period time following submission of such Plans, shall either approve or not approve the Work as presented in the applicable Plan. In the event the County Engineer does not approve the Pole/line Plan or any other Plan, the County Engineer shall issue written instructions to the Producer with any additional information or modifications which are reasonably required by the County Engineer with respect to the Pole/line Plan or any other Plan, including the imposition of any reasonable and practical terms and conditions as the County Engineer considers in the best interest of the Corporation in its capacity as custodian of the Highways. The Parties agree to work together in good faith to consider any amendments to the Pole/line Plan or any other Plan which may be required by the Corporation provided such amendments comply with Applicable Laws. The Producer shall not undertake Work of any kind until they are in receipt of the Approved Plan or amended Approved Plan, as the case may be, except as otherwise consented to in advance by the County Engineer.

Compliance with Approved Plan

 Producer agrees to commence, perform and complete the placement, installation, construction, re-construction, inspection, maintenance, operation, alteration, enlarging, repairing, replacing, relocating and removing the Pole/line System in compliance with the Approved Plan for the Pole/line System, provided there is no material impact on (i) the safety or operation of the Highways or (ii) other existing Highway users, in accordance with current engineering and industry standards or unless otherwise approved by the County Engineer, acting reasonably.

Other Conditions

13. In connection with Works undertaken by the Producer:

- (a) except as set out in an Approved Plan, the Producer will not cut, trim or interfere with any trees on the Highways without first obtaining the specific written approval of the County Engineer; and
- (b) wherever the Pole/line System is carried across any open drainage ditch, it shall be carried either wholly under the bottom thereof or above the top thereof, so as not to interfere with the carrying capacity of such ditch.

Dust Control

14. The Producer agrees to take adequate steps to control dust on all Highways. For the avoidance of doubt, Producer is not permitted to and shall not be required to use brine or certain chemical solutions on the Highways.

No Unnecessary Interference with Highways

15. In the placing, maintaining, operating and repairing the Pole/line System or any part thereof the Producer will use care and diligence to ensure that there will be no unnecessary interference with the Highways, or any other municipal works or improvements. If any additional municipal works or improvements are made necessary by reason of any work done or omitted to be done by the Producer, in order to maintain safe operation of the Highways in the normal course, they will be constructed by the Producer at its own expense for the Corporation. The Producer acknowledges that it may be required to obtain permits from the Corporation prior to commencing the Works under this Agreement, and to comply with any and all reasonable conditions imposed on the issuance of the said permits, which may require providing any traffic plans that may be necessary in the sole discretion of the County Engineer.

Required Highway Upgrades & Maintenance

16. In the event that the standard condition or maintenance of any of the Highways is not sufficient to permit the Producer to carry out its desired operations, the Producer shall be solely responsible for carrying out any required remedial work or maintenance required to upgrade or maintain the Highway or Highways, at its own expense. The Producer shall not carry out any such remedial work or maintenance without first obtaining approval of the County Engineer, not to be unreasonably withheld or delayed. For the purposes of this Section "remedial work or maintenance" does not include snow clearing, salting or other such seasonal maintenance.

Other Approvals

17. The Producer further agrees that, prior to commencement of any Work pursuant to this Agreement, it shall obtain all required permits and approvals which are required pursuant to any Applicable Laws (including, where necessary, the approval of any federal, provincial, or agency (if any), and the Corporation) in order to commence and undertake the Work in question. Furthermore, the Producer shall notify any other person or body of which it is aware or otherwise notified by the Corporation which is operating any equipment, installations, utilities or other facilities, within the Highways where such Work is to be conducted, of the details of the anticipated work so as to minimize the potential interference with or damage to such existing equipment, installations, utilities, and other facilities by the said work and so as to maintain the integrity and security thereof. The Corporation shall undertake reasonable efforts to provide notice to the Producer of any persons or utilities that is performing work or has equipment, or has notified the Corporation of its plans to perform work or place equipment, in the Highways or in the vicinity of the Highways as at the commencement of the Works.

Highways

- 18. Both the Corporation and the Producer acknowledge that the Highways shown on Schedule "A-1" and listed on Schedule "A-2", and only such Highways, are authorized for use by the Producer, its agents and/or contractors, for the Deliveries.
- The Producer agrees to ensure that all vehicles carrying out the Deliveries use only those Highways shown on Schedule "A-1" and listed on Schedule "A-2".
- 20. If and to the extent that the Producer, or its agents and/or contractors wishes, after the commencement of the Work, to use any additional Highway(s) not reflected on Schedule "A-I" and listed on Schedule "A-2", the Producer shall request and obtain the prior approval of the County Engineer for such intended usage, such approval not to be unreasonably withheld or delayed.
- Prior to using any additional Highway after the commencement of the Work, as provided in Section 20 above, the Producer shall ensure that such Highway is added to the Preliminary Highway Condition Report.
- 22. (a) In the event it becomes necessary, following the initial construction of the Project, for the Producer to transport parts or materials for the construction, repair, addition to, replacement or decommissioning of any part of the Pole/line System or the Project,

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the Producer shall be required to obtain all of the necessary permits from the Corporation to do so, including posting any securities required pursuant to such permits, and to comply with any reasonable conditions that may be required or imposed by the Corporation at that time.

- (b) The Producer hereby agrees to comply with the provisions of By-law 26-2002, as amended, which By-law imposes weight restrictions on the Highways during the months of February, March and April. Notwithstanding the foregoing, the Corporation may, immediately following its approval of the Pole/line Plan or other Plan and the delivery of the Security referred to Section 34 of this Agreement, provide to the Producer written confirmation that, during the construction of the Project, the Producer, its agents and/or contractors, shall not be required to comply, in respect of the Highways, with the reduced load restrictions set out in the said Bylaw.
- (c) In the event, after the commencement of construction of the Works, the Corporation determines that any portion of a Highway shown on *Schedule "A-1"* and listed on *Schedule "A-2"* can no longer be used for Deliveries due to an unforeseen event beyond the Corporation's control, the Corporation shall give written notification to the Producer of its intention to remove such portion of the affected Highway from the applicable Approved Plan and the Corporation and the Producer agree to work together acting reasonably and in good faith to determine an alternative highway for the purpose of Deliveries.

Tree Work

- 23. In the event that the Producer, acting reasonably, deems it necessary for the purposes of undertaking and completing the Work, to perform any Tree Work not detailed on the applicable Approved Plan, the Producer shall be entitled to conduct the necessary Tree Work upon receipt of the prior written approval of the County Engineer.
- 24. In the event that trees are removed from within the Highways, the Producer agrees, at its sole expense, to remove any residual tree stumps to a level below grade and to restore and remediate the surface of the Highway at an even grade.
- 25. In the event that Tree Work involves removal of trees from the Highways, the Producer shall, unless directed otherwise by the County Engineer, replace such trees with trees, of at least 60mm caliper, at the Producer's sole expense, in accordance with the following protocol and to the satisfaction of the Corporation:
 - (a) Trees below 7.5 cm dbh (diameter at breast height) will not be replaced;
 - (b) Trees 7.5 cm dbh or greater but less than 15 cm dbh will be replaced at a ratio of two
 (2) trees for each tree removed;

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- (c) Trees 15 cm dbh or greater but less than 30 cm dbh will be replaced at a ratio of three
 (3) trees for each tree removed; and
- (d) Trees greater than 30 cm dbh will be replaced at a ratio of five (5) trees for each tree removed;
- (e) The locations for the replacement trees shall be determined by the Corporation.

Preliminary Highway Condition Report

- 26. The Parties shall jointly identify and engage, at the Producer's sole expense, a consulting engineer (the "Consulting Engineer") to inspect the Highways and prepare a report (the "Preliminary Highway Condition Report"), which report shall include, without limitation:
 - (a) the identification of all Highways that will or may be subject to damage in connection with the construction of the Pole/line System and/or the use the Highways for the Deliveries;
 - (b) an evaluation and record, based upon both visual inspections, including photographs and/or video recordings, and falling weight deflectometer load/deflection testing of the preliminary condition of the Highways that have been identified as part of the Haul Route; and
 - (c) an evaluation of the existing load carrying capabilities of the existing treated surface (tar and chip) and asphalt paved Highways that have been identified.
- 27. Draft and final copies of the Preliminary Highway Condition Report shall be provided to the Producer and the Corporation as soon as they become available and the Producer shall be afforded an opportunity to comment on the draft Preliminary Highway Condition Report before it is finalized. The draft Preliminary Highway Condition Report shall be subject to the approval of the Corporation, not to be unreasonably withheld, after which final copies of the said Report shall be provided to both the Producer and the Corporation.

Final Highway Condition Report

- 28. Within ten (10) days of completion of the Initial Deliveries and the Initial Construction Work, the Producer shall notify the Corporation in writing that such Initial Deliveries and Initial Construction Work is complete and the Corporation shall then instruct the Consulting Engineer to conduct a further inspection, using the same methodologies employed in producing the Preliminary Highway Condition Report, and provide a supplementary report (the "Final Highway Condition Report"), at the Producer's sole expense, which Final Highway Condition Report shall include, without limitation:
 - (a) the identification of those portions of the Highways that, in the opinion of the Consulting Engineer, acting reasonably with reference to the Preliminary Highway Condition Report, have been damaged by the Producer (taking into consideration normal wear and tear during the Term that would have been likely to occur in any event), its agents and/or contractors during the Initial Construction Work and/or the use of the Highways for the Initial Deliveries; and

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- (b) with respect to the portions of the Highways identified as having been determined to have been damaged pursuant to Subsection 28(a) above, identification of the extent of repairs, replacements or remedial work that would be necessary to repair or replace such Highways or otherwise restore such Highways to a condition that is the same or better than the condition demonstrated by the Preliminary Highway Condition Report.
- 29. The Parties shall use reasonable efforts to ensure that the Final Highway Condition Report is completed not later than thirty (30) business days following receipt by the Corporation of the notice of completion of both the Initial Deliveries and the Initial Construction Work provided pursuant to Section 28 above. Notwithstanding the foregoing, the Final Highway Condition Report shall not be deemed complete or final until the Producer has had the opportunity to review and comment on same and the Consulting Engineer has had the opportunity to consider and adopt, where reasonably appropriate, the comments of the Producer with respect to such report.

Producer's Duty Regarding Damaged Highways

30. The Producer shall well and sufficiently restore, to the reasonable satisfaction of the County Engineer with reference to the Final Highway Condition Report, all Highways and property that it may damage during the course of the Initial Construction Work and the Initial Deliveries, and shall make good any settling thereafter caused by such damage. The Producer will be responsible for all costs associated with the repair of any Highways damaged by the Producer or its employees, agents or contractors as a result of the Initial Construction Work and the Initial Deliveries, in accordance with the process set out herein and as determined by the County Engineer, acting reasonably. Such restoration shall be equal to or better than the condition of the said Highway as it was in existence on the said Highway before the excavation or interference commenced. If the Producer fails at any time to do, or commence and complete, any of the required work within a reasonable period of time following notification by the Corporation (having regard to the nature of the required work), the Corporation may do or may cause such work to be done and the Producer shall, on demand, pay any and all costs therefor as certified by the County Engineer. The required restoration works shall be performed by the Producer in accordance with the recommendations contained in the Final Highway Condition Report.

Additional Repairs

31. Twelve (12) months following completion of the road repairs identified in the Final Highway Condition Report, the Parties shall jointly inspect the said repairs to confirm that the repairs were properly completed. If, following such joint inspection, the Parties agree that no additional repair is required, the Corporation shall immediately return the Second LC. If, however, the said repairs require further repair as a result of having been improperly

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completed, and not as a result of the use of the Highways by third parties subsequent to the completion of the said repairs, the Producer shall complete such additional repairs forthwith ("Additional Repairs"). Following the completion of the Additional Repairs to the satisfaction of the County Engineer, acting reasonably, the Corporation shall immediately return the Second LC to the Producer.

Ongoing Highway Monitoring

32. During the period(s) that the Highways are in use by the Producer for the Deliveries, the Consulting Engineer shall, at the sole expense of the Producer, carry out inspections in respect of those Highways being used by the Producer and such inspections shall be carried out with such frequency as is reasonably required having regard to the frequency and nature of the such use by Producer. Summary reports will be provided to the Producer and the Corporation on a timely basis outlining the condition of the Highways and any urgent repair requirements.

Urgent Highway Repairs

During the time the Work is underway, the Corporation may give written notice to the 33. Producer that urgent repairs are required to a Highway in order to maintain the Highway in a passable condition for the everyday traffic load or to remove a material and adverse safety risk or to prevent imminent harm to users of such Highway in the normal course; provided that such repairs are required as a direct result of the Producer's use of such Highway. The need for such repairs shall be determined by the County Engineer, acting reasonably and based upon the advice of the Consulting Engineer. If the urgent repairs are not completed by the Producer within twenty-four (24) hours of the sending of written notice by the Corporation to the Producer or, if the emergency repairs cannot be completed within such twenty-four (24) hour period, the Producer does not commence to diligently perform the urgent repairs within such twenty-four (24) hour period, the Corporation may perform the emergency repairs at the Producer's sole expense and the Producer shall pay the Corporation's invoice(s) for such urgent repairs immediately upon receipt. If the Producer fails to pay any invoice submitted by the Corporation for urgent repairs within thirty (30) days of receipt, the Corporation shall be entitled to draw upon the Security filed pursuant to this Agreement to recover the full amount of the unpaid invoice(s).

Security Deposit

34. Prior to making any use of the Highways for the purposes described in this Agreement, the Producer shall provide the Corporation with an irrevocable letter of credit as security for the Producer's performance of its obligations under this Agreement. The letter of credit shall be in a form acceptable to the Corporation, acting reasonably, and shall be in an amount of SEVEN HUNDRED AND FIFTY THOUSAND DOLLARS (\$750,000.00) (the "First LC"). Upon completion of the repairs identified in the Final Highway Condition Report to

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the reasonable satisfaction of the County Engineer, the Corporation shall immediately return the First LC to the Producer and the Producer shall, at the same time, provide a second irrevocable letter of credit, substantially in the same form as the First LC, in the amount of **TWO HUNDRED THOUSAND DOLLARS (\$200,000.00)** (the "Second LC", and collectively referred to with the First LC as, the "Security").

Security Terms

- 35. The Security to be provided under this Agreement shall be held by the Corporation on the following terms:
 - (a) The Producer acknowledges and agrees that the Corporation reserves the right to draw on and use the proceeds from the First LC to complete repairs required to be done by the Producer under Section 30 (Producer's Duty Regarding Damaged Highways) and Section 33 (Urgent Highway Repairs) herein. With respect to the Producer's obligations pursuant to Section 30, the Corporation may draw upon the First LC if the Producer has not completed such repairs within twenty (20) business days from the date of the written notice from the Corporation or, if such repairs cannot be completed with such twenty (20) business days, the Producer does not commence to diligently perform such repairs within such twenty (20) business day period, and proceeds to complete the said repairs within a reasonable time thereafter as determined by the County Engineer.
 - (b) The Producer acknowledges and agrees that the Corporation reserves the right to draw on and use the proceeds from the Second LC to complete repairs identified in Section 31 (Additional Repairs) provided the Parties have first agreed on the repairs to be performed by the Producer and the Producer has not completed such repairs within ten (10) business days from the date of the written notice from the Corporation or, if such repairs cannot be completed with such ten (10) business days, the Producer does not commence to diligently perform such repairs within such ten (10) business day period, and proceeds to complete the said repairs within a reasonable time thereafter as determined by the County Engineer. Upon the completion of the repairs identified in Section 31 (Additional Repairs) to the reasonable satisfaction of the County Engineer, the Corporation shall immediately return the Second LC.
- 36. If the Producer fails to perform any of its other obligations under this Agreement, the Corporation shall be entitled to realize on the Security in accordance with this Agreement in order to fulfill those obligations in respect of which the Producer is in default.

Indemnification

37. The Producer will indemnify and save harmless the Corporation, its Councillors, Officers, employees, legal counsel, agents and contractors from and against all claims, suits, demands, liabilities, losses, costs, damages or other expenses of every kind that the Corporation may

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incur or suffer as a consequence of or in connection with the placing, maintenance, operation or repair of the Pole/line System or any part thereof, or as a consequence of the Deliveries, or in any other way related to the rights granted hereunder, except to the extent such claims, liabilities, losses, costs, damages and other expenses are caused by the Corporation's negligence or breach of this Agreement.

Environmental Liability

- 38. The Corporation is not responsible, either directly or indirectly, for any damage to the natural environment or property, including any nuisance, trespass, negligence, or injury to any person, howsoever caused, arising from the presence, deposit, escape, discharge, leak, spill or release of any hazardous substance in connection with the Producer's occupation or use of the Highways, unless such damage was caused directly or indirectly by the negligence or wilful misconduct of the Corporation or those for which it is responsible in law.
- 39. The Producer agrees to assume all environmental liabilities, claims, fines, penalties, obligations, costs or expenses whatsoever relating to its use of the Highways, including, without limitation, any liability for the clean-up, removal or remediation of any hazardous substance on or under the Highways that result from:
 - (a) the occupation, operations or activities of the Producer, its contractors, agents or employees or by any person with the express or implied consent of the Producer within the Highways; or
 - (b) any Works brought or placed within the Highways by the Producer, its contractors, agents or employees or by any person with the express or implied consent of the Producer;

unless such environmental liabilities (including, without limitation, any liability for the clean-up, removal or remediation of any hazardous substance) were caused directly or indirectly in whole or in part by the negligence or wilful misconduct on the part of the Corporation or those for which it is responsible in law.

Force Majeure

40. If either Party is prevented from carrying out its obligations under this Agreement by reason of any cause beyond its control, such Party shall be relieved from such obligations while such inability continues; provided, however, that this Section 40 shall not relieve the Producer from any of its obligations to indemnify the Corporation as contemplated herein, and provided further that nothing herein shall require either Party to settle any labour or similar dispute unless it is in the best interests of such Party to do so.

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41. The Corporation agrees that in the event of the permanent closing of any of the Highways as shown on Schedule "A-1" and listed on Schedule "A-2" to this Agreement, the Corporation shall give the Producer reasonable notice of such closing. If the Corporation deems it is practical to do so, the Corporation will use its best efforts to provide the Producer with an easement over that part of the closed Highway so as to allow the Producer the ability to preserve any part of the Pole/line System in its then existing location, and to enter upon the closed Highways to maintain and repair such part of the Pole/line System. In addition, the Corporation agrees that Producer may request that the Corporation temporarily close or restrict access to portions of the Highways, and only where necessary, for the purposes of public safety or completing any of its Work in connection with the Project as contemplated herein. Any such requests for temporary Highway closures or restrictions shall be based on bona fide requirements of the Project.

Abandonment and Relocation

- 42. In the event that:
 - (a) the Producer abandons the Pole/line System or any part thereof during the Term of this Agreement, or the Pole/line System has not been in actual use for the distribution or transmission of electricity for a continuous period of one (1) year; and
 - (b) the Producer is not taking reasonable steps (as determined by the Corporation acting reasonably) to continue to use the Pole/line System for the purpose of the distribution or transmission of electricity, and the reason for such non-use is not due to circumstances outside the reasonable control of the Producer (as determined by the Corporation acting reasonably),

then the Producer shall give written notice to the Corporation that the said Pole/line System has been abandoned. Upon the giving of such notice, this Agreement shall be terminated and the Producer shall comply with the decommissioning requirements set out in Section 47 of this Agreement.

43. If the Corporation, pursuant to a plan approved by the Council of the Corporation, requires any part of the Collector System to be relocated because the Collector System is determined to materially and adversely interfere with the construction, reconstruction and/or operation of facilities, infrastructure or improvements owned or to be owned and operated by the Corporation, then upon receipt of reasonable notice in writing from the Corporation specifying the portion of the Collector System that interferes with the plans of the Corporation, subject to the provisions of this Section 43 and any regulatory or permitting requirements, the Producer shall alter or relocate such part of the Collector System at the point specified to a location designated by the County Engineer within a reasonable period of time. The foregoing obligations of the Producer shall be conditional upon the following: (i) the Corporation shall offer an alternate location for all portions of the Collector System to be

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relocated in accordance with this Section and such alternate location shall be technically feasible (as reasonably determined by the Producer) and shall allow for the construction and operation of the Collector System in a manner compliant with all Applicable Laws; and (ii) the costs of such relocation shall be borne as follows:

- for the period which is five (5) years from the Effective Date, the Corporation shall bear 100% of the costs of any relocation; and
- (ii) for the period commencing on the day after the fifth (5th) year of the Term and for the remainder of the Term, the Producer shall bear 100% of the costs of any relocation.

The Corporation will use its best efforts not to require the Collector System, or any part thereof, to be moved within five (5) years of the Effective Date. Notwithstanding anything to the contrary, in the event the Producer requires any part of the Collector System to be relocated (which relocation shall require the prior approval of the Corporation, not to be unreasonably withheld or delayed), the Producer shall bear 100% of the costs of any relocation.

- If the Corporation, pursuant to a plan approved by the Council of the Corporation, requires any 44. part of the Transmission System to be relocated because the Transmission System is determined to materially and adversely interfere with the construction, reconstruction and/or operation of facilities, infrastructure or improvements owned or to be owned and operated by the Corporation, then upon receipt of reasonable notice in writing from the Corporation specifying the portion of the Transmission System that interferes with the plans of the Corporation, subject to the provisions of this Section 44 and any regulatory or permitting requirements, the Producer shall alter or relocate such part of the Collector System at the point specified to a location designated by the County Engineer within a reasonable period of time. The foregoing obligations of the Producer shall be conditional upon the following: (i) the Corporation shall offer an alternate location for all portions of the Transmission System to be relocated in accordance with this Section and such alternate location shall be technically feasible (as reasonably determined by the Producer) and shall allow for the construction and operation of the Transmission System in a manner compliant with all Applicable Laws; and (ii) the costs of such relocation shall be borne as follows:
 - (i) for the period which is five (5) years from the Effective Date, the Corporation shall bear 100% of the costs of any relocation; and
 - (ii) for the period commencing on the day after the fifth (5th) year of the Term and for the remainder of the Term, the Producer shall bear 90% of the costs of any relocation and the Corporation shall bear 10% of the costs of any relocation.

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The Corporation will use its best efforts not to require the Transmission System, or any part thereof, to be moved within five (5) years of the Effective Date. Notwithstanding anything to the contrary, in the event the Producer requires any part of the Transmission System to be relocated (which relocation shall require the prior approval of the Corporation, not to be unreasonably withheld or delayed), the Producer shall bear 100% of the costs of any relocation.

Emergency

45. In the event of an emergency involving the Pole/line System, the Producer shall notify the responsible police force immediately upon becoming aware of the situation and shall do all that is necessary and desirable to control the emergency, including such work in and to the Highways as may be required for the purpose. As soon as reasonably possible after the emergency is discovered, the Producer shall advise the County Engineer by telephone and shall keep him advised throughout the emergency. The Producer shall reimburse the Corporation for any and all costs incurred in connection with the emergency. Forthwith after it has become necessary for the Producer to exercise its emergency powers under this Section, the Producer shall produce a written report to the County Engineer of what work was done and the further work to be undertaken, if any, and seek the approval of the County Engineer for the further work as contemplated in the preceding Sections.

Locating Pole/line System in Highways

- 46. The Producer agrees that, throughout the Term of this Agreement it shall, at its own cost, record and maintain adequate records of the locations of the Pole/line System. If requested by the Corporation, the Producer shall, at its own cost, physically locate the Pole/line System by marking the applicable Highway using paint, staking or other suitable identification method ("Locates"), under the following circumstances:
 - (a) in the event of an emergency, within two (2) hours of receiving the request or as soon as practicably possible, following which the Corporation will ensure that it has a representative on site (or alternatively, provide a contact number for its representative) to ensure that the area for the Locates is properly identified; and
 - (b) in all other circumstances, within a time reasonably agreed upon by the Parties.

The Producer agrees to respond within sixty (60) days to any request from the Corporation for a mark-up of Pole/line System design drawings showing the location of any portion of the Pole/line System located within the portion of the Highways shown on the plans (the "Mark-ups") and shall provide such accurate and detailed information as may be reasonably required by Corporation.

Decommissioning

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47. Upon the expiry or earlier termination of this Agreement, the Producer shall, within twelve (12) months of such expiration or termination, take down, dismantle and remove the Pole/line System from the Highways at its sole liability and expense; provided that the County Engineer shall be entitled to notify the Producer that the Corporation would like to retain all or a portion of the Pole/line System which are located either below grade or above grade and upon receiving such notification the Producer shall be under no obligation to remove the components of the Pole/Line System identified in the aforementioned notice. In the event the County Engineer does not require the removal of any component of the Pole/line System (whether below grade or above grade) as contemplated above, at the expiration or termination of this Agreement title to such components of the Pole/line System shall immediately vest to the Corporation without the need for any further action to be taken by either Party. Prior to removing any portion of the Pole/line System, the Producer shall obtain the necessary permits from the Corporation to do so, and shall comply with any and all conditions imposed on the issuance of the said permits. Furthermore, should the Province of Ontario or Canada impose any regulatory or legislative decommissioning requirements greater than described above, the Producer undertakes to comply with the same. The Parties acknowledge and agree that upon the Producer implementing the decommissioning as aforesaid, such decommissioning may require the Producer to transport parts, materials, goods and equipment on Highways under the jurisdiction of the Corporation. The Producer therefore shall prior to decommissioning any part of the Project, obtain the prior written consent of the County Engineer, not to be unreasonably withheld or conditioned, to the use of any of the Highways under the jurisdiction of the Corporation. The Parties hereto further acknowledge and agree that the provisions of this Section 47 will survive the termination of this Agreement for the period required for such decommissioning of the Project.

Applicable Laws

 It is acknowledged and agreed by the Parties that this Agreement is subject to the provisions of all Applicable Laws.

Notices

49. Any notice to be given under any of the provisions hereof may be given to the Corporation by delivering the same to the Clerk of the Corporation or by sending the same by facsimile transmission to (519) 776-4455 or by registered mail, postage prepaid, addressed to the attention of the Clerk of the Corporation at 360 Fairview Avenue West, Suite 202, Essex, Ontario N8M 1Y6, and to the Producer by delivering the same to its head office, or by sending the same to its business office by facsimile transmission, registered mail, postage prepaid, addressed to the Producer as follows:

SP Belle River Wind LP c/o Samsung Renewable Energy Inc. 2050 Derry Road West 2nd Floor Mississauga, ON L5N 0B9 Attention: President

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Fax: (905) 285-1852

and to

SP Belle River Wind LP c/o Pattern Energy Group LP Pier 1, Bay 3 San Francisco, CA 94111 United States Attention: General Counsel Fax: (415) 362-7900

If any notice is sent by facsimile transmission, the notice shall be deemed to have been given on the next business day following its transmission. If any notice is sent by mail, the same shall be deemed to have been given on the fourth (4^{th}) day next following the posting thereof, provided that in the event of a disruption in postal service, either at the point of mailing or the point of delivery, any notice sent by mail shall be deemed to have been given on the day when it is actually received by the addressee of such notice.

Assignment

- 50. The Producer may not assign any part of this Agreement without the written consent of the Corporation, which consent shall not be unreasonably withheld. The Producer acknowledges that any proposed assignee shall be required to covenant, in favour of the Corporation, to assume full responsibility for this Agreement. Notwithstanding the foregoing:
 - (a) the Producer shall be able to assign this Agreement (or a relevant portion thereof), and all of its rights, privileges, interests and benefits therein, without the prior consent of the Corporation (i) to a third-party or any subsidiary or affiliate (as those terms are used in the Business Corporations Act (Ontario)) provided that such party also becomes the owner of the Project (or the relevant portion thereof), and (ii) to its lender(s) and its/their agent (and successors and assigns) or anyone to whom the Producer has granted security or provided a guarantee in respect of the Project (herein referred to collectively as the "Lenders" and individually as the "Lender") and, without the Lender being required to assume the full responsibility of this Agreement except to the extent set forth in Section 4 of the form of Acknowledgement and Consent Agreement attached hereto as Schedule "D";

(b) provided that they are not in default in any of the Producer's or their obligations under this Agreement, the Lender(s) or any of them, at their sole discretion, shall be able to assign this Agreement, and all of its rights, privileges, interests and benefits arising therein, to any persons in connection with the enforcement of its security granted to the Secured Parties related to the Project including, without limitation, an assignment to any receiver, manager or agent of the Secured Parties. The Corporation shall, promptly upon the request of the Producer, execute and deliver the Acknowledgement and Consent Agreement in favour of such Lender(s) or assignee thereof in the form attached hereto as *Schedule "D*"; Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 21 of 43

- (c) no assignment by either the Corporation or the Producer shall be effective unless and until the assignee executes a counterpart of this Agreement agreeing to be bound by the terms hereof to the same extent as if it had been an original party hereto, provided that such requirement shall not apply to any assignment to any Lender; and
- (d) upon a permitted assignee executing a counterpart of this Agreement agreeing to be bound by the terms hereof, the assignor shall be released from any and all obligations under this Agreement from and after the date of such assignment.

Insurance

- 51. The Producer shall procure and maintain public Liability Insurance and shall file with the Corporation, together with the Agreement executed by it the required information on Insurance Bureau of Canada Form IBC 2100 dated 03-2005, or such substantially similar form as may be acceptable to the Corporation, in its sole discretion. The Liability Insurance shall:
 - (a) be comprised of primary and/or umbrella coverage with a Ten Million Dollars \$10,000,000 per occurrence limit of liability with not less than a Ten Million Dollars \$10,000,000 aggregate;
 - (b) include Commercial General Liability Insurance covering all operations and liability assumed under this Agreement with the Corporation. The Commercial General Liability Insurance Policy shall be written on an occurrence form and include:

Premises and Operations

Products and Completed Operations

Blanket Contractual

Broad Form Property Damage

Contingent Employer's Liability

Cross Liability

Severability of Interests

Owners and Contractors Protective (this requirement may be satisfied by the Producer procuring the insurance required in this Section 51 and also by requiring its contractors to carry insurance in accordance with the requirements herein)

Personal Injury

Employer's Liability

Employees as additional insureds

Non-owned Automobile including OEF #96

Hostile Fire

Attached Machinery

Third Party Environmental Liability;

(c) if the Works are to include shoring, underpinning, etc. the policy must not contain any exclusions with respect to the intended works. A copy of the endorsement or a

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letter from the insurer verifying coverage is to accompany the Certificate of Insurance;

- (d) include insurance against liability for bodily injury and property damage caused by vehicles owned and/or operated by the Producer and used in conjunction with the Works either within or outside the terms of this Agreement, and shall have a limit of liability of not less than \$5,000,000.00 inclusive for any one occurrence;
- (e) include an Equipment Floater in sufficient amount to provide full coverage for the Producer's Equipment that may be located on the Corporation's lands, from time to time, throughout the duration of this Agreement;
- (f) be endorsed to provide that the policy or policies will not be altered, cancelled or allowed to lapse without thirty (30) days prior written notice to the Corporation. This notice shall be filed with the County Engineer, Department of Engineering, 360 Fairview Avenue West, Suite 201, Essex, Ontario N8M 1Y6, Fax: 519-776-4455; and
- (g) be endorsed to include the Corporation as an additional insured.

Record Drawings

52. The Producer shall provide two (2) copies of "as constructed" drawings of the Pole/line System for the records of the Corporation plus a final electronic copy (CD ROM or DVD) prepared in an AUTOCAD, CAD or GIS environment, prior to release of any deposits or securities (including the Security). The Producer shall also, from time to time and as required, update the aforementioned drawings and final electronic copy to reflect any relocation, alteration, addition to or replacement of any portion of the Pole/line System.

Identification of Pole Line

53. The Pole/line System shall be posted at all times, at the expense of the Producer, after completion of installation, so as to identify it as a Pole/line System owned and maintained by the Producer, together with the Producer's maintenance and emergency contact information.

Breach by Producer

54. If the Producer commits a breach of or otherwise fails to comply with any of the provisions of this Agreement, the Corporation shall give to the Producer notice in writing specifying the breach complained of. In the event the Producer fails to remedy such breach within sixty (60) days of receipt of such notice (or such longer period of time having regard to the nature of the breach in which event the Producer shall have commenced and is diligently continuing to remedy same), the Corporation shall have the right (but not the obligation) to terminate this Agreement and the Producer shall deactivate the Pole/line System, and all other

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obligations of the Producer hereunder shall continue under this Agreement until all of such obligations have been complied with and completed in full.

Dispute Resolution

- 55. Any controversy, dispute, difference, question or claim arising between the Parties hereto in connection with the interpretation, performance, construction or implementation of this Agreement that cannot be resolved by the County Engineer and a representative of the Producer (collectively "Dispute") shall be settled in accordance with this clause. The aggrieved Party shall send the other Party written notice identifying the Dispute, the amount involved (if any) and the remedy sought, and invoking the procedures of this clause. The *Vice-President and C.O.O.* of the Producer and C.A.O. and County Engineer of the Corporation shall confer in an effort to resolve the Dispute. If the Parties are unable to resolve the Dispute, then the Parties may submit the Dispute to mediation. If the Parties submit the Dispute to mediation as aforesaid and are unable to resolve the said Dispute through mediation, the Parties may pursue any other remedies available to them at law.
- 56. Except to the extent that a matter is specifically the subject of a Dispute, both Parties shall continue to observe and perform the terms and conditions of this Agreement pending the resolution of a Dispute.

Costs and Permit Fees

- 57. The Corporation acknowledges and agrees that Schedule "E" attached hereto is a list of fees and charges associated with permits which may be requested and issued by the Corporation in respect of the Deliveries and the Works contemplated by this Agreement and that the information contained therein is true and accurate as at the Effective Date. The Producer undertakes and agrees to pay such fees and charges in accordance with Schedule "E".
- 58. The Producer shall be responsible for the following payment obligations (for clarity, the maximum aggregate reimbursement limits set out below are not intended to cover costs related to the decommissioning of the Project):
 - (a) Prior to the commencement of the Entrance Work, the Producer agrees to deposit a certified cheque or wire transfer in the amount of ONE THOUSAND TWO HUNDRED AND FIFTY DOLLARS (\$1,250.00) (the "Entrance Work Deposit") for each Entrance to be constructed as part of the Project as security for the repair or remediation of all conditions and disturbances arising from such construction that are unsatisfactory to the Corporation. The Producer shall rectify every such condition or disturbance upon receipt of written notice from the Corporation failing which the Corporation may use the aforementioned deposit to do so. Upon satisfactory

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completion of the Entrance Work by the Producer, as determined by the Corporation acting reasonably, the Corporation shall immediately return the Entrance Work Deposit to the Producer less a non-refundable portion of **Two Hundred and Fifty Dollars (\$250.00)**.

- (b) A non-refundable payment in the amount of TEN THOUSAND DOLLARS (\$10,000) (the "Field Locate Fee") shall be paid to the Corporation by the Producer within thirty (30) days of the execution of this Agreement by the Parties. The Field Locate Fee shall be paid to the Corporation in consideration of additional administrative costs incurred by the Corporation in assisting with the determination of the actual location of the Pole/line System in the field.
- (c) The Producer shall reimburse the costs and expenses incurred by the Corporation in connection with the engagement of the Consulting Engineer for the full-time inspection of the Highways during their use by the Producer for the Deliveries pursuant to Section 32 of this Agreement, at an hourly rate of \$85.00 dollars per hour, (exclusive of any applicable taxes) unless otherwise agreed between the Producer and the Corporation in writing. The Producer shall provide the Corporation prior written notice of construction activity and Deliveries and, for certainty, the Consulting Engineer shall only be permitted to incur costs at such times when construction activities and/or Deliveries are actually occurring. Notwithstanding the foregoing, in the event the Producer undertakes Deliveries outside of the period(s) indicated in the aforementioned notice(s) then in such event the Consulting Engineer shall be entitled to incur costs in respect of such additional Deliveries.

(d) Upon the presentation of invoices, the Producer shall reimburse the Corporation, within thirty (30) business days of receipt of an invoice from the Corporation, with respect to all reasonable out of pocket costs incurred in connection with the negotiation, preparation, execution and implementation of this Agreement including reasonable legal costs to a maximum aggregate cap of THIRTY THOUSAND DOLLARS (\$30,000.00), unless otherwise agreed by the Parties in writing.

(e) The Producer shall pay an annual administrative fee of FIVE THOUSAND DOLLARS (\$5,000.00) per year to contribute to the administrative expenses of the Corporation in the annual administration of this Agreement. The initial payment shall be due and payable within thirty (30) days of execution of the Agreement with subsequent payments due each January 1 annually for the remainder of the Term. For the initial five (5) year period the annual fee shall be Five Thousand (\$5,000.00) Dollars and on each subsequent five (5) year anniversary, the fee shall be increased by the percentage increase, if any, in the All Canada Consumer Price Index as published by Statistics Canada (or the equivalent index as determined by the Corporation if such index is no longer published) over the same five (5) year period.
(f) The Producer shall pay the following annual fees in respect of the Collector System

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and the Transmission System (pro rated on a per kilometer basis or part thereof):

24

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 25 of 43

- (i) Transmission System or Collector System under one (1) kilometer in length, within the Highway paved or future paved surface, in the amount of SEVEN THOUSAND FIVE HUNDRED DOLLARS (\$7,500.00) per kilometer per year;
- (ii) Transmission System or Collector System longer than one (1) kilometer in length, within the Highway paved or future paved surface, in the amount of TEN THOUSAND DOLLARS (\$10,000.00) per kilometer per year;
- (iii) Transmission System or Collector System under one (1) kilometer in length, within the Highway outside of the paved or future paved surface, in the amount of TWO THOUSAND FIVE HUNDRED DOLLARS (\$2,500.00) per kilometer per year;
- (iv) Transmission System or Collector System longer than one (1) kilometer in length, within the Highway outside of the paved or future paved surface, in the amount of THREE THOUSAND FIVE HUNDRED DOLLARS (\$3,500.00) per kilometer per year.

Number and Gender

 This Agreement shall be construed with all changes in number and gender as may be required by the context.

Covenants

60. All obligations herein contained, although not expressed to be covenants, shall be deemed to be covenants.

Inclusions

61. Whenever a statement or provision in this Agreement is followed by words denoting inclusion or example and then a list of or reference to specific items, such list or reference shall not be read so as to limit the generality of that statement or provision, even if words such as "without limiting the generality of the foregoing" do not precede such list or reference.

Severability

62. The Parties agree that all covenants and conditions contained in this Agreement shall be severable, and that should any covenant or condition in the Agreement be declared invalid or unenforceable by a court of competent jurisdiction, the remaining covenants and conditions and the remainder of the Agreement shall remain valid and of full force and effect.

No Joint Venture, Partnership or Co-ownership

63. The Parties hereby acknowledge and agree that this Agreement is solely a road user agreement and that no relationship is formed between the Parties in the nature of a joint venture, partnership, co-ownership arrangement or other similar relationship.

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Governing Law

 This Agreement shall be interpreted under and is governed by the laws of the Province of Ontario.

Binding Agreement

 This Agreement shall extend to, benefit and bind the Parties thereto, their successors and permitted assigns, respectively. Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 27 of 43

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IN WITNESS WHEREOF the Parties have duly executed this Agreement with effect as of

the Effective Date.

SP BELLE RIVER WIND LP, by its general partner, SP BELLE RIVER WIND GP INC.

Per: Name: Colin Edwards Title: Director

Per: Name: Title:

Heesub Cho Director

We have the authority to bind the Corporation.

THE CORPORATION OF THE COUNTY OF ESSEX

Per: WARDEN - T. BAIN

Per: CLERK BRE

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 28 of 43

28

SCHEDULE "A-1"

to an Agreement dated ______, 2016 between The Corporation of the County of Essex and SP Belle River Wind LP

OVERALL PROJECT MAP SHOWING BOUNDARIES OF PROJECT

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 29 of 43

SCHEDULE A-2

to an agreement dated the day of 2016

BETWEEN

The Corporation of the County of Essex

-and-

SP Belle River Wind LP

County Road 42 from the west limit of Lakeshore Road 111, easterly to east limit of County Road 35, in the Town of Lakeshore, in the County of Essex

County Road 27 from the north limit of County Road 42, southerly to the north limit of King's Highway 401, in the Town of Lakeshore, in the County of Essex

County Road 31 from the north limit of County Road 42, southerly to the north limit of King's Highway 401, in the Town of Lakeshore, in the County of Essex

County Road 31 from the south limit of King's Highway 401, southerly to the south limit of South Middle Road, in the Town of Lakeshore, in the County of Essex

County Road 46 from the west limit of Myers Road, easterly to the east limit of Lakeshore Road 241, in the Town of Lakeshore, in the County of Essex

County Road 35 from the north limit of County Road 42, southerly to the north limit of King's Highway 401, in the Town of Lakeshore, in the County of Essex.

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 30 of 43

30

SCHEDULE "B"

to an Agreement dated _____, 2016 between The Corporation of the County of Essex and SP Belle River Wind LP

ENTRANCE PLAN

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 31 of 43

31

SCHEDULE "C-1"

to an Agreement dated ______, 2016 between The Corporation of the County of Essex and SP Belle River Wind LP

COLLECTOR SYSTEM PLAN

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 32 of 43

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SCHEDULE "C-2"

to an Agreement dated _____, 2016 between The Corporation of the County of Essex and SP Belle River Wind LP

TRANSMISSION LINE PLAN

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 33 of 43

33

SCHEDULE "D"

to an Agreement dated _____, 2016 between The Corporation of the County of Essex and SP Belle River Wind LP

ACKNOWLEDGEMENT AND CONSENT AGREEMENT

This Owner's Acknowledgement and Consent Agreement ("Acknowledgement") is made as of the ________day of _______, 2016 by and between THE CORPORATION OF THE COUNTY OF ESSEX (the "Owner"), [ADMINISTRATIVE AGENT] (the "Agent"), and [COLLATERAL AGENT] (the "Collateral Agent"), pursuant to that certain credit agreement dated _______, 201____ (as amended from time to time, the "Credit Agreement") between, *inter alia*, SP BELLE RIVER WIND LP, by its general partner, SP BELLE RIVER WIND GP INC. (the "Borrower"), the Agent as administrative agent, the Collateral Agent as collateral agent, and the other financial institutions from time to time party thereto, as lenders (collectively, the "Lenders").

WHEREAS:

- A. The Borrower and the Owner entered into a Road Use Agreement dated ______ (the "Agreement") in respect of certain highways and lands owned by the Owner as more particularly described therein (the "Lands"), pursuant to which the Owner has granted to the Borrower, *inter alia*, certain rights in connection with access to municipal roads (the "Rights") on the terms and conditions set out in the Agreement.
- B. Pursuant to, respectively, the Credit Agreement (and documentation delivered in connection therewith), the Agent and Collateral Agent, respectively, have been granted charges, mortgages, assignments and security interests (collectively, the "Security Interests") in all of the property, undertaking, assets, interests, rights and benefits of the Borrower, including without limitation, all of Borrower's right title, estate, interest and equity in the Lands, the Agreement, all rights, privileges, benefits, agreements and interests therein, and all improvements, equipment, structures, chattels, personal property and appurtenance thereto in, on, under or appurtenant to the Lands (collectively, the "Collateral").
- C. The Owner has agreed to execute and deliver this Acknowledgement to the Agent and the Collateral Agent pursuant to the provisions of the Agreement.

NOW THEREFORE in consideration of the sum of Two Dollars (\$2) paid by each of the Agent and the Collateral Agent to the Owner and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Owner hereby acknowledges, covenants and confirms to each of the Agent and the Collateral Agent, as follows:

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- The Owner consents to the creation of the Security Interests and, if required, the registration thereof on the title to the Lands in the applicable land registry office(s).
- 2. The Owner acknowledges that, following an event of default by the Borrower under the Credit Agreement (each, and "Event of Default"), the Agent, the Lenders, the Collateral Agent or the Secured Creditors or any nominee or designee thereof or any receiver or receiver-manager (collectively, an "Agent Party") shall have the right to enforce the Security Interests, including, without limitation, the right to enjoy and enforce the rights of the Borrower under the Agreement and, in the course of the enforcement of such rights, shall be entitled to sell, assign, transfer, negotiate or otherwise dispose of the Agreement, provided that in exercising such rights the Agent Party shall assume all of the liabilities and obligations of the Borrower under or in connection with the Agreement.

The Owner agrees:

- (a) to give each of the Agent and the Collateral Agent written notice (at the addresses below) of any default by the Borrower under the Agreement, concurrent with the delivery of such notice to the Borrower;
- (b) that if the Borrower fails to cure the breach or default identified in such notice, the Agent, the Collateral Agent or any other Agent Party may, but in no way shall be obligated to, cure such default and the Owner shall not terminate the Agreement or exercise any other remedy under the Agreement if the Agent, the Collateral Agent or any other Agent Party within 60 days of the date of receipt of the notice in Subsection 3(a) above by the Collateral Agent is proceeding to cure such breach or default;
- (c) that if any default by the Borrower under the Agreement is not of a curable nature, it shall not exercise any right to terminate if the Agent, the Collateral Agent or any other Agent Party or a nominee thereof agrees to assume the rights and obligations of the Borrower under the Agreement to the extent capable of being assumed;
- (d) that if the Agreement is terminated or surrendered for any reason prior to the expiry of the term thereof, whether as a result of a default by the Borrower thereunder or otherwise, the Owner shall give notice of such termination to each of the Agent and the Collateral Agent and shall offer to enter into a new or replacement agreement (the "Replacement Agreement") with the Agent, the Collateral Agent or another Agent Party or other person designated by, as applicable, the Agent, the Collateral Agent or other Agent Party, which Replacement Agreement shall be upon the same terms and conditions as the Agreement; and
- (e) that if within 30 days of receipt of the notice referred to in item (d) above, the Agent or the Collateral Agent requests a Replacement Agreement, the Owner shall enter into such Replacement Agreement with, as applicable, the Agent, the Collateral Agent or another Agent Party or other person designated by the Agent or the

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 35 of 43

Collateral Agent. Notwithstanding any of the foregoing, the Agent Party confirms and acknowledges that the Owner shall not be liable to the Agent Party for the nondelivery of any notice pursuant to Subsection (a) above.

- 4. The Agent covenants and agrees with the Owner that during any period the Agent exercises its Security Interests and takes possession of the Borrower's interest in the Lands (either directly or indirectly through an Agent Party) or takes control of or manages the Borrower's interest in the Lands or the Collateral or any part thereof, or forecloses upon the Agreement, or succeeds to the interest of the Borrower under the Agreement, it will assume all of the obligations of the Borrower under or in connection with the Agreement during such period, and thereafter observe and perform all of the Borrower's obligations under the Agreement capable of being performed by the Agent.
- 5. The Collateral Agent covenants and agrees with the Owner that during any period the Agent exercises its Security Interests and takes possession of the Borrower's interest in the Lands (either directly or indirectly through an Agent Party) or takes control of or manages the Borrower's interest in the Lands or the Collateral or any part thereof, or forecloses upon the Agreement, or succeeds to the interest of the Borrower under the Agreement, it will assume all of the obligations of the Borrower under or in connection with the Agreement during such period, and thereafter observe and perform all of the Borrower's obligations under the Agreement capable of being performed by the Collateral Agent.
- 6. The Owner confirms and acknowledges that in the event that either the Agent or the Collateral Agent assigns, transfers or otherwise disposes of its interest in the Agreement pursuant to its Security Interests (a "Transfer"), and upon such assignee or transferee covenanting and agreeing in writing with the Owner to assume and perform all of the covenants and obligations of the Borrower pursuant to the Agreement, each of the Agent and the Collateral Agent shall, thereupon and without further agreement, be freed and relieved of all liability with respect to the Agreement from and after the effective date of such Transfer.
- 7. All notices hereunder shall be in writing, sent by registered mail, return receipt requested or by telecopy, to the respective parties and the addresses set forth on the signature page or at such other address as the receiving party shall designate in writing.
- 8. This Acknowledgement may be executed in any number of counterparts, shall be governed by the laws of the Province of Ontario and binds and inures to the benefit of the Agent, and its successors and assigns, the Collateral Agent, and its successors and assigns and shall be binding upon the heirs, personal representatives, successors and assigns of the Owner.

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Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 36 of 43

- 9. Each of the parties hereto agrees to do, make and execute all such further documents, agreements, assurances, acts, matters and things and take such further action as may be reasonably required by any other party hereto in order to more effectively carry out the true intent of this Acknowledgement.
- 10. The provisions of this Acknowledgement shall continue in effect until the Owner shall have received the written certification of the Agent and the Collateral Agent that all amounts advanced, and obligations arising, under the Credit Agreement and all Obligations (as defined in the Credit Agreement) have been paid and performed in full.

IN WITNESS WHEREOF this Acknowledgement is executed by the parties.

THE CORPORATION OF THE COUNTY OF ESSEX

36

Per:	
Name:	
Title:	
Per:	
Name:	
Title:	

We have authority to bind the Corporation.

[ADMINISTRATIVE AGENT]

Address	for	service:

Address for service:

Per:	
Name:	
Title:	
Per:	
Name: Title:	

We have authority to bind the Corporation.

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 37 of 43

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[COLLATERAL AGENT]

Address for service:

Per:			
Name:			
Title:			
Per:			
Name: Title:	-		

ACKNOWLEDGED BY:

We have authority to bind the Corporation.

SP BELLE RIVER WIND LP, by its general partner, SP BELLE RIVER WIND GP INC.

Per:	
Name:	
Title:	
Per:	
Name: Title:	

We have authority to bind the Corporation.

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 38 of 43



SCHEDULE - E

PERMIT FEES AND OTHER CHARGES

1. Permit Fees

Permit Fees and charges shall be as per the most recent County of Essex Permit Fee By-Law

2. Fees not identified in County of Essex Permit Fee By-Law that require Municipal Consent and/or Work Permit

- Installation of Equipment that Requires Excavation in the Right- of-Way (ROW) including buried equipment crossing a road or service drops that cross a road or a break a hard surface of the ROW;
- 2) Installation of aerial Equipment (excluding aerial Service Drops);
- The replacement of existing Above-ground Equipment without adding more Equipment or significantly increasing its size (pole replacements excluded);
- 4) Tree trimming in the ROW.

3. Annual Fees

- For Transmission System or Collector System under one (1) kilometer in length, within the Highway paved or future paved surface, in the amount of \$7,500.00 per kilometer per year (pro-rated).
- 2) For Transmission System or Collector System longer than one (1) kilometer in length within the Highway paved or future paved surface, in the amount of \$10,000.00 per kilometer or part thereof per year (pro-rated).
- 3) For Transmission System or Collector System under one (1) kilometer in length, within the Highway outside of the paved or future paved surface, in the amount of \$2,500.00 per kilometer per year (pro-rated)..
- 4) For Transmission System or Collector System longer than one (1) kilometer in length, within the Highway outside of the paved or future paved surface, in the amount of \$3,500.00 per kilometer or part thereof per year (pro-rated).
- Administrative Fee \$5,000 per year, indexed every five (5) years as set out in the Agreement.
- 4. Producer Payment Obligations Regarding Engineering & Administrative Fees
 - Highway Access Fee \$250 fee plus \$1,000 refundable deposit for each Highway Access
 - 2) Field Locate Fee \$10,000.00 (non-refundable)
 - 3) Engagement of Consulting Engineer \$85 per hour

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 39 of 43

- 4) Out of Pocket Costs (including legal) \$30,000.00 maximum
- 5) Collector System Relocation
 - In first five (5) years from the Effective Date, the Corporation shall bear 100% of the costs of any relocation, as in Clause 43 of the Agreement.
 - Commencing on the day after the fifth (5th) year of the Term, and for the remainder of the Term, the Producer shall bear 100% of the costs of any relocation, as in Clause 43 of the Agreement.
- 6) Transmission System Relocation
 - For the period which is five (5) years from the Effective Date, the Corporation shall bear 100% of the costs of any relocation, as in Clause 44 of the Agreement.
 - 2) For the period commencing on the day after the fifth (5th) year of the Term and for the remainder of the Term, the Producer shall bear 90% of the costs of any relocation and the Corporation shall bear 10% of the costs of any relocation, as in Clause 44 of the Agreement.

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.23, Attachment 1, Page 40 of 43

COST REIMBURSEMENT AND SETTLEMENT AGREEMENT

THIS COST REIMBURSEMENT AND SETTLEMENT AGREEMENT (the "Agreement") made as of this <u>30</u> day of November, 2017 ("Effective Date"), by and between:

THE CORPORATION OF THE COUNTY OF ESSEX

(hereinafter referred to as the "County")

- and-

SP BELLE RIVER WIND LP

(hereinafter referred to as the "**Producer**")

(The County and the Producer shall be referred to individually as "**Party**" and collectively as "**Parties**")

WHEREAS the County and the Producer made and entered into a Road Use Agreement effective as of August 10, 2016 ("RUA") in order to grant to the Producer the right to use certain portions of the road allowances along County roads, including the Highways, owned by the County in connection with a 100 megawatt wind energy generation facility known as the Belle River Wind project developed, constructed, and operated by the Producer and located within the boundaries of the Town of Lakeshore in the County of Essex;

WHEREAS the County wishes to assume the responsibility and undertake the required work to repair, reinstate and restore the Highways with respect to any and all the damages caused by Producer or its contractors up to the Effective Date and Producer wishes to pay the Settlement Amount (as defined below) to the County in accordance with this Agreement;

NOW THEREFORE IN CONSIDERATION the covenants and obligations set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each of the Parties, the Parties hereby covenant and agree as follows:

1. Definition

Terms capitalized and not defined herein have the meanings given to them in the RUA.

2. Work.

(a) The County hereby covenants and agrees that notwithstanding the terms of the RUA, it shall assume sole responsibility for the implementation of all the work related to repair, restoration, reinstatement and/or monitoring of the Damages (as defined below) under the RUA, including without limitation the obligations set forth in Sections 30 to 33 thereof (the "Restoration Work"), and promptly upon execution of this Agreement, the County shall take all actions necessary to arrange for the Restoration Work. For the purpose of this Agreement, the term "Damages" shall mean any damages to the Highways, including but not limited to County Road 31, caused by Producer or its contractors prior to the Effective Date and any damages to the Highways that were not apparent on the Effective

Date but which are inferred from or incidental to the damages caused by Producer or its contractors prior to the Effective Date.

In addition, the Parties hereby confirm that they have mutually agreed to waive any obligations under Sections 28 and 29 of the RUA including those with respect to the Final Highway Condition Report.

- (b) The County acknowledges and agrees that its agreement to carry out the Restoration Work shall be deemed to constitute its assumption of the obligations relating to such work under the RUA related to repair, restoration, reinstatement and/or monitoring of the Highways, including without limitation the obligations set forth in Sections 30 to 33 of the RUA, and, upon payment by the Producer pursuant to Section 3 in this Agreement, Producer shall be deemed to have fulfilled all of its obligation to repair, restore, reinstate and/or monitor the Highways in accordance with the RUA (including Sections 30 to 33 therein).
- (c) In consideration of the payment made by the Producer pursuant to Section 3 in this Agreement, County hereby (i) fully, finally and forever releases, acquits, discharges and hold harmless the Producer and each of its affiliates, Producer's contractors in relation to the Project, the financial lenders of the Producer in respect to the development, construction or operation of the Project and the respective directors, officers, agents, employees, successors and assigns of each of them from all actions, causes of action, claims, disputes, cost, complaints, and demands for payment arising from events, actions, or inactions that occurred on or prior to the Effective Date, whether known or unknown, direct or indirect, potential or actual, at law or in equity, whether contingent or matured, whether in contract, tort or otherwise in connection with or arising out of the RUA (including Sections 30 to 33 therein) including, but not limited to the Damages, Restoration Work and liabilities related to post-construction road repair work performed by the County, including warranty and indemnity obligation related thereto, and (ii) waives the Producer's obligation to provide the Second LC pursuant to Section 34 of the RUA.
- (d) This Agreement shall commence on the Effective Date and shall continue until the expiration or termination of the RUA.

3. Payment and Return of Security

- (a) Producer hereby agrees that the fixed lump sum of Two Hundred Forty-Seven Thousand Dollars (C\$247,000.00), which amount excludes HST, shall be a final settlement amount ("Settlement Amount") payable to the County in accordance with Section 3(b). For greater certainty, Producer shall be responsible only for the Settlement Amount, and Producer shall not be liable for any other taxes, costs, expenses or liabilities of the County including costs related to the administrative work of the staff of the County.
- (b) Within thirty (30) business days after the Effective Date, the County shall issue an invoice to the Producer, requesting the payment of the Settlement Amount plus applicable HST (in the amount of C\$32,110.00) for a total payment of C\$279,110.00. Within thirty (30) business days after the receipt of the invoice, the Producer shall make the payment to the County by wire transfer pursuant to wire transfer instructions provided by the County.
- (c) The obligations of Producer pursuant to this Agreement shall be limited to an obligation

to make payment of the Settlement Amount by the Producer. The County shall assume responsibility for the administration of all payments and contractual arrangements with any service provider who will perform the Restoration Work and shall be solely responsible for the retention of any holdbacks which may be required pursuant to the *Construction Lien Act* (Ontario) and shall remove or discharge any lien that would have an adverse effect to Producer.

(d) Upon receipt by the County of the Settlement Amount, the First LC provided by Producer as security pursuant to Section 34 of the RUA shall be deemed to be released and the County shall return the security to Producer within ten (10) days of the receipt of such payment.

4. Entire Agreement

This Agreement constitutes the entire agreement between the Parties in respect of the subject matter hereof and supersedes all prior negotiations and understandings in respect of the subject matter hereof including the Damages, Restoration Work and Sections 30 to 34 of the RUA. Each of the Parties hereto agrees and confirms that it has not been induced to enter into this Agreement by reason of any representation or warranty of any nature or kind whatsoever.

5. Miscellaneous.

- (a) Notwithstanding any other provisions contrary hereto, the Parties acknowledge and agree that, other than the payment obligation of the Producer set forth in Section 3, there is no liability of Producer whatsoever under this Agreement and/or in relation to the Damages, Restoration Work or the cost-reimbursement and payment under this Agreement, in contract, in tort or otherwise.
- (b) Except as specifically addressed in this Agreement, the provisions and obligations of each Party pursuant to the RUA shall apply and remain unchanged and continue in full force and effect.
- (c) This Agreement shall be governed by the laws of the Province of Ontario and the laws of Canada applicable therein, excluding any laws which would refer a proceeding or interpretation of law to another jurisdiction.
- (d) This Agreement may be executed by facsimile or PDF transmission and in one or more counterparts, all of which shall be considered one and the same Agreement.

(Signature Page Follows)

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives to be effective as of the Effective Date.

THE CORPORATION OF THE COUNTY OF ESSEX

Name: TOM BAIN

the states Title WARDEN OCHIPORATION OF THE COUNTY OF ESSEX

Name: Mary S. Birch

Title:

"" the stor of Council Services / Clerk of the County of Essex 132

I/We have the authority to bind the Corporation.

by its gener	E RIVER WIND LP, ral partner, E RIVER WIND GP INC.
Name:	GOLIN EBWARDS
Title:	DIRECTOR
Name:	Heesub Cho
Title:	Director

I/We have the authority to bind the Corporation.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.24 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 13, paragraph 53

Preamble:

Enbridge alleges that by March 24, 2020, the County had not provided direction on what would be acceptable in the Traffic Control Plan.

Question:

a) Does Enbridge deny that on December 5, 2019 the County advised Enbridge that no lane closures would be acceptable to the County and this would need to be addressed in the Traffic Control Plan?

Response:

a) Enbridge Gas was advised on December 5, 2019 that the County of Essex would not permit any lane restrictions for the execution of construction. Enbridge Gas advised that the project could not be completed safely without some level of cooperation with a traffic control plan for construction throughout the project that would include lane closures for worker safety and compliance to Ontario Traffic Manual's Book 7.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.25 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 1, Page 15, paragraph 58

Preamble:

Enbridge alleges that it agreed to a number of conditions and requirements of the County in the Road User Agreement.

Question:

- a) Is Enbridge asserting that the County did not concede a number of conditions and terms that Enbridge insisted on?
- b) Did the County make concessions and agreed to permit lane closures as part of the Traffic Control Plan, among other concessions?

- a) No.
- b) The County of Essex indicated it would consider permitting limited lane closures if Enbridge Gas would agree to the 1.5m depth.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.26 Page 1 of 2 Plus Attachment

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 3, Page 1, Paragraphs 3 and 4

Preamble:

Enbridge alleges that it has installed pipelines in the County many times without issue and that the County has not previously required Enbridge to enter into any Road User Agreements in furtherance of the Franchise Agreement. Enbridge further alleges that in the prior pipeline installations, the County has not required any additional depth of cover except under the travelled portions of the roadway where a direct conflict would exist and, that the County, has accepted the practicing of abandoning facilities in place.

Question:

- a) Were the prior installations to which Enbridge refers completed by Enbridge or its predecessor Union Gas?
- b) Enbridge indicates that it installed distribution lines "many times". How many distribution lines has Enbridge specifically installed in the County? How many distribution lines has Enbridge installed in areas under the direct jurisdiction of the County as opposed to under the jurisdiction of a lower tier municipality?
- c) Were the distribution mains previously installed by Enbridge located within the travelled portion of the roadway, including the unpaved shoulder, and, if so, how far from the paved edge of the roadway?
- d) Were the distribution mains installed by Enbridge located in areas that had no impact on an existing roadway?
- e) Specifically, what facilities and in what areas has the County allowed Enbridge to abandon in place?

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.26 Page 2 of 2 Plus Attachment

Response:

a) to e) See Attachment 1 for this response.

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.26, Attachment 1, Page 1 of 10

Project Year	Location	Туре	Main	Description	Road User Agreement	Abandon in Place	Depth of Installation	Comments
2016- 2019	County Rd 34, Talbot Trail	Distribution	NPS6 ST (10km)	Leamington Line Upgrade	No	Yes	.75 - 1m	Replaced/Upgraded NPS6 M
2020	County Rd 42 and Manning Rd Roundabout	Distribution	4" PE 420 kPa	Relocation for Essex County Requested Municipal Work	No	Yes	.75 - 1m	Depth of 1.2m for road cross County issues w landowners.
2020	South Talbot Road Roundabout	Distribution	4" PE, 8" ST 3450 kPa	Relocation for Essex County Requested Municipal Work	No	Yes		Depth of 1.2m for road cross
2020	County Rd 3 Culvert Replacement	Distribution	4" PE 420 kPa	Relocation for Essex County Requested Municipal Work	No	Yes	below drain	Coordination w Consultant a
2020	Kings Creek on Walker Rd	Distribution	NPS 4 PE (140m)	Relocation for Essex County Requested Municipal Work	No	Yes	below drain	Maintained existing running maintain 1.5m below ditch b
2020	County Rd 14 Lovelace Drain	Distribution	NPS 2 PE (120m)	Culvert Replacement	No	Yes	below drain	Maintained existing running maintain 1.5m below ditch be
2020	County Rd 14 Hwy 77	Distribution	NPS 10 3450kPa	Growth and Expansion - Greenhouse	No	NA	1.2m then updated to 1.5m	Permit depth request update County Rd at road edge. New with Hydro One, remainder in
2019	KTRP Expansion	Transmission	NPS 20	Greenhouse Expansion	No	NA	various	Crossed County Roads Lakes
2019	Road 4 Graham SR	Distribution	NPS 8 1900kPa	New Main Expansion	No	NA	.75m	New NPS8 1900kPa reinford
2019	County Rd 29 Culvert Replacement at Hwy 3	Distribution	NPS6 ST (85m)	Relocation for Essex County Requested Municipal Work	No	Yes	below drain	Depth provided by ERCA for or roads, Abandoned NPS6 in pl
2019	County Rd 9, Burke Drain	Distribution	NPS8 ST (20m)	Relocation for Essex County Requested Municipal Work	No	Yes	below drain	Move NPS8 ST for culvert wo
2018	County Rd 31 b/n #42 and #401	Distribution	NPS 4 PE (1900m)	Leakage replacmenent	No	Yes		Abandoned NPS3 ST
2017	Panhandle	Transmission	NPS20		No	Yes	1.2 / 1.5m	Small Cut Outs - Remainder le
2016	Leamington Phase II	Transmission	NPS12 & 16 (2.5km)	Reinforcement new pipe only	No	NA	1.2 main /1.5m drains & road crossings	Net new looping project for L

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MOP Upgrade
ssings. *Project delayed due to Essex rs. Previously sched Q2 2020
ssing.
and Essex County
g line depth but had to drill deeper to bottom
g line but had to drill deeper to bottom
ated to 1.5m July 20 on parrallel to lew 50m in easement in agreement r installed in road allowance.
eshore to Kingsville
orcement
or drain bottom, 1.2m under county place
vork
r left in place
r Leamington expansion

County of Essex

ENTRANCE

& OTHER MISCELLANEOUS WORKS

County of	ENTRANCE	and the second		Permit	No.		and again and	Date	
LSSEX	& OTHER MISCELLANEOUS WORKS	E	-	17	2. 2	31	2017	04	28
	PERMIT			уу	-	No.	уууу	mm	dd

APPLICATION IS HEREBY MADE TO (CHECK ONE OF THE FOLLOWING TO PROPOSED WORK)

CONSTRUCT AN UNPAVED ENTRANCE		CONSTRUCT A PAVED ENTRANCE
CONSTRUCT CURBS, CUT CURBS		PAVE AN EXISTING ENTRANCE
CHANGE THE DESIGN OF AN ENTRANCE		CHANGE THE LOCATION OF AN ENTRANCE
CHANGE THE CLASSIFICATION OF AN ENTRANCE	\boxtimes	OTHER Install temporary access

DESCRIPTION AND LOCATION OF PROPERTY (EXACT LOCATION OF NEW ENTRANCE MUST BE STAKED OUT)

the second se	and the second		and the second se		the second se
LOT No:		ROAD No:	31	LOCATION:	North of Mersea Road 8
the second se	· · · · · · · · · · · · · · · · · · ·	SIDE OF ROAD:	East	MUNICIPALITY:	Leamington
CONC:		ROAD NAME:			

CONDITIONS

It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies. All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant. Each entrance or miscellaneous works must be designed, constructed, and maintained in a manner that prevents surface water from the entrance and/or the adjoining property from being discharged onto the roadway. PHONE NO. (HOME) 519 350 3281 NAME OF OWNER: Union Gas Limited (Krystal Kalbol) PHONE NO. 745 Richmond street ADDRESS: (STREET, CITY, PROV., (WORK) POSTAL CODE) Chatham Kent N7M 5J5 kkalbol@uniongas.com DATE: April 28, 2017 SIGNATURE:

FORM TO BE COMPLETED TO THIS LINE BY APPLICANT

	PERMIT	уу	No.	уууу	mm	dd		
PPROVAL & INSTR	UCTIONS (EXISTING ROADSIDE DI	RAINAGE SYSTEM ANI	REMARKS	5)				
MUNICIPAL DR. (NAME)								
ROAD DITCH: (PIPE REQUIRED)	30 feet	18 inch		CSP or HDPE			18 inch CSP o	or HDPE
(,	PIPE LENGTH	PIPE DIAMET	ER	PIPE M	ATERI	AL		
TILE OR SEWER	CURB AND GUTTER	R						
dditional Conditi	ions/Remarks:							
emporary culvert t	to be installed and removed with	hin one year from A	April 28, 2	2017				
Permit Approved by (Print):	Dale Myer							
2) (2000)								
	Depannin							
Signature: DaleMy								
	0							
Deter	A == 1 28 2017							
Date:	April 28, 2017							

Permit No.

E - 17 - 31

Date

2017 04 28



CONSTRUCT AN UNPAVED ENTRANCE		CONSTRUCT A PAVED ENTRANCE
CONSTRUCT CURBS, CUT CURBS		PAVE AN EXISTING ENTRANCE
CHANGE THE DESIGN OF AN ENTRANCE		CHANGE THE LOCATION OF AN ENTRANCE
CHANGE THE CLASSIFICATION OF AN ENTRANCE	\boxtimes	OTHER Utility Relocation

DESCRIPTION AND LOCATION OF PROPERTY (EXACT LOCATION OF NEW ENTRANCE MUST BE STAKED OUT)

	De Littletter active active				
LOT No:	ROAD No:	29	LOCATION:	@ South Talbot Rd.	
REG. PLAN:	SIDE OF ROAD:	West	MUNICIPALITY:	KINGSVILLE	
CONC:	ROAD NAME:	County	Rd. 29		

CONDITIONS

It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies.						
All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant.						
Each entrance or miscellaneous works must be designed, constructed, and maintained in a manner that prevents surface water from the entrance and/or the adjoining property from being discharged onto the roadway.						
NAME OF OWNER:	Mike Cincurak (Enbridge/Union Gas)	PHONE NO. (HOME)	519-250-2200			
ADDRESS: (STREET, CITY, PROV.,	3840 Rhodes Drive	PHONE NO. (WORK)				
POSTAL CODE) Windsor, ON N9A 6N7 mcincurak@enbridge.com						
FORM TO BE COMPLETED TO THIS LINE BY APPLICANT						

DEPOSIT RECORD



APPROVAL & INSTRUCTIONS (EXISTING ROADSIDE DRAINAGE SYSTEM AND REMARKS)

MUNICIPAL DRAIN:

(NAME)
ROAD DITCH:

(PIPE REQUIRED)

TILE OR SEWER CURB AND GUTTER

Additional Conditions/Remarks:

Directional drilling only across all county roads at a minimum depth of 1.2m. No open cut excavations crossing roads.

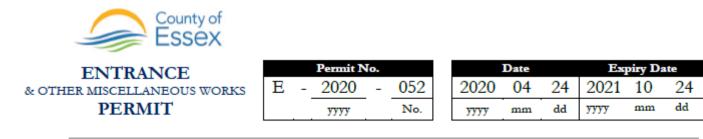
Call 519-776-6441. Ext. 1564 for final inspection when work is completed.

Permit Approved	Terri Marente
1 (1) (1)	I CITI Marchie

by (Print): Terri Marentette

Signature: Jui Hatte

Date: May 7, 2019



CONSTRUCT AN UNPAVED ENTRANCE		CONSTRUCT A PAVED ENTRANCE
CONSTRUCT CURBS, CUT CURBS		PAVE AN EXISTING ENTRANCE
CHANGE THE DESIGN OF AN ENTRANCE		CHANGE THE LOCATION OF AN ENTRANCE
CHANGE THE CLASSIFICATION OF AN ENTRANCE	\boxtimes	OTHER UTILITY WORKS

DESCRIPTION AND LOCATION OF PROPERTY (EXACT LOCATION OF NEW ENTRANCE MUST BE STAKED OUT)

LOT No:	ROAD No:	3	LOCATION:	CR3 @ Chappus Drian
REG. PLAN:	SIDE OF ROAD:	SOUTH	MUNICIPALITY:	Lasalle
CONC:	ROAD NAME:	Malden R	d	

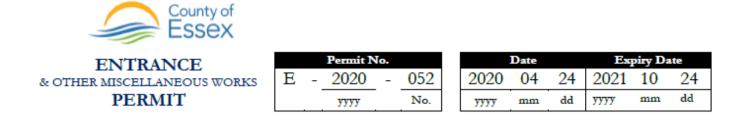
CONDITIONS

It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies.

All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant.

Each entrance or miscellaneous works must be designed, constructed, and maintained in a manner that prevents surface water from the entrance and/or the adjoining property from being discharged onto the roadway.

NAME OF OWNER:	ENBRIDGE GAS INC. (Will Ceccacci)	PHONE NO. (MAIN)	519-564-7909
ADDRESS:	3840 Rhodes Dr	PHONE NO. (ALT.)	
(STREET, CITY, PROV., POSTAL CODE)	Windsor, On, N9A 6N7	will.ceccacci	@enbridge.com



MUNICIPAL DRAIN: (NAME)							
ROAD DITCH: (PIPE REQUIRED)							
PIPE LENGTH PIPE DIAMETER PIPE MATERIAL							
TILE OR SEWER CURB AND GUTTER							
Additional Conditions/Remarks:							
The applicant is responsible for ensuring all utility/service locates have been completed and are valid, prior to the commencement of the construction.							
Work to be done per project no. 01-20-653 dated 2020/04/08.							
If applicable applicant to provide TRAFFIC PROTECTION PLAN (in accordance with Ontario Traffic Manual Book 7, current revision) for REVIEW AND APPROVAL.							
The Contractor to provide 48hrs notice prior to commencement of work.							
Any disturbance occurring on the County Road will be restored to pre-condition or better.							
Call 519-776-6441. Ext. 1564 for final inspection when work is completed.							

Permit Approved by (Print):	Kris Balallo
Signature:	yke.
-	

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.26, Attachment 1, Page 5 of 10

	TRANCE CELLANEOUS WORKS	Permit No. E - 2020 -	056	2020	Date 05	12	2020	piry Da 11	ite 12
P	ERMIT	уууу	No.	уууу	mm	dd	уууу	mm	dd
APPLI	CATION IS HEREBY M	ADE TO (CHECK ONE	OF THE FO	LLOWING	TO PRO	POSED	WORK)		
	CONSTRUCT AN UNPA	AVED ENTRANCE		CONSTR	UCT A	PAVE	D ENTR	ANCE	
	CONSTRUCT CURBS, C	UT CURBS		PAVE AI	V EXIS	TING	ENTRAN	ICE	
	CHANGE THE DESIGN	N OF AN ENTRANCE		CHANGI ENTRAN		LOCA	TION OI	F AN	
	CHANGE THE CLASSI ENTRANCE	FICATION OF AN	\boxtimes	OTHER	UTILI	TY WO	ORKS		

REG. SIDE OF ROAD: N/E/W/S MUNICIPALITY: Tecumseh/Lakeshore PLAN: CONC: ROAD NAME: County Rd 42 & 19

CONDITIONS

It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies.

All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant.

Each entrance or miscellaneous works must be designed, constructed, and maintained in a manner that prevents surface water from the entrance and/or the adjoining property from being discharged onto the roadway.

POSTAL CODE)	Windsor, On, N9A 6N7	will.ceccacci@enbridge.com
ADDRESS: (STREET, CITY, PROV.,	3840 Rhodes Dr	PHONE NO. (ALT.)
NAME OF OWNER:	ENBRIDGE GAS INC. (Will Ceccacci)	PHONE NO. (MAIN) 519-564-7909

FORM TO BE COMPLETED TO THIS LINE BY APPLICANT

County of Essex									
ENTRANCE	Permit N	lo.	Date		Esp	oiry Da	ite		
& OTHER MISCELLANEOUS WORKS	E - 2020	- 056	2020 05		2020	11	12		
PERMIT	уууу	No.	уууу тт	dd	уууу	mm	dd		
APPROVAL & INSTRUCTION	NS (EXISTING ROADSI	DE DRAINAGE	SYSTEM AND RI	MARKS)					
MUNICIPAL DRAIN: (NAME)									
(PIPE REQUIRED)					DIDEN		TAT		
	PIPE LENGTH	н р	PE DIAMETEI	ĸ	PIPE M	ATER	IAL		
TILE OR SEWER	TILE OR SEWER CURB AND GUTTER								
Additional Conditions/F	Remarks:								
The applicant is responsi and are valid, prior to th				have b	een con	nplete	d		
Work to be done per pro	ject no. 01-20-65	51 dated 202	20/03/13.						
Directional drilling only a excavations crossing roa		ds at a mini	mum depth	of 1.2n	n. No oj	pen c	ut		
Existing Gas Line to be a	bandoned and re	moved.							
Applicant to provide T Traffic Manual Book 7,						ntario	<mark>)</mark>		
The Contractor to provid	e 48hrs notice pri	ior to comm	encement of	work.					
Any disturbance occurrin	g on the County	Road will be	restored to	pre-co	ndition o	or bet	ter.		

Call 519-776-6441. Ext. 1564 for final inspection when work is completed.

Permit Approved by (Print): Kris Balallo

10

Filed: 2020-08-14, EB-2020-0160, Exhibit I.ESSEX.26, Attachment 1, Page 6 of 10

ENTRANCE			Permit N	lo.			Date		Esp	oiry Da	ate
& OTHER MISCELLANEOUS WORKS	E	-	2020	-	075	2020	06	04	2020	12	04
PERMIT			уууу		No.	уууу	mm	dd	уууу	mm	dd

APPLICATION IS HEREBY MADE TO (CHECK ONE OF THE FOLLOWING TO PROPOSED WORK)

CONSTRUCT AN UNPAVED ENTRANCE		CONSTRUCT A PAVED ENTRANCE
CONSTRUCT CURBS, CUT CURBS		PAVE AN EXISTING ENTRANCE
CHANGE THE DESIGN OF AN ENTRANCE		CHANGE THE LOCATION OF AN ENTRANCE
CHANGE THE CLASSIFICATION OF AN ENTRANCE	\bowtie	OTHER UTILITY WORKS

DESCRIPTION AND LOCATION OF PROPERTY (EXACT LOCATION OF NEW ENTRANCE MUST BE STAKED OUT)

LOT No:	ROAD No:	14	LOCATION:	CR14 @ Lovelace Drain
REG. PLAN:	SIDE OF ROAD:	South	MUNICIPALITY:	Kingsville
CONC:	ROAD NAME:	County R	d 14	

CONDITIONS

It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies.

All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant.

Each entrance or miscellaneous works must be designed, constructed, and maintained in a manner that prevents surface water from the entrance and/or the adjoining property from being discharged onto the roadway.

NAME OF OWNER:	ENBRIDGE GAS INC. (Mike Cincurak)	PHONE NO. (MAIN)	(226) 448-3971				
ADDRESS:	3840 Rhodes Dr	PHONE NO. (ALT.)					
(STREET, CITY, PROV., POSTAL CODE)	Windsor, On, N9A 6N7	Mike.Cincurak@enbridge.com					
FORM TO BE COMPLETED TO THIS LINE BY APPLICANT							

County of Essex											
ENTRANCE			Permit N	ło.			Date		Ea	piry D	ate
& OTHER MISCELLANEOUS WORKS	E	-	2020	-	075	2020	06	04	2020	12	04
PERMIT			yyyy		No.	уууу	mm	dd	уууу	mm	dd

APPROVAL & INSTRUCTIONS (EXISTING ROADSIDE DRAINAGE SYSTEM AND REMARKS)

\boxtimes	MUNICIPAL DRAIN: (NAME)	Lovelace Drain
	ROAD DITCH:	

PIPE LENGTH PIPE DIAMETER PIPE MATERIAL

TILE OR SEWER CURB AND GUTTER

Additional Conditions/Remarks:

The applicant is responsible for ensuring all utility/service locates have been completed and are valid, prior to the commencement of the construction.

Work to be done per project no. 01-20-662 dated 2020/05/14.

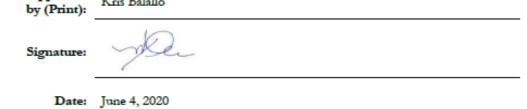
If applicable applicant to provide TRAFFIC PROTECTION PLAN (in accordance with Ontario Traffic Manual Book 7, current revision) for REVIEW AND APPROVAL.

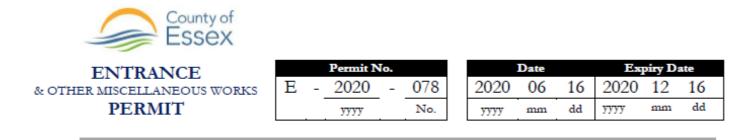
The Contractor to provide 48hrs notice prior to commencement of work.

Any disturbance occurring in the County Right-of-Way will be restored to pre-condition or better.

Call 519-776-6441. Ext. 1564 for final inspection when work is completed.

Permit Approved Kris Balallo





CONSTRUCT AN UNPAVED ENTRANCE		CONSTRUCT A PAVED ENTRANCE
CONSTRUCT CURBS, CUT CURBS		PAVE AN EXISTING ENTRANCE
CHANGE THE DESIGN OF AN ENTRANCE		CHANGE THE LOCATION OF AN ENTRANCE
CHANGE THE CLASSIFICATION OF AN ENTRANCE	\ge	OTHER UTILITY WORKS

DESCRIPTION AND LOCATION OF PROPERTY (EXACT LOCATION OF NEW ENTRANCE MUST BE STAKED OUT)

LOT No:	ROAD N	lo:	11	LOCATION:	CR11 @ King Creek Drain
REG. PLAN:	SIDE OF ROA	D:	South	MUNICIPALITY:	Essex
CONC:	ROAD NAM	Œ:	Walker R	łd	

CONDITIONS

It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies. All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant. Each entrance or miscellaneous works must be designed, constructed, and maintained in a manner that prevents surface water from the entrance and/or the adjoining property from being discharged onto the roadway. ENBRIDGE GAS INC. (Mike PHONE NO. NAME OF OWNER: (226) 448-3971 (MAIN) Cincurak) PHONE NO. 3840 Rhodes Dr ADDRESS: (ALT.) (STREET, CITY, PROV., Windsor, On, N9A 6N7 Mike.Cincurak@enbridge.com POSTAL CODE)

FORM TO BE COMPLETED TO THIS LINE BY ADDI ICAN'T



ENTRANCE		Permit N	lo.			Date		Esq	piry D	ate
& OTHER MISCELLANEOUS WORKS	Ε -	2020	-	078	2020	06	16	2020	12	16
PERMIT		уууу		No.	уууу	mm	dd	уууу	mm	dd

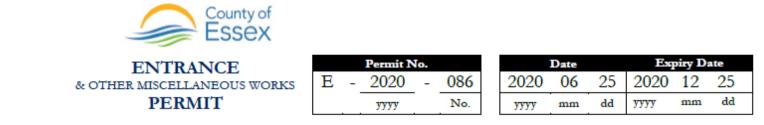
APPROVAL & INSTRUCTIONS (EXISTING ROADSIDE DRAINAGE SYSTEM AND REMARKS)

_	APPROVAL & INSTRUCTIONS (EASTING ROADSIDE DRAINAGE SISTEM AND REMARKS)								
	MUNICIPAL DRAIN: (NAME)	King Creek Drain							
	ROAD DITCH: (PIPE REQUIRED)								
		PIPE LENGTH	PIPE DIAMETER	PIPE MATERIAL					
	TILE OR SEWER	CURB AND GUTTER							
	Additional Conditions/Remarks:								
	The applicant is responsible for ensuring all utility/service locates have been completed and are valid, prior to the commencement of the construction.								
	Work to be done per project no. 01-20-661 dated 2020/05/26.								
		o provide TRAFFIC PROTE look 7, current revision) fo							
	The Contractor to provide 48hrs notice prior to commencement of work.								
	Any disturbance occurring in the County Right-of-Way will be restored to pre-condition or better.								
	Call 519-776-6441. Ext.	1564 for final inspection	when work is comple	ted.					

Permit Approved by (Print):	Kris Balallo
	6

Signature:

Data: June 16 2020



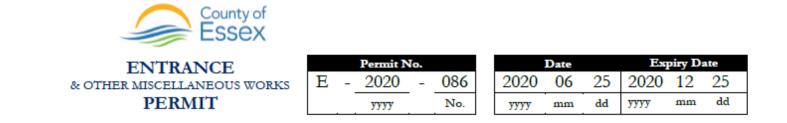
CONSTRUCT AN UNPAVED ENTRANCE		CONSTRUCT A PAVED ENTRANCE
CONSTRUCT CURBS, CUT CURBS		PAVE AN EXISTING ENTRANCE
CHANGE THE DESIGN OF AN ENTRANCE		CHANGE THE LOCATION OF AN ENTRANCE
CHANGE THE CLASSIFICATION OF AN ENTRANCE	\boxtimes	OTHER UTILITY WORKS

DESCRIPTION AND LOCATION OF PROPERTY (EXACT LOCATION OF NEW ENTRANCE MUST BE STAKED OUT)

LOT No:	ROAD No:	8	LOCATION:	318 CR8
REG. PLAN:	SIDE OF ROAD:	South	MUNICIPALITY:	Kingsville
CONC:	ROAD NAME:	County R	d 8	

CONDITIONS

It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies.							
All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant.							
Each entrance or miscellaneous works must be designed, constructed, and maintained in a manner that prevents surface water from the entrance and/or the adjoining property from being discharged onto the roadway.							
			-				
			-				
water from the entrance	and/or the adjoining property from being di ENBRIDGE GAS INC. (Sandro	scharged onto the ros PHONE NO.	adway.				



PPROVAL & INSTRUCTIO	NS (EXISTING ROADSIDE DRAI	NAGE SYSTEM AND REMARI	53)			
MUNICIPAL DRAIN: (NAME)	North Townline Drain					
ROAD DITCH: (PIPE REQUIRED)						
	PIPE LENGTH	PIPE DIAMETER	PIPE MATERIAL			
TILE OR SEWER	CURB AND GUTTER					
Additional Conditions/	Remarks:					
The applicant is responsible for ensuring all utility/service locates have been completed and are valid, prior to the commencement of the construction.						
Work to be done per pro	oject no. 01-20-314 date	d 2020/06/02.				
If applicable applicant to provide TRAFFIC PROTECTION PLAN (in accordance with Ontario Traffic Manual Book 7, current revision) for REVIEW AND APPROVAL.						
The Contractor to provide 48hrs notice prior to commencement of work.						
Any disturbance occurring in the County Right-of-Way will be restored to pre-condition or better.						
Call 519-776-6441. Ext.	1564 for final inspection	when work is comple	ted.			

Permit Approved by (Print):	Kris Balallo
Signature:	Ale
Date:	June 25, 2020



ENTRANCE			Permit N	lo.			Date		Ex	piry Da	ate
& OTHER MISCELLANEOUS WORKS	Ε	-	2020	-	095	2020	07	23	2021	01	23
PERMIT			уууу		No.	уууу	mm	dd	уууу	mm	dd

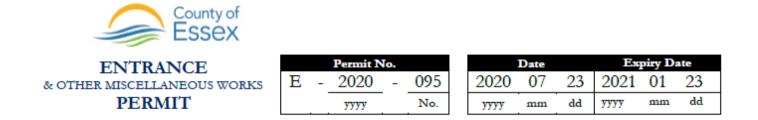
CONSTRUCT AN UNPAVED ENTRANCE		CONSTRUCT A PAVED ENTRANCE
CONSTRUCT CURBS, CUT CURBS		PAVE AN EXISTING ENTRANCE
CHANGE THE DESIGN OF AN ENTRANCE		CHANGE THE LOCATION OF AN ENTRANCE
CHANGE THE CLASSIFICATION OF AN ENTRANCE	\boxtimes	OTHER UTILITY WORKS

DESCRIPTION AND LOCATION OF PROPERTY (EXACT LOCATION OF NEW ENTRANCE MUST BE STAKED OUT)

LOT No:	 ROAD No:	14	LOCATION:	Hywy 77 West to Mun 601
REG. PLAN:	SIDE OF ROAD:	North	MUNICIPALITY:	Leamington
CONC:	ROAD NAME:	County R	d 14	

CONDITIONS

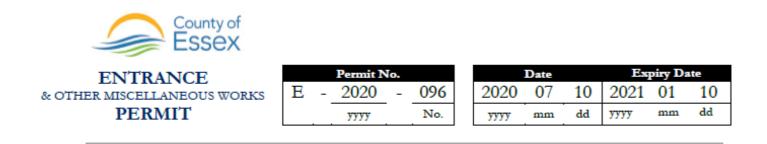
It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies.									
•	All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County								
Engineer who may, in th	Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant.								
	laneous works must be designed, construct and/or the adjoining property from being								
NAME OF OWNER:	ENBRIDGE GAS INC. (Mike Cincurak)	PHONE NO. (MAIN)	(226) 448-3971						
ADDRESS:	3840 Rhodes Dr	PHONE NO. (ALT.)							
(STREET, CITY, PROV., POSTAL CODE) Windsor, On, N9A 6N7 Mike.Cincurak@enbridge.com									
FORM TO BE COMPLETED TO THIS LINE BY ADDI ICAN'T									



APPROVAL & INSTRUCTIONS (EXISTING ROADSIDE DRAINAGE SYSTEM AND REMARKS)							
MUNICIPAL DRAIN: (NAME)							
ROAD DITCH: (PIPE REQUIRED)							
PIPE LENGTH PIPE DIAMETER PIPE MATERIAL							
TILE OR SEWER CURB AND GUTTER							
Additional Conditions/Remarks:							
The applicant is responsible for ensuring all utility/service locates have been completed and are valid, prior to the commencement of the construction.							
Work to be done per project no. 01-20-500 dated 2020/05/29. Updated plan received July 22, 2020. Portion of gas line installed in County Rd to have a minimum depth of 1.5m							
If applicable applicant to provide TRAFFIC PROTECTION PLAN (in accordance with Ontario Traffic Manual Book 7, current revision) for REVIEW AND APPROVAL.							
The Contractor to provide 48hrs notice prior to commencement of work.							
Any disturbance occurring in the County Right-of-Way will be restored to pre-condition or better.							
Call 519-776-6441. Ext. 1564 for final inspection when work is completed.							

Permit Approved by (Print): Kris Balallo





CONSTRUCT AN UNPAVED ENTRANCE		CONSTRUCT A PAVED ENTRANCE
CONSTRUCT CURBS, CUT CURBS		PAVE AN EXISTING ENTRANCE
CHANGE THE DESIGN OF AN ENTRANCE		CHANGE THE LOCATION OF AN ENTRANCE
CHANGE THE CLASSIFICATION OF AN ENTRANCE	\boxtimes	OTHER UTILITY WORKS

DESCRIPTION AND LOCATION OF PROPERTY (EXACT LOCATION OF NEW ENTRANCE MUST BE STAKED OUT)

LOT No:	ROAD No:	11	LOCATION:	CR11 & STR
REG. PLAN:	SIDE OF ROAD:	N/E/W/S	MUNICIPALITY:	Tecumseh
CONC:	ROAD NAME:	Walker R	d	

CONDITIONS

It is understood that all works will be constructed, altered, maintained or operated at the expense of the undersigned and that work must not be begun before a permit has been issued by the County Engineer. The issuance of a permit by the Engineer does not relieve the holder of the responsibility of complying with relevant bylaws, municipal regulations, and requirements of other regulatory agencies.

All works must be completed in accordance with the requirements of the County of Essex before the expiry date shown on the form or the deposit will be forfeited. Any defective conditions must be corrected to the satisfaction of the County Engineer who may, in the interest of the protection of the public, direct immediate repairs or removal of the works by County forces at the expense of the Applicant.

Each entrance or miscellaneous works must be designed, constructed, and maintained in a manner that prevents surface water from the entrance and/or the adjoining property from being discharged onto the roadway.

NAME OF OWNER:	ENBRIDGE GAS INC. (Will Ceccacci)	PHONE NO. (MAIN)	519-564-7909	
ADDRESS:	3840 Rhodes Dr	PHONE NO. (ALT.)		
(STREET, CITY, PROV., POSTAL CODE)	Windsor, On, N9A 6N7	will.ceccacci@enbridge.com		



ENTRANCE	Permit No.			Date			Expiry Date			
& OTHER MISCELLANEOUS WORKS	Ε -	2020	-	096	2020	07	10	2021	01	10
PERMIT		уууу		No.	уууу	mm	dd	уууу	mm	dd

APPROVAL & INSTRUCTIONS (EXISTING ROADSIDE DRAINAGE SYSTEM AND REMARKS)

MUNICIPAL DRAIN: (NAME)			
(PIPE REQUIRED)			
	PIPE LENGTH	PIPE DIAMETER	PIPE MATERIAL
TILE OR SEWER	CURB AND GUTTER		
Additional Conditions/	Remarks:		
	tible for ensuring all utility		e been completed
Work to be done per pro	oject no. 01 20 654 datec	1 2020/05/06.	
Work to be done per rev	vised plan with project no	. 01-20-654 receive J	luly 10, 2020.
Directional drilling only excavations crossing roa	across County roads at a ads.	minimum depth of 1.	2m. No open cut
	RAFFIC PROTECTION I	-	
The Contractor to provid	de 48hrs notice prior to co	ommencement of wor	<mark>k.</mark>
Any disturbance occurri	ng on the County Road wi	ill be restored to pre-	condition or better.
Call 519-776-6441. Ext.	1564 for final inspection	when work is comple	eted.

Permit Approved by (Print):	Kris Balallo
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Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.27 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 3, Page 2, Paragraph 6

Preamble:

Enbridge alleged that the minimum depth of cover required by the County will increase the likelihood of interference with the watermains of the Town of Lakeshore that were installed several decades ago at a depth of approximately 1.5 metres. By increasing the depth of cover for the pipeline, Enbridge alleges that it will increase the likelihood of disturbing the watermain.

Question:

- a) Specifically, where is the alleged watermain of the Town of Lakeshore located in relation to the proposed pipeline?
- b) What year was this watermain installed and has Enbridge confirmed the exact location of the watermain?
- c) Is the Town of Lakeshore watermain located along the entire length of the proposed pipeline, at one specific location, or at multiple locations? If at one or multiple locations, provide specifics.

- a) As previously noted Enbridge Gas has not been permitted by the County of Essex to complete daylighting activities to verify the actual location of Lakeshore watermains. Town of Lakeshore in ongoing discussions indicate that their water main at an approximately 1.5m depth.
- b) Town of Lakeshore has indicated in ongoing discussions that the watermain along County Road 46 is a mixed vintage dating back into the 1970's.
- c) Town of Lakeshore water main is located through the entire portion of the Enbridge

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Gas's preferred route at multiple locations due to growth and expansion over the decades. Specific details of the GIS/As-built indicated locations are included in the Project alignment drawings but are subject to physical verification.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.28 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 4, Page 4, Paragraph 11

Preamble:

Enbridge states that the increased depth will increase the potential for conflict with the Town of Lakeshore's watermain. Enbridge states that the existing watermain is fragile and any movement or disturbance of the watermains could loosen the joint and result in leaks.

Question:

- a) Has Enbridge gathered information to confirm the location and depth of the Town of Lakeshore's watermain? If Enbridge has gathered information to confirm the location and depth, provide same. If Enbridge had not gathered information to confirm the location and depth, why did it not do so prior to commencing this application and making this specific allegation?
- b) Is the location of the proposed pipeline above the Town of Lakeshore's watermain? If so, does the entire length of the proposed pipeline run above the Town of Lakeshore's watermain?
- c) If the proposed pipeline runs adjacent to the Town of Lakeshore's watermain, whether the depth of cover is 1.0 metre or 1.5 metres is there not potential for movement or disturbance of the watermain loosening joints resulting in leaks in any event?
- d) Would not any disturbance of the soil surrounding the watermain whether the depth of cover be 1.0 metre or 1.5 metres cause vibrations to travel through the soil with the potential to disturb the existing watermains?

Response:

a) Please see Exhibit I.ESSEX.12 g), h) and i).

- b) Please see Exhibit I.ESSEX.12 i).
- c) and d) It is reasonable to assume that at a depth of cover of 1m and a proposed offset of 1.5m would lessen the potential for impact on the watermains from the pipeline installation. The deeper the pipeline installation, in particular deeper than 1.2 m, would require the use of shoring or wide trench sloping to accommodate worker entry for connection services or performing pipeline maintenance and pipeline tie-in welding. Those larger excavations would be more likely to disrupt the watermains because there would be less soil between the pipeline and the watermain which are installed with the approximate depth of cover of 1.5m. Also, for future servicing the potential for 3rd party damage would also increase as those services would now be at the similar depth of cover as the watermain. These are all reasons why Enbridge Gas is opposed to increasing the depth of cover beyond 1m for the proposed pipeline.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 5, Page 1, Paragraph 1

Preamble:

Enbridge states that it designed the pipeline to meet or exceed the requirements of CSAZ662.

Question:

- a) Is the CSAZ662 standard to which Enbridge is referring the 2015 standards and not the 2019 standards?
- b) Why is Enbridge Gas relying on a 2015 standard and not the 2019 standard given the construction is set to commence in 2020?

- a) Enbridge Gas is referring to CSA Z662-15.
- b) Enbridge Gas designs and constructs to the adopted standard of its technical regulator, the TSSA. CSA Z662-15 is the adopted standard of the TSSA.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.30 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 5, Page 2, Paragraph 4

Preamble:

Enbridge refers to the Environmental Report filed with the LTC Application identifying a depth of excavation of approximately 1.0 metre except for road and water crossings.

Question:

- a) Please confirm that the Environmental Report was commissioned to examine the potential impact on various environmental factors as a result of the construction of the proposed pipeline and not for its impact on the use of the roadway?
- b) Although the Environmental Report makes a passing reference to a depth of excavation of 1.0 metre, please provide the specific location in the Environment Report which comments on the appropriateness of using a depth of cover of 1.0 metre within the travelled portion of County Road 46?

- a) The Environmental Report (ER) was commissioned to evaluate the potential impacts of the construction and operation of the entire project, including pipelines and ancillary facilities, on the environment (which in accordance with the OEB Guidelines includes the natural, social, economic, cultural and built components). Sections 4.4.2 and 4.4.4 of the ER discuss the potential impacts to existing infrastructure, including roads and highways, and provide associated mitigation measures
- b) The Environmental Report (ER) was prepared under the assumption that the design, construction, and operation of the project is undertaken in accordance with all applicable codes and standards. It is not within the scope of the environmental study to comment on the appropriateness of engineering details.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.ESSEX.31 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

Exhibit B, Tab 1, Schedule 7, Page 9, Paragraph 33

Preamble:

Enbridge indicates that the Town of Lakeshore has advised Enbridge of its concerns regarding the proposed pipeline depth of 1.5 metre and the impact that it would have on the safety and integrity of the existing watermain.

Question:

- a) When did the Town of Lakeshore advise Enbridge Gas of its concerns regarding the proposed pipeline depth of 1.5 metres?
- b) Did the Town of Lakeshore express these concerns in written form and if so, provide copies of the documents.
- c) Has Enbridge made the Town of Lakeshore aware that the County requires a minimum setback of 3.0 metres from the current paved edge of the roadway?
- d) What is the Town of Lakeshore's requested minimum setback from the current paved edge of the roadway to prevent interference with its watermain if the County requires a depth of 1.5 metres within 3.0 metres of the current paved edge of the roadway?

- a) During consultations with the Town of Lakeshore on numerous times depth and type of main was discussed, but particularly on April 24th for the final walk through, depth of main in regards to the County of Essex requirements in respect of the depth of our installation was noted as a concern due to the age of the water main infrastructure through the area. Enbridge Gas would typically design and install distribution main at .75m and this rarely caused concern for unintended damage.
- b) These concerns were in discussions between Tammy Mungar and Brian Laramie for

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final walk through for consent.

- c) Yes. Brian Laramie from the Town of Lakeshore eluded that he would follow up with Kristal Kalbol on the County of Essex requests.
- d) The town of lakeshore has no minimum required setback from current paved edge of roadway.

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ENBRIDGE GAS INC. Answer to Interrogatory from County of Essex (ESSEX)

INTERROGATORY

Reference:

TSSA Letter, dated July 21, 2020

Preamble:

The TSSA states that the standards TSSA applies to pipelines is the 2015 CSA Standards.

Question:

- a) Are the requirements of the TSSA only minimum requirements?
- b) What concerns, if any, does the TSSA have if a municipality requires a standard that exceeds the requirements of the TSSA?
- c) Why is the TSSA taking the position that the 2015 CSA Standards apply to the Project which will be completed in 2020 and 2021, and not the 2019 CSA Standards?
- d) If the TSSA's position is that the 2019 CSA Standards are not currently applicable, when will the 2019 CSA Standards be relied on by the TSSA?
- e) Does the TSSA agree that it is preferable from a safety and environmental standpoint to remove an abandoned pipeline rather than leave it in place?
- f) Does the TSSA continue to support changes based on better material, welding and updated technology to continue to improve performance and quality of pipelines?
- g) Can the TSSA comment on the condition this pipeline will be in, in 50 years if it is repeatedly impacted by heavy loads and is only buried at a minimum depth of cover of 1.0 metre? Would the condition of the pipeline in 50 years be better at a minimum depth of cover of 1.5 metres?
- h) Can the TSSA comment on whether there will be an operational risk for this new proposed pipeline in 50 years? And, if so, would the risk be greater at an

alignment under the paved portion of the roadway as opposed to a similar location to the existing pipeline location adjacent to the property line and out of the travelled portion of the roadway?

- i) Why is "temporary support of existing utilities if exposed at tie-in locations or service connections" a valid concern? Would this not be true for all future proposed and/or replacement and/or maintenance of other utilities that will have to cross the proposed pipeline?
- j) Can the TSSA confirm by "construction and operation of this project" they mean specific to the operation of the pipeline and not the operation of the roadway?
- k) Do the standards the TSSA relied on in giving its opinion in this matter take into consideration the nature and use of this roadway, and that overweight loads will be travelling along the pipeline Enbridge proposes to install under the unpaved shoulder?

Response from TSSA:

- a) The adopted standards by TSSA, including CSA Z662-15, define the minimum requirements. Additional requirements that are specific to Ontario added to CSA Z662-15 through <u>FS-238-18 - Oil and Gas Pipelines CAD Amendment (February 15,</u> <u>2018).</u>
- b) TSSA cannot comment on the extra requirements. TSSA can only comment on what is required according to the documents mentioned in item "a" above.
- c) TSSA is in process of critically reviewing all the standards and amended Code Adoption Documents in Ontario. At this point of time, TSSA does not have any timeline as when and if adopts CSA Z662-19.
- d) Please see answer to item "c" above.
- e) TSSA can only comment as what is required according to adopted standard and amended CAD. Currently removing the abandoned pipeline is not a mandatory requirement in CSA Z662-15 and amended CAD.
- f) In general, yes. It is responsibility of the pipeline operator to perform engineering assessment as when the pipeline replacement is required based on the conditions of the asset. TSSA audits the pipeline operators and reviews the new pipeline projects submitted to OEB for leave to construct approvals. The reasons mentioned by EGI are in compliant to the standard. Replacement of pipelines with similar conditions

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are common by all pipeline operators.

- g) According to the adopted standard, Pipeline operators are responsible to perform different types of surveys including depth of cover to gain knowledge of their assets.
- h) Same as item "g" above.
- i) The comment was general and seemed valid, however nothing is mentioned on the standard for this specific item. TSSA main aim on review of this project is to check compliance or non-compliance to the standard.
- j) <u>Ontario Regulation 210/01: Oil and Gas Pipeline Systems</u> is related to pipeline operation.
- k) CSA Z662 standard is developed through consultations by all stakeholders, including all regulators, within Canada. This standard defines what is the minimum requirements for road crossing and considered the points mentioned in this question. Also, according to the same standard, pipeline operators are mandated to have integrity management program in place to operate their lines with safe conditions.

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ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

ESSEX Evidence, Tab 2, Exhibit B, page 3 of 4; Exhibit F, page 2-3 of 4; Exhibit H, page 2 of 9; Exhibit H, page 7 of 9

Preamble:

ESSEX evidence provides: "*Mr. Bain expressed concern over the replacement of a pipeline, with another that would not increase the capacity for the serviced area. He referenced previous communications with Union Gas about capacity, which indicated that if the municipality intended on expanding commercial/industrial development, there would not be adequate resources available to support this. He questioned that with Essex County development expanding rapidly, why would the replacement of the pipeline not be done with a larger capacity line, to support growth.*

From our read of the Essex evidence, Council had expressed concern over the available capacity once the replacement pipe was in place (provided reference above). The evidence (some references above) provides numerous attempts by staff to understand the capacity of the replacement pipe. The response that we read is that the new pipe will have "like for like" capacity that will meet the twenty year forecast.

While our focus in the original proceeding was on the capacity on the eastern half of the replacement project, we are interested in understanding the actual capacity of the proposed pipeline for the western half of the project and the implications for Essex, ratepayers and EGI shareholders.

Question:

Please provide a map showing the entire Windsor Line and all inter-connecting pipelines (including the Sarnia, Learnington, Ridgetown Lines and any inter-connecting pipelines on the Western half, e.g. Panhandle at Sandwich Compressor, etc.).

- a) Please provide the Maximum Operating Pressures of each of lines.
- b) From the most recent Facilities Planning analysis, please provide the amount of flow and direction of flow from each pipeline intersection assuming
 - i) The existing Windsor Line is in place

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- ii) With the proposed Windsor Line operating at its higher operating pressure
 - (1) To be clear, if this analysis has not been done to this point, please explain why and perform the analysis to provide the requested data for pipeline flows.

Response:

a) and b) These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.2 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

ESSEX Evidence, Tab 2, Exhibit B, page 3 of 4; Exhibit F, page 2-3 of 4; Exhibit H, page 2 of 9; Exhibit H, page 7 of 9

Preamble:

ESSEX evidence provides: "*Mr. Bain expressed concern over the replacement of a pipeline, with another that would not increase the capacity for the serviced area. He referenced previous communications with Union Gas about capacity, which indicated that if the municipality intended on expanding commercial/industrial development, there would not be adequate resources available to support this. He questioned that with Essex County development expanding rapidly, why would the replacement of the pipeline not be done with a larger capacity line, to support growth.*

From our read of the Essex evidence, Council had expressed concern over the available capacity once the replacement pipe was in place (provided reference above). The evidence (some references above) provides numerous attempts by staff to understand the capacity of the replacement pipe. The response that we read is that the new pipe will have "like for like" capacity that will meet the twenty year forecast.

While our focus in the original proceeding was on the capacity on the eastern half of the replacement project, we are interested in understanding the actual capacity of the proposed pipeline for the western half of the project and the implications for Essex, ratepayers and EGI shareholders.

Question:

For the western half of the Windsor Line, with the existing pipe in place:

- a) What is the current load that flows from Comber west?
- b) What amount of additional load could be added to the most westerly end of the western half while staying inside of minimum pressure parameters?
 - i) In this scenario, is the pipe fed from the Sandwich Compressor interconnection with the Panhandle system in addition to Comber?

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c) Would this maximum additional load be the incremental capacity of line?

If not, please provide the incremental capacity and define how it was determined.

Response:

a) to c) These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.3 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

ESSEX Evidence, Tab 2, Exhibit B, page 3 of 4; Exhibit F, page 2-3 of 4; Exhibit H, page 2 of 9; Exhibit H, page 7 of 9

Preamble:

ESSEX evidence provides: "*Mr. Bain expressed concern over the replacement of a pipeline, with another that would not increase the capacity for the serviced area. He referenced previous communications with Union Gas about capacity, which indicated that if the municipality intended on expanding commercial/industrial development, there would not be adequate resources available to support this. He questioned that with Essex County development expanding rapidly, why would the replacement of the pipeline not be done with a larger capacity line, to support growth.*

From our read of the Essex evidence, Council had expressed concern over the available capacity once the replacement pipe was in place (provided reference above). The evidence (some references above) provides numerous attempts by staff to understand the capacity of the replacement pipe. The response that we read is that the new pipe will have "like for like" capacity that will meet the twenty year forecast.

While our focus in the original proceeding was on the capacity on the eastern half of the replacement project, we are interested in understanding the actual capacity of the proposed pipeline for the western half of the project and the implications for Essex, ratepayers and EGI shareholders.

Question:

For the western half of the Windsor Line, with the proposed pipe in place:

- a) What is the current load that flows from Comber west or is it unchanged?
- b) What amount of additional load could be added to the most westerly end of the western half while staying inside of minimum pressure parameters?
 - i) In this scenario, is the pipe fed from the Sandwich Compressor interconnection with the Panhandle system in addition to Comber?

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.3 Page 2 of 2

- c) Would this maximum additional load be the incremental capacity of line?
 - i) If not, please provide the incremental capacity and define how it was determined.

Response:

a) to c) These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.4 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

ESSEX Evidence, Tab 2, Exhibit B, page 3 of 4; Exhibit F, page 2-3 of 4; Exhibit H, page 2 of 9; Exhibit H, page 7 of 9

Preamble:

ESSEX evidence provides: "*Mr. Bain expressed concern over the replacement of a pipeline, with another that would not increase the capacity for the serviced area. He referenced previous communications with Union Gas about capacity, which indicated that if the municipality intended on expanding commercial/industrial development, there would not be adequate resources available to support this. He questioned that with Essex County development expanding rapidly, why would the replacement of the pipeline not be done with a larger capacity line, to support growth.*

From our read of the Essex evidence, Council had expressed concern over the available capacity once the replacement pipe was in place (provided reference above). The evidence (some references above) provides numerous attempts by staff to understand the capacity of the replacement pipe. The response that we read is that the new pipe will have "like for like" capacity that will meet the twenty year forecast.

While our focus in the original proceeding was on the capacity on the eastern half of the replacement project, we are interested in understanding the actual capacity of the proposed pipeline for the western half of the project and the implications for Essex, ratepayers and EGI shareholders.

Question:

What is the forecasted twenty year load for the western half of the project?

- a) What is the forecasted load of the proposed hospital?
 - i) Is the hospital included in the twenty year load forecast?

Response:

a) These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1

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ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

ESSEX Evidence, Tab 2, Exhibit B, page 3 of 4; Exhibit F, page 2-3 of 4; Exhibit H, page 2 of 9; Exhibit H, page 7 of 9

Preamble:

ESSEX evidence provides: "*Mr. Bain expressed concern over the replacement of a pipeline, with another that would not increase the capacity for the serviced area. He referenced previous communications with Union Gas about capacity, which indicated that if the municipality intended on expanding commercial/industrial development, there would not be adequate resources available to support this. He questioned that with Essex County development expanding rapidly, why would the replacement of the pipeline not be done with a larger capacity line, to support growth.*

From our read of the Essex evidence, Council had expressed concern over the available capacity once the replacement pipe was in place (provided reference above). The evidence (some references above) provides numerous attempts by staff to understand the capacity of the replacement pipe. The response that we read is that the new pipe will have "like for like" capacity that will meet the twenty year forecast.

While our focus in the original proceeding was on the capacity on the eastern half of the replacement project, we are interested in understanding the actual capacity of the proposed pipeline for the western half of the project and the implications for Essex, ratepayers and EGI shareholders.

Question:

Please file any correspondence with Essex wherein Enbridge provided actual figures on the resulting capacity of the proposed project on the western segment by comparing it to existing or future loads like the hospital.

Response:

This question is beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.6 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

ESSEX Evidence, Tab 2, Exhibit L, page 3 of 7

Preamble:

The above reference provides an email from EGI which states: "Enbridge does understand and confirms the cost obligations upon Enbridge as per the terms of the Road Agreement, namely that any future relocation of the pipeline is to be solely paid for by Enbridge, and the possibility that a deeper depth may mitigate some of those costs."

We would like to understand better EGI's views on cost responsibility if the pipe would have to be relocated due to roadwork or replaced/looped for capacity.

Question:

We understand the Board would ultimately determine cost responsibility between shareholders and ratepayers but given the record in this proceeding, what is EGI's position on who would be responsible for costs associated with:

- a) Relocation of pipe due to road-widening in the next ten years? Twenty years?
- b) Need for replacement or looping due to:
 - i) Additional load from the hospital in the ten years? Twenty years?
 - ii) Unforeseen growth beyond the EGI forecast in the next ten years? Twenty years?
- c) Please provide EGI's basis for its position for each of the above scenarios.

Response:

a) to c) These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1. Enbridge Gas has relocated the pipeline route west of Manning Road where the County identified a planned widening in order to avoid a conflict and any relocation. The County has not

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.6 Page 2 of 2

identified any other road widening. Enbridge Gas submits that part of the project is not the subject of this Application.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.7 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

ESSEX Evidence, Tab 2, Exhibit H, page 7 of 9

Preamble:

The above reference provides an email from Essex to EGI which states: **"The alignment** - The letter did not address why Enbridge now requires the pipeline to be within the County's road allowance, impacting the County's corridor when there is an easement already in place for the majority of the route along CR 46. Please provide clarification and justification on why the new pipeline cannot be installed within the existing easement.

Question:

We would like to understand the concern expressed in this request for clarification.

Was the replacement pipe originally proposed in the existing pipeline easement?

a) If so, what precipitated the change in proposed location?

Response:

a) No. The proposed pipe was always proposed to be installed in the road right of way of County Road 46.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.8 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

ESSEX Evidence, Tab 2, Exhibit H, page 7 of 9

Preamble:

The above reference provides an email from Essex to EGI which states: **"The alignment** - The letter did not address why Enbridge now requires the pipeline to be within the County's road allowance, impacting the County's corridor when there is an easement already in place for the majority of the route along CR 46. Please provide clarification and justification on why the new pipeline cannot be installed within the existing easement.

Question:

Could the new proposed pipe not be put back in the same running line using the "lift and lay" approach that EGI promoted for some of its Panhandle Line replacement?

- a) Could additional restraint applied before the lift allow this procedure to be completed.
- b) Please provide detailed reasoning for the response.

Response:

a) and b) The new line is generally following a similar running line along County Road 46, but it cannot be installed using a lift and lay approach as was used on other Enbridge Gas pipeline projects. There is approximately 29 kms of the existing Windsor Line that runs parallel to and along County Rd 46. The existing line has many distribution stations that supply gas to many distribution pipelines as well the existing line has several hundred customers supplied directly from it. The existing line needs to remain in service until the replacement pipeline is installed and all those connections transferred, to avoid loss of service to thousands of customers. Enbridge Gas cannot have more than one active line in the existing easement, therefore the existing easement cannot have another pipeline installed within it.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.9 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

EGI Evidence, Exhibit A, Tab 2, Schedule 1, page 2

Preamble:

The EGI evidence states: "This Application will confirm to the Board that Enbridge Gas will install the NPS 6 steel for the entire length of the pipeline."

Question:

Did EGI request and receive estimates for both the entire length being installed as NPS 6 and the alternative NPS 6 for the west half and NPS 4 for the east?

- a) If so, please file the estimates?
 - i) If EGI is not prepared due to confidentiality, please provide confidentially to the Board for consideration of intervenor appropriate access.
- b) If not, please provide detailed reasoning for why not?

Response:

a) and b) These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.10 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

EGI Evidence, Exhibit A, Tab 2, Schedule 1, page 2

Preamble:

The EGI evidence states: "Essex County has also demanded that Enbridge Gas remove approximately 21.8 kms of NPS 10 Steel main from the right-of-way rather than permitting it to be abandoned in-place. The changes demanded by Essex County will increase capital construction costs by more than \$13 million..."

Question:

We would like to understand better the cost responsibility for these costs if realized.

Please explain how EGI recovers Site Restoration Costs in the Union Gas rate zone.

- a) Please provide delineation as to what those costs pay for?
- b) Please provide EGI's position on the applicability of Site Restoration Costs for the request of the Essex County.

Response:

Please see the response to Exhibit I.ED.4, for explanation of how Enbridge Gas recovers abandonment (or net salvage) costs.

- a) Site restoration typically includes all costs required to bring the site condition as near as possible to the original condition with respect to grade, topography, infrastructure, vegetation and use. Site restoration costs incurred as part of the construction of a new asset will be recovered as part of the total construction costs of the asset. Site restoration costs incurred as part of abandonment activities of an asset would be charged to accumulated depreciation.
- b) If Enbridge Gas is required to incur incremental costs to remove the NPS 10 steel main as requested by the County of Essex, as opposed to abandoning it in place, the costs will be charged/debited to accumulated depreciation consistent with the

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.10 Page 2 of 2

treatment of abandonment costs that would have been incurred to abandon the pipe in place.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.FRPO.11 Page 1 of 1

ENBRIDGE GAS INC. Answer to Interrogatory from Federation of Rental-housing Providers of Ontario (FRPO)

INTERROGATORY

Reference:

EGI Evidence, Exhibit B, Tab 1, Schedule 1, page 5

Preamble:

The EGI evidence states: "Trench excavations greater than 1.2 m requires consideration for shoring or trench sloping to project workers from the risk of excavation collapse and workers becoming buried."

Question:

We would like to understand better the alternatives that EGI considered.

Please provide EGI views on the opportunity to lay and weld the pipe outside the trench, place the sand bedding in mechanically and lay the pipe in mechanically thus minimizing or eliminating shoring costs.

- a) Please provide an estimate of the incremental cost using this approach relative to EGI preferred base case that was planned.
- b) If EGI asserts this cannot be done, please provide the specific reason and potential alternatives with their costs to overcome this barrier.

Response:

a) and b) The approach described in this question is the approach that Enbridge Gas had planned to execute for installation. As the approach is the same, there would be no incremental cost. Enbridge Gas' comments for trench width are specific to tie-in and service connection scenarios where workers are required to enter the trench to complete the welding, inspection and coating operation. There are over 300 instances plus pipeline tie-ins where workers will be required to enter the trench to perform work.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.1 Page 1 of 4

ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. A, T2, Sch.1]

Question:

- a) Please confirm that the new NPS 6 pipeline approved in EB-2019-0172 meets the definition of a transmission line, thereby requiring Leave to Construct approval. If incorrect, please explain.
- b) Please confirm that Enbridge does not require OEB Leave to Construct approval for decommissioning or abandoning an existing natural gas pipeline that is at end of life. If this is not correct, please explain.
- c) Please provide which wording within Section 101 of the Ontario Energy Board Act relates to construction of the proposed new facilities (i.e. NPS 6 pipeline) provided Leave to Construct approval (i.e. the Windsor pipeline approved in EB- 2019-0172). Please explain how this wording is applicable to Enbridge's Section 101 application and the approval sought.
- d) Please provide which wording within Section 101 of the Ontario Energy Board Act relates specifically to decommissioning or abandonment of the end of life facilities (i.e. the NPS 10 steel main). Please explain how this wording is applicable to Enbridge's application and the approval sought.
- e) Has Enbridge previously applied for any approvals under Section 101 for a pipeline project? If yes, please provide a list and summary of all projects and indicate whether OEB approval was granted for each.
- f) Please provide a list of all regulatory approvals, guidelines and requirements Enbridge must seek or comply with when decommission or abandoning a transmission pipeline.
- g) Please describe the approvals sought for the decommissioning or abandoning the end of life pipeline (i.e. NPS 10 steel main) in EB-2019-0172 and what approvals were granted in the OEB's decision in that proceeding.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.1 Page 2 of 4

 h) Please confirm that Enbridge is not required to follow guidelines that "are not statutory regulations nor are they a rule of code issued under the OEB's authority" [Reference: EB-2019-0188 Reply Argument, page 4]. If this is incorrect, please provide a list of guidelines that Enbridge must follow that are not statutory regulations nor are they a rule of code issued under the OEB's authority.

Response:

Enbridge Gas received OEB approval to construct a natural gas distribution pipeline and ancillary facilities on April 1, 2020 in EB-2019-0172. This Section 101 application is a narrow request to address the depth of cover of a certain section of the proposed pipeline and the manner of decommissioning a certain section of the existing pipeline. The OEB's Procedural Order No. 2 issued July 24, 2020 recognizes the narrow scope of this proceeding. Enbridge Gas is responding to interrogatories in accordance with this narrow scope.

The County of Essex is seeking different treatment for both depth of cover and decommissioning than was included in Enbridge Gas's EB-2019-0172 leave to construct application. The depth of cover that the County of Essex seeks is 1.5 metres where the proposed pipeline is to be installed within 6.0 metres of the edge of pavement, while Enbridge Gas's has requested a depth of 1.0 metre which exceeds the minimum requirements of CAN/CSA Z662-15 and has been found to be sufficiently deep for any anticipated loading. The County of Essex is also seeking removal of the existing pipeline, while Enbridge Gas's preference is abandonment in place as per the typical practice and as permitted in the existing 1957 Agreement.

Condition of Approval 4 to the OEB's approval in EB-2019-0172 states:

4. Enbridge Gas shall advise the OEB of any proposed change in the project, including but not limited to changes in: OEB-approved construction or restoration procedures, the proposed route, construction schedule and cost, the necessary environmental assessments and approvals, and all other approvals, permits, licences, certificates and rights required to construct the proposed facilities. Except in an emergency, Enbridge Gas shall not make any such change without prior notice to and written approval of the OEB. In the event of an emergency, the OEB shall be informed immediately after the fact.

Enbridge Gas is not able to make the changes sought by the County of Essex without approval from the OEB. This Section 101 application provides an opportunity for the Board to determine the narrow issues included herein and provides the authority for the Board to either grant the request of Enbridge Gas or to approve the changes sought by the County of Essex.

- a) Not Confirmed. The Windsor Line Replacement Project is a distribution line, not a transmission line. Enbridge Gas designed and is constructing this project's pipeline to meet the requirements of Ontario Regulation 210/01: Oil and Gas Pipeline Systems and the applicable standard CSA Z662-15 which was adopted by the TSSA, Enbridge Gas's technical regulatory, under FS-238-18 Oil and Gas Pipelines code adoption document amendment, Feb 15, 2018. The new NPS 6 pipeline approved in EB-2019-0172 meets the definition of a distribution line from the CSA Z662-15 and CSA Z662-19 (yet to be adopted in Ontario by the TSSA). A distribution line is one that exists in a distribution system that conveys gas to individual residential customers or other distribution lines. It meets the requirements of clause 12.1.2 and Figure 12.1 of CSA Z662-15 and 19 for distribution line classification as the new NPS 6 line operates at less than 30% SMYS and is downstream of odorizing and pressure regulating stations.
- b) Confirmed. The obligation to obtain leave to construct is provided within section 90 of the OEB Act and the regulations. Abandoning a pipeline may form part of a project that is subject to leave to construct.
- c) and d) S.101 (3) is provided below.

(3) Without any other leave and despite any other Act, if after the hearing the Board is of the opinion that the construction of the work upon, under or over a highway, utility line or ditch is in the public interest, it may make an order authorizing the construction upon such conditions as it considers appropriate.

Enbridge Gas would note that this Application is also based upon Condition 4 in the Board's Order in EB-2019-172. The entire sub-section applies to the installation of the pipeline. While the section provides the authority for the request in respect of the abandonment in place, the focus for the abandonment in place of the existing pipeline is respect of the phrase "upon such conditions as it considers appropriate".

As provided in the evidence, the County of Essex refuses to issue access to complete the installation of the new pipeline. The sub-section provides the Board with the authority for Enbridge Gas to be able to complete the installation. The County has also required the removal of the pipeline contrary to the intent of Enbridge Gas to abandon in place in included in EB-2019-0172. Enbridge Gas is of the view that a condition permitting abandonment in place is appropriate and should be included in the Board's decision.

- e) No.
- f) The Windsor Line replacement project is a distribution pipeline. No OEB or

regulatory approval is required for the decommissioning or abandoning of a distribution line. Enbridge Gas does follow the requirements of section 12.10.3.4 of CSA Z662-15 for the abandonment of distribution lines. See Exhibit I.STAFF.2, Attachment 1.

- g) As noted in part f), OEB approval is not required for decommissioning or abandoning distribution pipeline.
- h) The legal interpretation of the applicability of a guideline and the nature, mandatory or permissive, would depend upon the guideline, the situation, the authorizing instrument. The question cannot be definitively answered in the abstract. The TAC Guideline is not to the knowledge of Enbridge Gas a binding guideline in the present circumstance for reasons including the fact that it applies only to utilities crossing highways and not longitudinal installations.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.2 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. A, T2, Sch.1]

"Enbridge Gas has agreed to locate approximately 6.3 kms of NPS 6 steel main much closer to the edge of the right-of-way in order to avoid a future road widening that is planned to occur between 5 and 10 years into the future"

Question:

- a) Please describe why Enbridge is not able to place the entire proposed pipeline along the extreme edge of the existing right of way in a similar manner indicated above.
- b) Please provide a list of pipeline relocations Enbridge (or legacy companies) has undertaken since 2010 due to road widenings or other issues within a road allowance. For each project, please indicate the reason for the relocation.
- c) Please provide a cost estimate to relocate the proposed pipeline to the edge of the new widened right-of-way assuming that will be required in 5 to 10 years. Please provide the cost allocation (i.e. percent allocation of costs to Enbridge and other parties) for that scenario.
- d) Please provide details comparing the incremental cost of burying the proposed pipeline at the depth requested by the County of Essex vs. the cost of relocating the entire pipeline to the edge of the new widened road allowance in 5 to 10 years.
- e) Please confirm what mitigation measures Enbridge uses to monitor the long-term impacts related to abandoning a transmission pipeline in place.

Response:

a) Enbridge Gas engaged in consultations with the Town of Tecumseh to review the proposed running line and receive municipal consent for the 6.3km in this highly commercially populated area. Multiple members of municipal roads, drainage and

infrastructure teams from Town of Tecumseh met with Enbridge Gas and reviewed the project. Tecumseh advised on both actual locations of their water mains, provided information on imminent culvert repairs and a water main replacement plan anticipated in approximately 2 years. The placement of the NPS6 further to the property line was a mutually agreed upon location that coincidentally appeased the County of Essex requests as well.

The remainder of the rural portion of the running line has multiple drains and utilities in conflict with movement further away from the road edge. County of Essex has not permitted Enbridge Gas to engage in pre-construction locate activities in the ROW to validate Lakeshore Water Mains.

- b) The question is beyond the scope of this proceeding. Also, please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.
- c) Enbridge Gas cannot provide the cost estimates. Essex County did not provide the engineering documents to substantiate where in the ROW the road would be widened. As there has been no engineering documents provided it is unknown if road widening activities would in fact warrant the relocation of the proposed pipeline.
- d) Please see the response to part c).
- e) This question is beyond the scope of this proceeding. The proposed Windsor pipeline is a distribution pipeline. Also, please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.3 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. A, T2, Sch.1]

Question:

- a) Please provide a breakdown of the increased capital construction costs (i.e. estimated by Enbridge to be more than \$13 million) by major activity.
- b) Please provide a copy of all courtesy bids, reports, memos or other materials supporting the cost estimate referenced in part a.
- c) Please explain how Enbridge would allocate these costs if they were incurred and break them down by O&M and capital amounts.
- d) What asset (if any) will the proposed decommissioning/abandonment costs be allocated to?
- e) Please provide the regulatory requirements for including a project as capital in rate base.
- f) Please provide a copy of all accounting requirements, policies or guidelines used by Enbridge when assessing the ability to capitalize a project or include it in rates.

Response:

- a) The cost breakdown is provided in the pre-filed evidence at Exhibit B, Tab 1, Schedule 4.
- b) The cost estimates are based on the Extended Alliance Agreement between Enbridge Gas and the contractors. Estimates for outside vendors are based on courtesy quotes, and land estimates were extrapolated from current land costs on the Windsor Line Replacement Project.
- c) There are no O&M costs included in the cost estimates provided for the project.

Future O&M costs would be higher for service connections if the pipes is buried at 1.5m depth.

d) The decommissioning/abandonment costs will be allocated to the 'Mains' category of Asset.

e) and f) Please refer to the OEB Handbook to Utility Rate Applications, dated October 13, 2016 and the OEB filing requirements for Natural Gas rate Applications dated February 16, 2017 for the regulatory requirements for including a project as capital in rate base and the requirement, policies and guidelines to capitalize a project in rate base. These questions are beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.4 Page 1 of 2

ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. A, T2, Sch.1]

"If ordered to incur these costs, Enbridge Gas will seek recovery through rates".

Question:

- a) Please clarify who Enbridge believes would "order" the company to incur these costs?
- b) Please explain why Enbridge was not able to identify the requirements or issues with the County of Essex during project consultation/planning and include these costs in the Leave to Construct application.
- c) Please provide a list of Enbridge (including legacy companies) projects receiving Leave to Construct approval since 2010 where the Company has requested or notified the OEB of a project variation following OEB approval. For each instance, please provide a brief summary of the variance.
- d) Please confirm that all project costs above those approved by the OEB in EB-2019-0172 would not be recoverable from Ratepayers unless otherwise approved by the OEB.
- e) Please confirm who is liable for any future costs should a pipeline be abandoned in place and any calculations or assessment Enbridge has undertaken to assess that liability.

Response:

- a) Whether these costs are to be incurred will depend on the OEB decision in this proceeding.
- b) Enbridge Gas identified the safety concerns with the County of Essex allowing no lane closures and identified significant differences from typical construction of distribution main with cost implications to project throughout discussions with Essex

County. Costs for typical roadside construction with appropriate lane closures at a .75m depth of main would have been included with applicable contingency to the estimates provided in the LTC.

- c) This question is beyond the scope of this application. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1
- d) Any costs for recovery from ratepayers are subject to OEB approval.
- e) This question is unclear. In general, the liability of the abandoned pipeline is fact based and it depends on the specific circumstances. The applicable Franchise Agreement has general language on indemnity between the municipality and Enbridge Gas.

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.5 Page 1 of 2 Plus Attachment

ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. A, T2, Sch.1]

"In the alternative to a), an order, pursuant to section 101 of the Ontario Energy Board Act, 1998, S.O. 1998, c-15, Schedule B and Condition 4 of the Decision and Order in the Leave to Construct Application, direction and authorization, in whole or in part, to:

- i. construct a work upon, under or over a highway, utility line or ditch at a depth of cover of approximately 1.5 meters and otherwise in accordance with CSA Z662 and Enbridge Gas's construction policies and standards; and/or
- ii. Removal and remediation of approximately 21.8 kms of NPS 10 steel existing steel main."

Question:

- a) Enbridge often varies the depth of cover for pipelines following OEB approval based on final permit conditions and/or field conditions. Please describe why Enbridge believes it requires the OEB to issue an additional order to increase depth of cover for the pipeline in this specific case?
- b) Please provide a list of all permits or approvals still outstanding (including approvals from County of Oxford) for the proposed Windsor NPS 6 pipeline. Please provide an estimated timeline for when each outstanding permit or approval is expected.

Response:

a) Enbridge Gas often varies depth of cover for singular crossing of drains and water courses but does not often alter overall distribution mains from their proposed design for such significant lengths of construction projects. These crossings are identifiable at the LTC stage and can be incorporated into such approval requests. The current requirements of Essex County are typical. For the Windsor Replacement Line project, Enbridge Gas has not been able to secure consent from Essex county for

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.5 Page 2 of 2 Plus Attachment

the construction of the project at an appropriate depth of cover. Essex County is withholding approval for construction unless Enbridge Gas makes significant and costly departures from the requirements of the CSA Z662 code and Enbridge Gas's construction policies and procedures.

b) The response is provided assuming the references to County of Oxford are intended to mean Essex County. The permits that are currently outstanding for the Project are from Essex County and these include Municipal consent, Crossing agreement, encroachment and entrance permits. Essex County had committed to granting all permits immediately upon signing of the RUA. ERCA has provided their approval for construction methods proposed for all drains and watercourses but has expressed that as per a standard process they will not issue Enbridge Gas clearance until the County of Essex grants consent.

Please see Attachment 1 for the email from Krystal Kalbol May 22, 2020 indicating that no permits for any works will be granted until the RUA is signed and executed after repeatedly asking for opportunities of daylighting to identify location of utilities and existing infrastructure.

Filed: 2020-08-14, EB-2020-0160, Exhibit I.PP.5, Attachment 1, Page 1 of 2

From:	Krystal Kalbol		
То:	Tammy Mungar		
Cc:	Kristoffer Balallo; Jane Mustac; Mark Murray		
Subject:	[External] RE: Daylighting		
Date:	Friday, May 22, 2020 12:47:11 PM		
Attachments:	logo 8780877d-8497-47de-9ce4-8de19d6537a511111111.jpg		
	Twitter 7d425643-44d5-4c71-bf70-80ddc2b5b0c511111111.png		
	Eacebook f1ab0de0-1179-48a2-a981-bbf05129d66c11111111 ppg		

EXTERNAL: PLEASE PROCEED WITH CAUTION.

This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Tammy,

Thank you for the follow up email.

I just wanted to update you to let you know that this project was presented at Council on Wednesday night with the recommendation that the Road User Agreement could be executed only if the outstanding conditions pertaining to depth and/or alignment are met by Enbridge. My understanding is that these remaining conditions are still being reviewed and discussed through both the County and Enbridge's legal channels. Unfortunately at this time, we are not able to issue any approvals/permits for this project until we hear that the agreement has been satisfied. I am not aware of any timelines associated with this.

If you require further details the council report can be found at the below link:

https://events.countyofessex.ca/meetings/Detail/2020-05-20-1900-County-Council-Meeting-Regular-Agenda

Regards,



Krystal Kalbol Manager, Transportation Planning & Development County of Essex 360 Fairview Ave. W. Suite 315 Essex, ON N8M 1Y6 P: 519-776-6441 ext. 1316 F: 519-776-4455 TTY: 1-877-624-4832

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From: Tammy Mungar <<u>Tammy.Mungar@enbridge.com</u>>
Sent: May 22, 2020 11:09 AM
To: Kristoffer Balallo <<u>KBalallo@countyofessex.ca</u>>
Subject: Daylighting

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning Kristoffer

Wondering if you had a chance to discuss the possibility of our going out and complete our preconstruction activities to locate utilities along the ROW?

It is a critical part of construction execution for us to evaluate the design and we are quite a number of weeks behind on now from our original schedule.

Please advise.. and as always ~ thank you

Tammy Mungar Team Lead Construction

ENBRIDGE GAS INC. CELL: 519-365-1158 | <u>tmungar@enbridge.com</u> 50 Keil Drive North, Chatham On N7M 5M1

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Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.6 Page 1 of 2 Plus Attachment

ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. B, T1, Sch.1]

Question:

- a) Please confirm that the frost line is approximately 1.2 meters below ground.
- b) Please confirm that the frost line increases under compacted soil.
- c) Please provide a copy of the sections relevant to depth of cover from all policies, manuals, guidelines (including planning, construction and operations).
- d) Please explain how Enbridge has installed previous transmission pipelines at a depth greater than 1.2 meters without requiring workers to be in the trench.
- e) How many direct service connects will Enbridge have off the proposed NPS 6 steel pipeline?
- f) How many direct service connections are currently attached to the NPS 10 steel pipeline (for the portion proposed to be abandoned).
- g) Enbridge indicates that "Municipal drains are generally a regulated area with numerous conditions and restrictions for both construction methods, restoration and timing windows". Please file all sections of the Environmental Assessment conducted for the project that assess municipal drains and the mitigation measure that will be required.
- h) Please explain how the municipal drains could be dredged if the proposed pipeline is installed above the drain or at a shallow depth.
- Please confirm that directional drill is the typical method of installation for an NPS 6 pipeline under watercourses, municipal drains and sensitive water features. If not correct, please describe the method typically used and provide LTC examples of recent use. [Reference: One recent LTC project approved by the OEB using this method is EB-2019-0188, see Exhibit B, Tab 2, Schedule 11].

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.6 Page 2 of 2 Plus Attachment

Response:

- a) According to Ontario Provincial Standard, OPSD 3090.101, the frost depth in Essex County is approximately 1.0 m.
- b) Not necessarily. Depth of frost penetration is more related to soil classification, and whether the soil is cohesive or non-cohesive. Further, snow cover acts as insulation and undisturbed snow will reduce the depth of freezing.
- c) Enbridge Gas design and construction meet the requirements of Ontario Regulation 210/01 and CSA Z662 and company construction and maintenance (C&M) manual procedures and specifications for distribution lines. For the new NPS 6 line, please reference Exhibit I.STAFF.2, Attachment 1 for Table 12.2 of CSA Z662-15 and Attachment 1 with this response for Enbridge Gas Construction and Maintenance Manual, C&M 3.9, table 3.9.1 for cover and clearance for distribution mains/lines.
- d) This current project is a distribution line not a transmission line. One method to avoid work in trench is to utilize directional drilling methods. This method however cannot be utilized to attach service connections in a distribution project like the Windsor Line Replacement. All current and future service connections will require trenching and shoring methods be adhered to if depth of the trench is 1.2m or greater. At a 1m depth to top of main to excavate room for welding etc. on new attachments, the depth will often exceed 1.2m and proper trenching methods will be required. At a depth to top of main of .75m it is an exception that any additional trenching or shoring methods are required to attach service connections.
- e) With growth there are approximately 406 direct service connections planned on the proposed NPS6.
- f) There were 399 services noted as connected to the NPS10 in the LTC application and the entire length of the NPS10 for the Project will be abandoned.
- g) to i) These questions are beyond the scope of this proceeding. Please see the preamble to Enbridge Gas's response at Exhibit I.PP.1.



3.9

Specification for Excavation, Cover, and Clearance

3.9.1 Application

This specification applies to all excavations and new installations, regardless of excavation method as well as new underground structures installed in close proximity to existing pipelines. For additional information regarding excavating and blasting rock, refer to C&M Manual 3.10, "Specification for Rock Excavation".

3.9.2 References

- C&M Manual 3.S-608-1, "Installation of Tracer Wire"
- <u>C&M Manual 3.8, "Specification for Sod Lifting and Re-vegetation</u>
- <u>C&M Manual 3.10, "Specification for Rock Excavation"</u>
- <u>C&M Manual 3.24, "Specification for Tile Repair"</u>
- <u>C&M Manual 3.37, "Specification for Boring and Directional Drilling"</u>
- <u>C&M Manual 3.41, "Specification for Field Bending of Steel Pipe"</u>
- C&M Manual 3.51, "Specification for Construction & Maintenance Planning"
- <u>C&M Manual 3.53, "Specification for Crossing Sewer Lines"</u>
- <u>C&M Manual 12.2, "Line Locates"</u>
- C&M Manual 12.3, "Uncovering Active Pipelines"
- <u>C&M Manual 12.4, "Sloping and Shoring"</u>
- <u>C&M Manual 12.5, "Gas Line Supports"</u>
- <u>C&M Manual 18.2, "Confined Spaces"</u>
- <u>C&M Manual 18.27, "Working Near Overhead Electrical Lines"</u>
- ECS Manual, "Hazardous Materials Silica Handling, Storage, and Disposal"
- TSSA, "Guidelines for Excavating in the Vicinity of Utility Lines"

3.9.3 General

3.9.3.1 **Prior to Excavation**

Before trenching, request line locates and verify paperwork to determine the location of any existing underground utilities.

Conduct an assessment of the site to determine requirements for the excavation and determine if support for the excavation is required. Adequate support may be achieved by proper sloping, shoring, or an engineered support system. Follow C&M Manual 12.4, "Sloping and Shoring".

In accordance with CSA Z662-15, Clause 7.9.8, where welding is to occur within a bell hole, that bell hole shall be of a size to provide the welder with sufficient access

Construction and Maintenance Manual



so that their skill and safety are not impaired. This includes ensuring there is enough space to ensure adequate ventilation.



Varying site conditions can increase the risk of trench wall failures. To reduce the risk of trench wall failures follow section 12.4.3.1 – Mitigating Trench Wall Failures found in C&M Manual 12.4.

Upon arrival at the excavation site and prior to beginning the excavation, perform a visual inspection of the located area to identify any possible change in conditions. Readily visible signs of underground facilities include pedestals, risers, meters, new trench lines, and service feeds from buildings and homes.

In addition to the visual inspection, a power sweep shall be completed in the immediate excavation area following the direction in C&M Manual 12.2, "Line Locates" to determine if there is an unmarked current carrying utility.



Caution

The power sweep function may not detect power lines that have little or no load. As such, the visual review of the excavation site must still be completed to identify signs of unmarked utilities.

A power sweep is not required to be completed if any of the following apply:

- Excavating using Hydrovac technology.
- Trenchless technology is used where utilities being crossed are daylighted to confirm location and an electrical strike alarm is in use.
- New installations in previously undeveloped areas where utilities are installed via joint trench construction.
- **NOTE:** The power sweep does not replace the need for a valid locate, and it is only to be used to determine the presence of an underground conductor prior to excavating. All excavation near locate markings must be done in accordance with TSSA "Guidelines for Excavating in the Vicinity of Utility Lines" regardless of power sweep result.

Where visual evidence of an unmarked underground facility exists or the power sweep identifies a defined signal that has not been located, the options are as follows:

- Review if another location within the limits of the locate is suitable for excavation and move the excavation location within the locate limits if possible.
- Hand dig or hydrovac in the area of the signal to determine the source. Hand digging/hydrovac is only required to the planned working depth if no source is encountered.
- Contact the suspected utility, Locate Service Provider (LSP), or property owner (if private infrastructure is suspected) to review the locate.
- **NOTE:** Cover, such as reinforced concrete, has the potential to yield interference on the power sweep. If interference is encountered, the concrete cover can be removed and a sweep should then be conducted prior to further excavation.

Construction and Maintenance Manual

The controlled version is located on the Source. All copies (printed or electronic) are uncontrolled.



Review and complete the Worksite Hazard Checklist (Form 8224) as per the requirements in C&M Manual 3.51, "Specification for Construction & Maintenance Planning". Ensure appropriate control methods are present to mitigate any potential hazards identified on the checklist.

A minimum 1.0 m buffer zone shall be clearly designated and marked off around the work area. Appropriate methods of demarcation include white lining, pylons, caution tape, or spotters. If soil conditions are unstable, consideration should be given to expand the safety zone and establish shoring as required.

3.9.3.2 **During Excavation**

When working around excavating equipment:

- If not involved directly with the work, maintain a minimum of 1.0 m safe distance from the work area, including spoil pile, rocks, construction material and any moving machinery.
- The buffer zone is measured from the edge of the excavation to the edge of any equipment or construction material.
- When working in the excavation area, where possible, stay beyond the moving radius of the equipment.



Employees are to avoid contact with mechanical equipment in the process of excavating. In situations where excavation equipment must be cleaned prior to removal from the excavation, utilize a tool with an insulated wood or fibreglass handle.

• Before entering the moving radius of the equipment, make eye contact with the operator. While working, be aware of equipment blind spots and avoid entering or standing in them.

Where an operator of a vehicle or mobile equipment does not have a full view of the intended path of travel or excavation, the equipment may only be operated as directed by a signaler who is competent and stationed in full view of the operator, the intended path of travel, and stationed clear of the intended path of travel.

If the excavation spans more than one day, ensure that the bell holes are fenced and marked with restricted area flagging, if permitted. If not permitted, backfill the bell holes.



Keyhole excavations and vaults may be considered a confined space as per C&M Manual 18.2, "Confined Space". Prior to working in or entering a keyhole, ensure the requirements of C&M Manual 18.2 are met and an atmospheric hazard assessment is completed.

3.9.3.3 Non-Invasive Excavation (≤ 200 mm)

Excavations to access known Union Gas facilities in soft surface locations (e.g., grass) buried no more than 200 mm can be completed without obtaining locates under the following conditions (e.g., sod covered valve box, shallow buried meter stop):

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- Conduct a site assessment.
- Confirm location of desired facility using GIS data, pipeline locators (as per C&M Manual 12.2, "Line Locates") and site information.
- Perform a power sweep following the direction in C&M Manual 12.2, "Line Locates" to determine if there is a current-carrying utility in the vicinity. If a current-carrying utility is identified, stop work and obtain locates before continuing.
- Utilize a bar finder as necessary (e.g., covered valve box lid).
- Gently probe with a screwdriver (or equivalent) to a depth no deeper than 200 mm. If the facility has not been discovered through probing, locates must be obtained before excavation.
- Use a hand shovel or manual sod lifter to gently expose Union Gas facility. Use water to moisten the surrounding dirt, as required.

NOTE: For below grade meter stops exposed using this method, complete a prework form to have the service riser raised.

3.9.4 Method of Construction

Dig trench on line as located by the Qualified Individual or as staked. Complete trenching in a manner that will offer smooth, continuous support to the entire length of the pipeline. Excavate the trench to a width not less than 150 mm greater than the outside diameter of the pipe or twice the outside diameter of the pipe, whichever is the least.

3.9.4.1 **Cover**

For new installation, excavate the trench to a depth that will provide minimum cover over the pipe per Table 3.9.1 or as specified in the drawing approved by Pipeline Engineering. For existing piping that was installed prior to 1980, consult Pipeline Engineering for the required minimum cover.

Table 3.9.1: Minimum Cover Requirements for New Installations

Location	Minimum Cover for Buried Pipelines			
	Distribution Main	Distribution Service	Transmission (30% SMYS)	
GENERAL				
Agricultural	1200 mm	1200 mm	1200 mm	
Non-agricultural	1000 mm ³	500 mm ¹	1200 mm	
Non-agricultural, rock excavation	600 mm ¹	300 mm ²	1200 mm	
ROADWAYS				
Road crossing ⁴	1000 mm ³	750 mm ²	1200 mm	

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Location	Minimum Cover for Buried Pipelines		
	Distribution Main	Distribution Service	Transmission (30% SMYS)
Untraveled portion of right-of-way	750 mm ¹	500 mm ¹	1200 mm
RAILWAYS			
Below base of rail (uncased)	3250 mm	3250 mm	3250 mm
Within rail ROW/ditch (uncased)	2000 mm	2000 mm	2000 mm
Below base of rail (cased)	2000 mm	2000 mm	2000 mm
Within rail ROW/ditch (cased)	1200 mm	1200 mm	1200 mm
WATERCOURSE			
Water crossing ⁵	1200 mm	1200 mm	1200 mm

¹ Provide an additional 250 mm of cover where the line crosses drainage or irrigation ditch inverts, creeks or land subjected to flooding.

² Provide an additional 450 mm of cover where the line crosses drainage or irrigation ditch inverts, creeks or land subjected to flooding.

³ Provide an additional 200 mm of cover if the pipeline operates above 1900 kPa in urban or built-up areas.

⁴ Including below the road and shoulder, extending a minimum of 7.0 m beyond the edge of the travelled surface and measured perpendicular to the centreline of the road.

⁵ A water crossing is considered to be a crossing by a pipeline of a bay, lake, river or major stream.

NOTE: Work taking place within a municipally controlled easement will adhere to the cover requirements of a main in right-of-way (road).

The above criterion is the requirement for minimum cover. Should specific site conditions present additional risk due to additional factors, the cover can be increased to mitigate this risk.

In wet terrain requiring the installation of concrete/swamp weights, excavate to sufficient depth to give a minimum cover over the top of the concrete/swamp weights, in order to meet the above requirements.

Where the depth of cover requirements outlined in Table 3.9.1, "Minimum Cover Requirements for New Installations" cannot be met, pipelines may be installed with less cover upon approval by Pipeline Engineering. The approval of a reduced depth of cover may be conditional upon the installation of additional protection requirements, as specified by Pipeline Engineering.



3.9.4.2 Clearance to Underground Utilities

Table 3.9.2, "Pipeline Clearances between Underground Utilities and/or Structures" outlines the requirements for clearances between company pipelines and other known utilities and structures, not including electric utilities (>30kV), above or below grade. For clearances to electric utilities (>30kV), see Section 3.9.4.3.

Table 3.9.2: Pipeline Clearances	between Undergr	ound Utilities and/o	r Structures
Table 5.5.2. Fipeline Clearances	Detween Ondergi	ound oundes and/o	Junctures

	Other Utility and/or Structure		
Company Pipeline	Gas, Water, Sewer, Communication, Hydro (< 30kV), etc.	Drainage Tile (clay tile, Big 'O' perforated tile)	
Steel	300 mm *	50 mm	
Plastic (tracer wire)	300 mm *	50 mm	

* When crossing other underground utilities and/or structures, reduced clearance to a minimum of 50 mm is allowable provided all the following requirements are completed and documented:

- a. The reduced clearance is approved by the other utility prior to installation.
- b. Double wrap steel pipelines with Tapecoat 20 for a minimum of 100 mm on each side of the crossing.
- c. Place an additional durable, non-conductive material such as rubber or plastic (minimum 9 mm thick) between the Company pipeline (including tracer wire) and the other utility/structure to prevent contact for a minimum of 100 mm on each side of the crossing.
- d. When a reduced clearance is required, clearly note all exposed underground structures (including culverts, sewers, etc.), clearances and installed protection (b & c above) on the as-built drawing or DMWO.

Installations through trenchless technologies must meet the requirements in Table 3.9.2, except protection requirement c), as well as the following additional conditions:

- The crossing location is daylighted as per section 3.53.7.
- The drill head is only being pushed past the facility and is not spinning until the head has exited the pit.
- The pit has a minimum clearance of 300 mm from buried utilities so that when the drill head enters the pit, it can be adjusted if it appears that it will contact the existing facility.

Pipelines must not cross below electrical transformer pads or electrical ground grids/rods/electrodes (i.e., 300 mm clearance must be a horizontal separation).

3.9.4.3 Clearance to Electric Utilities (>30kV)

Below Ground Cable Systems



Where below ground cables and associated grounding components operating greater than 30 kV are less than 10 m from a pipeline at any point, OR where cables are within 100 m and parallel for a minimum of 1000 m to a pipeline, the following is required:

- For steel pipelines, an engineering study by an approved consultant is required. Contact Stations, Electrical & Controls Engineering.
- For plastic pipelines, install dead front test boxes per C&M Standard Drawing 3.S-608-1, "Installation of Tracer Wire". When the cable is within 1 m of the plastic pipeline, an additional durable, non-conductive material such as rubber or plastic (minimum 9 mm thick) shall be installed between the company pipeline (including tracer wire) and the other utility/structure to prevent contact for 1 m on each side.
- **NOTE:** Below ground electric utilities operating above 30 kV installed with a separation of 1 m or less from steel pipelines significantly reduces the ability to mitigate. Any splices incorporating ground discharge points (bare metallic contact to earth) installed with a separation of 10 m or less from the pipeline significantly reduces the ability to mitigate.

Overhead Power Lines



Where equipment is to be operated near a live power line carrying electricity at more than 750 V, refer to C&M Manual 18.27, "Working Near Overhead Electrical Lines".

Where overhead power line systems operating greater than 30 kV are within 100 m and parallel for a minimum of 1000 m to a pipeline, the following is required:

- For steel pipelines, an engineering study by an approved consultant is required. Contact Stations, Electrical & Controls Engineering.
- For plastic pipelines, systems will require dead front test box installations as per C&M Standard Drawing 3.S-608-1along with an additional durable, non-conductive material such as rubber or plastic (minimum 9 mm thick) between the Company pipeline (including tracer wire) and the other utility/structure to prevent contact for 300 mm each side.

Table 3.9.3 outlines the minimum offsets for pipelines to overhead tower footings and any associated grounding components are required:

Table 3.9.3: Pipeline offsets to overhead tower footings

System Voltage (kV)	Offset (m)
35	2.1
69	5
115	9
138	11

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3.9 Specification for Excavation, Cover, and Clearance



System Voltage (kV)	Offset (m)	
230	18	
500	41	
735	60	

Where these offsets cannot be met, the following is required:

- For steel pipelines, an engineering study by an approved consultant is required. Contact Stations, Electrical & Controls Engineering.
- For plastic pipelines, systems will require dead front test box installations as per C&M Standard Drawing 3.S-608-1along with an additional durable, non-conductive material such as rubber or plastic (minimum 9 mm thick) between the Company pipeline (including tracer wire) and the other utility/structure to prevent contact for 300 mm each side.

3.9.4.4 Clearance to Electrical Equipment >30 kV

It is important to maintain adequate separation from electric utility and customer electrical equipment 30 kV and greater, to protect personnel and facilities. The following requirements apply to both pipelines and station facilities (system and customer).

NOTE: Additional mitigating equipment is required for any natural gas powered generators fed by Union Gas station facilities. For these installations please contact Stations, Electrical & Controls Engineering.

Table 3.9.4 outlines the minimum below grade separation distances of Union Gas metallic assets (pipelines and stations) to the >30 kV electrical equipment and associated grounding components.

All above grade Union Gas assets must maintain a minimum separation of 2.4 meters from the above grade electrical equipment

NOTE: For stations, the prescribed separations apply only to any metallic component of the station (e.g., tracer wire on plastic pipe, steel pipe, metal fences, metal posts, metal bollards, metal enclosures or equipment).

System Voltage (kV)	Minimum separation (m)	
35	2.1	
69	5	
115	9	
138	11	

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3.9

System Voltage (kV)	Minimum separation (m)
230	18
500	41
735	60

NOTE: A study may be required if the above minimum separations are not achieved, contact Stations, Electrical & Controls Engineering.

3.9.5 Additional Considerations

Where a facility has not been uncovered, probe or expose by hand digging to verify depth.

NOTE: Hydrovac can be used as an alternative to hand digging provided the requirements of the TSSA document, "Guidelines for Excavation in the Vicinity of Utility Lines", are followed.

Where a trench is excavated underneath a gas pipeline, refer to C&M Manual 12.5, "Gas Line Supports".

Where trenching is across or adjacent to roads, highways, railways, irrigation or drainage ditches, creeks, rivers, ravines, and other water courses, farm terraces, and at points where the contour of the earth may require extra depth, the contractor will, at no additional compensation, excavate to such additional depth as may be necessary to meet the requirements of the company, the landowner, and any public or private authority having jurisdiction over same. The contractor shall maintain control of ditch water in sloping land when trenches are open by the use of adequate culverts, hard plugs, soft plugs, water stops, berms, surface ditching, or dikes. Dig the trench to such additional depth necessary to lay the pipeline under other pipelines or underground metallic structures to the clearances required in this specification.

Where drain tile is encountered, follow the requirements and instructions for clearances and damage repair as described in C&M Manual 3.24, "Specification for Tile Repair".

Field bending of steel pipe should be minimized. To accomplish this cut the trench deeper in approaches to roads, railway crossings, uneven ground surfaces, and through small ravines. When practical, if the road being crossed is a Provincial Highway, or when a Municipal drain is located within the right-of-way at the crossing point, dig the trench in such a manner that no bends are installed on any road crossing within 15 m of either limit. It is the company's intention that the contractor operates the trenching machine at various depths, to achieve the required depth of cover. Maximum bending limits are specified in C&M Manual 3.41, "Specification for Field Bending of Steel Pipe".

When determining the pipeline route or right-of-way location, any requirements to avoid damage to cultivated shrubbery, trees, etc. or allow for future development on



private land must be included in the planning process to ensure company requirements can be met.

When a pipeline is laid across lawns, remove the turf and lay aside to facilitate replacement after the pipeline is laid and backfilled as per C&M Manual 3.8, "Specification for Sod Lifting and Re-vegetation". When using heavy equipment on lawns, take care to avoid damage to the turf and shrubbery. Cleated equipment is not permitted. Bore under trees or tree roots at the direction of the Qualified Individual.

Where possible, in areas where the paving extends from building line to building line, lay the pipeline under the sidewalk rather than under the road pavement.

Bore or directional drill paved road crossings at the discretion of the Qualified Individual and as outlined in C&M Manual 3.37, "Specification for Boring and Directional Drilling.

3.9.6 Uncovering Active Pipelines

The uncovering of active pipelines is to be completed in accordance with C&M 12.3, "Uncovering Active Pipelines".

3.9.7 Concrete or Asphalt Removal

If Union Gas employees are milling, cutting, or otherwise disturbing concrete or asphalt, follow the ECS Manual, "Hazardous Materials – Silica – Handling, Storage, and Disposal".

To minimize the amount of breaking and repair, use a saw to score the concrete so that a clean sharp edge will be left when the trench allowance is broken out.

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ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. B, T1, Sch.1]

"Essex County's specific requests for the full abandonment and removal of the existing Windsor Line are inconsistent with Enbridge Gas's typical practice and were not planned as part of the Project's 2021 construction plan".

Question:

- a) In EB-2019-0188 (reference: Reply Argument, page 5) Enbridge Gas stressed that "no two projects approved by the OEB and completed by Enbridge Gas are identical". Factors such as the location of construction (e.g. soil conditions, road allowance, private easement, etc.) and the overall scope and complexity of a project all impact costing. Please explain why the request by Essex County is not applicable, if each project needs to be assessed independently rather than using a standard approach.
- b) Please confirm what regulatory requirement drives the need for an archeological assessment in order to remove the end of life NPS 10 pipeline.
- c) If an archaeological assessment is required, please explain why the archeological assessment conducted for the new pipeline is not sufficient given that they are in the same disturbed road allowance.
- d) Please provide a copy of all correspondence with the County of Oxford related to proposed NPS 6 pipeline project and proposed NPS 10 pipeline abandonment.
- e) Please provide a list of all permitting authorities that intervened in the EB-2019-0172 proceeding.

Response:

a) As indicated in EB-2019-0188, no two projects are identical. Typically, when Enbridge Gas seeks to install distribution mains within any municipality, it would apply to the applicable road authority for consent to install the project, taking into account the project specificity as referred to in the question. Essentially, this consent is to approve the location for the installation of a pipeline to avoid conflicts with current and future infrastructure. These consents are usually not controversial as the applicable municipality and Enbridge Gas have been engaged in discussions to find a suitable location for several months. For the Windsor Line Replacement project, Enbridge Gas has been unable to obtain consent despite the lack of a direct conflict. Essex County is withholding approval for construction unless Enbridge Gas makes significant departures from the requirements of the CSA Z662 code and Enbridge Gas's construction policies and procedures.

b) The regulatory driver for archaeological assessments is the Ontario Heritage Act¹ as outlined in Section 4.3.4 of the Ontario Energy Board Guidelines². The Stage 1 Archaeological Assessment reviewed the archaeological potential within 50 m of the existing Windsor Pipeline and the proposed Windsor Pipeline Replacement project, and determined that much of the area investigated retained the potential for the identification and documentation of archaeological resources.

The Stage 1 Archaeological Assessment was completed in accordance with the Ministry of Tourism, Culture and Sport (now known as the Ministry of Heritage, Sport, Tourism and Culture Industries) Standards and Guidelines for Consultant Archaeologists³. A Stage 2 Archaeological Assessment is required for any portion of a project's anticipated construction easement which impacts an area of archaeological potential. With respect to the removal of the existing Windsor Pipeline, the "construction easement" would include the pipeline itself, and the temporary workspace required to remove the pipe.

c) The Stage 1 Archaeological Assessment reviewed the archaeological potential within 50 m of the existing Windsor Pipeline and determined that much of the area investigated retained the potential for the identification and documentation of archaeological resources. The Stage 1 Archaeological Assessment concluded that a Stage 2 Archaeological Assessment was required for any portion of the anticipated construction easement which impacts an area of archaeological potential. Stage 2 Archaeological Assessments were completed for the construction easement necessary for the Windsor Pipeline Replacement pipe; the construction easement necessary for Windsor Pipeline Replacement pipe does not completely overlap with the construction easement necessary for the removal of the existing Windsor Pipeline.

¹ Government of Ontario. 1990. Ontario Heritage Act, R.S.O. 1990, c. O.18.

² Ontario Energy Board. 2016. Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario. 7th Edition

³ Ministry of Tourism, Culture and Sport. 2011. Standards and Guidelines for Consultant Archaeologists.

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- d) The response is provided assuming the references to County of Oxford are intended to mean Essex County. Please see Exhibit B, Tab 1, Schedule 7 for the summary of correspondence and timeline with the County of Essex.
- e) There were no permitting authorities that intervened in the EB-2019-0172 LTC proceeding. Please see the Board's Procedural Order No.1 dated October 11, 2019 for the parties approved as intervenor in this proceeding.

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ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. B, T1, Sch.2]

Question:

- a) Please confirm that CSA Z662 sets the minimum technical standards for which Enbridge is required to use.
- b) Please file the sections of CSA Z662 which pertain to abandonment of pipelines.
- c) Please provide a copy of sections relevant to pipeline decommissioning or abandonment from all policies, manuals, guidelines (including planning, construction and operation).
- d) Has Enbridge undertaken an assessment of the long-term impacts related to abandoning a transmission pipeline in place (either this specific pipeline or a generic assessment that would be applicable). If yes, please provide a copy of all studies, presentations and materials related to the assessment, impacts and required mitigation measures.
- e) Please provide a copy of all analysis, presentation, reports or other materials that compare abandoning in place vs. removing the pipeline.

Response:

- a) Yes, the minimum applicable technical standard for this project is CSA Z662-15.
- b) The applicable section of CSA Z662-15 for the abandonment of distribution lines is 2.10.3.4. Please see Exhibit I.STAFF.2, Attachment 1.
- c) Please see the response to part b) and Attachment 1 with this responses for Enbridge Gas' Construction and Maintenance Manual (C&M) section 8.3 for abandonment procedures for rural pipelines.

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- d) No, this is not a requirement.
- e) Please see response to part d).



Abandoning Mains

8.3.1 Application

This procedure applies to the abandonment of Transmission or Distribution mains which have been physically isolated and disconnected from active facilities (mains, services, stations) and purged.

8.3.2 References

- <u>C&M Manual Section 3.16, "Specification for Tie-in to Active Mains or Main</u> <u>Abandonment"</u>
- <u>C&M Manual Section 4.11, "Controlling Static Electricity on Plastic Pipe"</u>
- <u>C&M Manual Section 7.5, "Purging Gas or Air From a Pipeline"</u>
- <u>C&M Manual Section 7.7, "Cutting and Welding on Live Pipelines"</u>
- <u>C&M Manual Section 14.21, "Procedure for Isolation"</u>
- <u>C&M Manual Section 16.15, "As-built Records"</u>
- <u>C&M Manual Section 18.5, "Bonding Cables"</u>
- <u>ECS Manual, "Hazardous Materials Pipeline Contaminants Handling,</u> <u>Storage and Disposal</u>
- <u>EHS Manual Section 11, "Hazardous Materials Pipeline Coating Handling,</u> <u>Storage and Disposal"</u>

8.3.3 Before Starting Work

- Before starting any work, verify the main has been physically isolated and disconnected from all active facilities (mains, services and stations). Verify that the isolated section has been fully purged of natural gas using a combustible gas indicator.
- When working on private property, ensure all landowners that will be impacted by the abandonment work are notified. Contact all appropriate authorities (e.g., railway, waterway) to ensure that they are aware of the abandonment plan.
- For pipelines that will be abandoned in place, consider the effects of drainage in the vicinity of the pipeline. (If it becomes perforated from corrosion, it could act as a drainage conduit.)
- If removing sections of pipeline larger than NPS 12 as part of abandonment, be aware of the impact of subsidence. Use non-compactable (or non-shrinkable) fill to replace the pipeline where necessary.
- When removing pipe that is NPS 4 and larger, and within 250 m downstream of a Gate Station/Town Border Station or Compressor Station, the pipe is to be internally swabbed to check for PCB contamination. Contact EHS Specialist for assistance.

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8.3 Abandoning Mains



• If the main is an NEB line, contact Pipeline Engineering prior to any abandonment activities.

8.3.4 **Procedure**

For lines where induced AC current is a potential, ensure bonding cables are installed according to C&M Manual Section 18.5, "Bonding Cables" prior to any work on the pipe.



For PE lines, ensure static electricity is controlled when performing work according to C&M Manual Section 4.11, "Controlling Static Electricity on Plastic Pipe."

- 1. Ensure all valves along the section to be abandoned are in the open position.
- 2. Determine where the pipe is to be cut into sections as per Table 8.3.1, "Main Abandonment Cutting Requirements."

Main Location	Main Size	Maximum Section Length
Urban area	All	150 m*
Rural area	Up to and including NPS 4	750 m
	Over NPS 4	450 m
Highway or railway crossings	All	n/a

Table 8.3.1: Main Abandonment Cutting Requirements

* Mains cut in urban areas should be cut at every block. If this is not feasible, cut sections should not exceed 150 m in length unless authorized by Pipeline Engineering.

- *NOTE:* When planning sectionalization locations, determine the low point(s) of the pipe to swab for liquids and condensates. For lines which contain liquids or condensates which exceed the capacity of a spill kit, run a pipeline ball or poly pig (soft skinned for plastic pipe) through line. Collect and dispose of any liquids and condensates found, according to ECS Manual, "Hazardous Materials Pipeline Contaminants Handling, Storage and Disposal."
- *NOTE:* Liquid condensates are light hydrocarbons in liquid form that can prevent a 'zero' reading on a combustible gas indicator when purging. Condensates are not groundwater, brine, oil, sludge, carbon, etc.
- 3. Remove and dispose of pipe coating in the area(s) where the pipe will be cut.

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Handle and dispose of coal tar coating according to EHS Manual Section 11, "Hazardous Materials – Pipeline Coating – Handling, Storage and Disposal".

- 4. Before cutting into the main, check for the presence of pipeline liquids or condensates at the planned location of all cuts. Drill into the top of pipe and swab down to the bottom checking for liquids. Collect, remove and dispose of any liquids that are found, according to ECS Manual, "Hazardous Materials – Pipeline Contaminants – Handling, Storage and Disposal."
- 5. Extract and reuse valve boxes where practical. Where not practical:
 - Cut off valve boxes at a minimum 100 mm below grade and backfill the void to grade using native material.
 - Where the valve box cannot be cut below grade, remove lid and fill the valve box to grade level with material equivalent to surrounding surface.
- 6. Remove all valve box remnants from site and discard in an appropriate receptacle. Remove any test boxes and/or test wires and anode beds directly affected by the abandonment.
- 7. Cut all mains into sections as determined previously.



Before flame cutting, check with an approved combustible gas indicator ensure that gas is not present through holes drilled in step 4.

Keep a fire extinguisher at site during cutting.

- 8. Effectively seal all open ends of the abandoned system with an appropriatelysized wooden plug, bull plug, fused cap or equivalent.
- 9. Remove signage used to identify piping being abandoned such as those beside road crossings. In places where the removal of signage could be detrimental to public safety, signage for abandoned piping should remain in place (e.g., river crossings).

8.3.5 Aerial Crossing Abandonment

NOTE: The following procedure is in addition to the requirements mentioned previously in section 8.3.4, "Procedure."

Before abandoning an aerial crossing (e.g., above grade crossing), ensure abandonment procedures have been agreed upon by the authorities responsible for rivers, streams, and ditches. They may specify environmental precautions before work starts.

To abandon an aerial crossing,

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1. Expose the top half of the pipeline 4 m back from the edge of the bank on both sides of the crossing. When excavating, ensure that disturbance to the riverbanks is minimized.

NOTE: If a 4 m setback cannot be achieved from the top edge of the riverbanks, contact Pipeline Engineering to determine an acceptable setback.

- 2. At the 4 m setback, excavate adequate working space around the main to perform the cuts and pipe sealing.
- 3. Support the crossing so that it can be severed from the main. Do not anchor the support mechanism to the banks, or seat it in the trough of a water crossing.
- 4. Ensure that the main is bonded at the appropriate cut locations before cutting.
- 5. Remove and dispose of pipe coating in the area(s) where the pipe will be cut.



Handle and dispose of coal tar coating according to EHS Manual Section 11, "Hazardous Materials – Pipeline Coatings – Handling, Storage and Disposal".

- 6. Before cutting into the main, check for the presence of pipeline liquids or condensates in the pipe within the 4m setback excavations. Drill into the top of pipe and swab down to the bottom checking for liquids or condensates.
- For all lines which contain pipeline liquids or liquid condensates, cut the line, collect and dispose of any condensates found, according to ECS Manual, "Hazardous Materials – Pipeline Contaminants – Handling, Storage and Disposal." Plug each end of cut section.
- 8. Remove the pipe, minimizing disturbance to trench walls.

8.3.6 **Records**

In addition to typical field data collection as per C&M Manual Section 16.15, "As-built Records," identify abandonment method (i.e., abandoned in place, abandoned removed), locations of sectionalization and sections that were grouted.

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ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. B, T1, Sch.4]

Question:

- a) Please confirm that the NPS 10 abandonment is a separate project from the new NPS 6 pipeline. If incorrect, please explain.
- b) Please confirm that Enbridge has not requested or received any conditions from the OEB governing the abandonment of the NPS 10 pipeline. If incorrect, please provide a list of all requests and conditions.

Response:

Please see Exhibit I.PP.1 f) and Exhibit I.ED 2 e).

Filed: 2020-08-14 EB-2020-0160 Exhibit I.PP.10 Page 1 of 1 Plus Attachment

ENBRIDGE GAS INC. Answer to Interrogatory from Pollution Probe (PP)

INTERROGATORY

Reference:

[Ex. B, T1, Sch.5]

Question:

a) Please provide a copy of the terms of reference and contract for the Wood Report.

Response:

a) Please see Attachment 1 for the Reference Form Services Agreement-Execution Copy, UG Oct 4, 2016. All confidential information has been redacted from the service agreement. At the time contract was signed Enbridge Gas was operated as Union Gas and Wood Group was AMEC Foster Wheeler.

SERVICES AGREEMENT

THIS AGREEMENT dated 4th day of October 2016, (hereinafter referred to as the "Agreement")

BETWEEN:

UNION GAS LIMITED, a company incorporated under the laws of the Province of Ontario, having its head office in the Municipality of Chatham-Kent, in the Province of Ontario

hereinafter referred to as "Union"

- and -

Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited, a company incorporated under the laws of the Province of Ontario, having its head office in Oakville, Ontario.

hereinafter referred to as "Consultant"

WHEREAS Union has retained Consultant to undertake Geotechnical Engineering Services, as requested by Union;

NOW THEREFORE, IN CONSIDERATION of the mutual covenants herein contained and the exchange of One Dollar (\$1.00) and other good and valuable consideration, the exchange, receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

- 1. Services and Term
 - 1.1. Consultant shall provide the Services described in Schedule A of this Agreement (herein referred to as the "Services").
 - 1.2. Subject to the provisions of this Agreement, this Agreement will commence on October 4th, 2016 and expire on Oct 4th, 2019, unless terminated by either party pursuant to the provisions of this Agreement.
 - 1.3. If it is intended, as evidenced in Schedule A that Consultant shall provide a single set of Services, then a Service Release Order ("**SRO**") will be issued for Union for the Services described in Schedule A.
 - 1.4. If it is intended, as evidenced in Schedule A that Consultant shall provide multiple sets of Services as requested by Union from time to time, then Union shall create a separate SRO for each separate set of Services, each such SRO to also be subject to this Agreement.
- 2. Compensation
 - 2.1. Union shall pay Consultant for Services in accordance with the rate schedule and payment provisions detailed in Schedule B of this Agreement.
- 3. Representations
 - 3.1. The Consultant represents and warrants that it is fully qualified to perform the Services in accordance with the terms and conditions of this Agreement within the time specified. The Services to be performed hereunder shall be done in

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proficient manner and shall conform to the currently accepted professional standards and shall comply with all applicable laws, orders, regulations, ordinances and other rules of all lawful authorities acting within their power, including the obtaining of all permits which may be required for the performance of work under this Agreement. The Consultant hereby acknowledges that it shall comply with all workplace rules of Union including, but not limited to, the Spectra Energy Code of Business Ethics and the Spectra Energy Supplier Code of Conduct available at <u>www.spectraenergy.com</u> and the Spectra Energy Prolonged Periods of Work Policy.

- 4. Confidential Information
 - 4.1. Definition
 - 4.1.1. As used herein, the term "Confidential Information" shall mean all information which Consultant, directly or indirectly, acquires from Union or Union's suppliers concerning the technical, manufacturing, processing and business activities of Union or the suppliers, except information falling into one of the following categories:
 - 4.1.1.1. Information which, prior to the time of disclosure or acquisition hereunder, is lawfully in the public domain;
 - 4.1.1.2. Information which, after disclosure or acquisition hereunder, lawfully enters the public domain, except where such entry is the result of Consultant's breach of the Agreement;
 - 4.1.1.3. Information, other than obtained from third parties, which, prior to disclosure or acquisition hereunder, was already lawfully in Consultant's possession either without limitation on disclosure to others or which subsequently becomes free of such limitations; or
 - 4.1.1.4. Information obtained by Consultant from a third party who to Consultant's reasonable knowledge is lawfully in possession of such information and not subject to contractual or fiduciary relationship with Union with respect to said information. Consultant may use and disclose such information in accordance with the terms under which it was provided by such third party.
 - 4.1.2. Confidential Information shall not be deemed to be within the foregoing categories merely because such information is embraced by more general information lawfully in the public domain or in Consultant's possession.

4.2. Non-Disclosure

- 4.2.1. Consultant will keep all Confidential Information in strictest confidence and will only disclose such information to those people specifically named by Union. The Consultant represents and warrants that it will ensure that the confidentiality provisions of this Section 4 shall be binding on its employees.
- 4.3. Third Parties

- 4.3.1. Consultant agrees that it will not disclose any Confidential Information to any third party nor use Confidential Information other than on Union's behalf except as Union may authorize in writing.
- 4.3.2. If disclosure to a third party is so authorized, Consultant shall enter into a Confidentiality Agreement, which shall be subject to review and approval by Union, with said party containing the same terms and conditions with respect to use or disclosure of Confidential Information as this section contains and naming Union as third party beneficiary.
- 4.3.3. Consultant also agrees to enter into Confidentiality Agreements with third parties at Union's request and to keep in force Confidentiality Agreements concerning third party's Confidential Information, which agreements will permit Consultant's use of such party's Confidential Information in the completion of the Services.
- 4.4. Safeguard of Confidential Information
 - 4.4.1. Consultant also agrees to use best efforts to safeguard all documents containing Confidential Information hereunder and all other documents containing Confidential Information whether prepared by Consultant or another. Consultant may make copies of such documents only to the extent necessary for the performance of Services. Consultant shall prevent access to all such documents by third parties. On completion of Services, Consultant agrees to return to Union all such documents containing Confidential Information and to destroy copies thereof. However, should Consultant desire to retain certain documents and receive Union's written approval therefore, Consultant shall continue to treat said documents within the terms of this clause.
- 4.5. Survival
 - 4.5.1. The provisions of this Section 4 shall survive termination or expiration of this Agreement for any cause whatsoever for a period of five (5) years thereafter unless otherwise authorized in writing by Union.
- 5. Property of Services
 - 5.1. All Services performed, including but without limiting the generality of the foregoing, all notes, reports, documents, calculations, and graphs prepared and/or provided by Consultant in the course of Services or as a result of performing the Services, shall be the property of Union and all property rights therein shall be vested in Union and may be used by Union for any purposes whatsoever. Consultant shall not release to any third party, any portion of the material prepared for Union or provided to Union in the course of, or as a result of performing Services, unless specifically otherwise authorized by Union.
- 6. Publicity
 - 6.1. Consultant shall not use Union's name or the fact that Consultant is performing Services for Union in any press releases, media statements or public communications. Consultant shall not use Union's name, logos, copyrights, trademarks, service marks, trade names or trade secrets in any way, and Union shall not be deemed to have granted Consultant a license of, or granted Supplier any rights in, any of the foregoing by entering into this Agreement.

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- 7. Termination
 - 7.1. Termination for Cause
 - 7.1.1. It is agreed and understood that in the event that Consultant violates any terms of this Agreement, Union may terminate this Agreement forthwith. Such termination does not preclude Union from initiating legal proceedings against Consultant to recover losses resulting from breach of contract.
 - 7.2. Early Termination
 - 7.2.1. Union has the right, at any time, to terminate this Agreement with or without cause, upon thirty (30) days' written notice to Consultant. Upon receipt of such notice, Consultant shall stop work on the cancelled project as directed in the notice and forward to Union all completed or incomplete reports, data and other documents (including but not limited to computerized data, video data or any other recorded data) pertaining to such cancelled project, or portion thereof if Union so requests. Consultant shall be entitled to full payment for Services performed by it as completed, or performed under the terms and conditions of this Agreement up to the effective date of such termination. Union shall not be held liable for damages or loss of anticipated profits on account of such termination.
- 8. Right to Set-Off
 - 8.1. Union reserves the right to set off any money owed by Union to Consultant under this Agreement or other agreement against any amounts owed by Consultant or any affiliate of Consultant to Union under any agreement.
- 9. Applicable Law
 - 9.1. This Agreement shall be interpreted and construed in accordance with the laws of the Province of Ontario and the courts of the Province of Ontario shall have exclusive jurisdiction in all matters contained herein, unless specified otherwise. Furthermore, this Agreement and the rights and obligations of the Parties hereto, are subject to all present and future laws, rules, regulations, and orders of any legislative body or duly constituted authority having jurisdiction, now or hereafter.
- 10. Entire Agreement, No Waiver, Headings, and Enurement
 - 10.1. This Agreement the attached schedules and the related SRO constitute the entire Agreement of the parties hereto relating to the subject matter hereof, and there are no written or oral terms or representations made by either party other than those contained herein. No provision of this Agreement may be modified or waived unless such modification or waiver is authorized in writing by the parties to the Agreement. No waiver by either party hereto of any breach by the other party of any condition or provision of this Agreement to be performed by such other party shall be deemed to be a waiver of similar or dissimilar conditions or provisions at the same or any prior or subsequent time. The headings contained herein are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement. This Agreement shall enure to the benefit of and be binding upon the parties hereto and their respective successors and permitted assigns.

- 11. Environmental Health and Safety Standards
 - 11.1. The Consultant acknowledges and agrees that all Services, or other matters, to be completed by the Consultant, pursuant to the terms and conditions of this Agreement, shall be completed in full compliance with the following standards, which shall be in addition to and not substituted for, any other standards or requirements set out in this Agreement or attached Schedules;
 - 11.1.1. Compliance with applicable laws and standards
 - 11.1.1.1. Consultant shall perform all Services in compliance with all applicable federal, state and local laws, orders, codes, rules, and regulations relating to health and safety and such Union health and safety procedures as required by Union.
 - 11.1.2. Compliance with Consultant's health and safety plan
 - 11.1.2.1. Consultant shall initiate and maintain all necessary safety precautions and programs to conform with all applicable health and safety laws or other requirements, including requirements of Union, wherever the Services are performed, that are designed to prevent injury to persons or damage to property on, about, or adjacent to the site. Consultant shall strictly conform to Consultant's safety programs as submitted and accepted by Union.
 - 11.1.3. Compliance with Consultant's project-specific health and safety plan
 - 11.1.3.1. In addition to Consultant's safety programs required herein, Consultant shall develop, maintain, and adhere to a project-specific safety plan for the Services subject to review and acceptance by Union.
 - 11.1.4. Consultant training requirements
 - 11.1.4.1. Consultant shall ensure that all Consultant personnel and any party to whom some or all of the Services has been subcontracted (a "Subconsultant") has received all training regarding health and safety or any other matters required by applicable law or applicable governmental authorizations. Training or implementation of any additional health and safety measures appropriate for the Services will be specified by Union. Consultant shall provide Union written documentation of said training and worker qualifications.
 - 11.1.5. Inspection/audit
 - 11.1.5.1. Consultant will allow Union, or a representative designated by Union, access to any facility related to the Services in order to monitor/audit Consultant's compliance with the health and safety requirements of this Agreement.
 - 11.1.6. Health and safety statistics

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- 11.1.6.1. Consultant shall provide Union health and safety statistics related to its prosecution of the Services from time to time, as so directed by Union, and at completion of the Services.
- 11.1.7. Initial reports
 - 11.1.7.1. Consultant will immediately report to Union any incident or incident without loss involving Consultant personnel, the public, or property, arising from Consultant's execution of the Services. Consultant shall provide a written initial report to Union of its investigation of said incident within 24 hours. The report shall provide a schedule for completion of the investigation.
- 11.1.8. Final reports
 - 11.1.8.1. Consultant shall provide to Union a final report showing the cause of the incident and any corrective action.
- 11.1.9. Stop work/suspension
 - 11.1.9.1. Whenever Consultant has not complied with its obligations set forth in this Agreement and creates a circumstance requiring immediate action to ensure the health and safety of all persons on at the site, including stoppage of Services, until the circumstance is remedied, Union may take or require Consultant to take such reasonable precautions. The taking of such action or actions by Union (or its failure to do so) shall not limit Consultant's liability or its obligations under this Agreement. Consultant shall reimburse Union for all reasonable costs incurred by Union in taking such precautions and any costs incurred by Consultant for such precautionary action and any subsequent remedial action shall be paid by Consultant.
- 11.1.10. Removal of Consultant employee
 - 11.1.10.1. Union reserves the right to require the Consultant to remove from the site any personnel not properly observing or complying with the prescribed health and safety requirements of this Agreement.

11.1.11. Termination

- 11.1.11.1. In addition to Union's right to terminate this Agreement contained in Section 7, Union may terminate this Agreement at any time by written notice for Consultant's failure to comply with the terms of this section.
- 11.1.12. Independent Consultant
 - 11.1.12.1. Consultant shall be solely responsible for the safety of all persons employed by it or its Subconsultants or any other person on the site for any purpose relating to Consultant's carrying out the Services.

11.1.13. EHS Professional

11.1.13.1. When requested by Union, Consultant shall provide a dedicated, qualified health and safety professional to monitor the Services being performed under this Agreement.

11.1.14. Meeting Requirements

- 11.1.14.1. Unless Union directs otherwise, Consultant shall attend the following health and safety meetings:
 - 11.1.14.1.1. pre-job orientation;
 - 11.1.14.1.2. an orientation prior to entering the worksite;
 - 11.1.14.1.3. daily tailgate briefings; and
 - 11.1.14.1.4. such other meetings at such times that worksite conditions change to review the status of the Services and Consultant's use of the health and safety measures required for the changed conditions.

11.1.15. Subconsultant matters

11.1.15.1. Prior to execution, Consultant shall ensure Subconsultants are appropriately reviewed, and that all subcontracts are consistent with, and in no way contrary to or inconsistent with, any of the terms or provisions of this section.

11.1.16. No Relief Subconsultant

- 11.1.16.1. Entry into any subcontract shall not relieve Consultant of any of its obligations in accordance with the terms of this section.
- 11.1.17. Responsibility for Subconsultant
 - 11.1.17.1. Consultant shall be fully responsible to Union for the acts and omissions of Subconsultants and of persons directly or indirectly employed by them, as it is for the acts or omissions of persons directly employed by Consultant for any failure to comply with the terms of this section.
- 12. Independent Consultant
 - 12.1. The parties agree that no oral agreement or provisions to this Agreement shall be construed so as to constitute Consultant as being the agent, servant or employee of Union and the instruction, management and control of Consultant's employees shall always remain with the Consultant, and Consultant shall be deemed to be an independent Consultant. Consultant shall have no authority to make statements, representations or commitments of any kind, or to take any actions which shall be binding upon Union, except as provided for herein or authorized in writing by Union. The Consultant further agrees and acknowledges that it shall not be considered an employee of Union and as such it will not be entitled to any benefits or compensation to which employees of Union are entitled.

13. Defects

13.1. The Consultant, at no cost to Union, shall remedy any defect in the Services caused by the negligent act or omission of the Consultant or by any failure on the part of the Consultant to carry out the Services in accordance with the provisions of this Agreement. Union reserves the right to deduct that portion of fees for which Services were deemed to not comply with the Request to the satisfaction of Union.

14. Indemnity

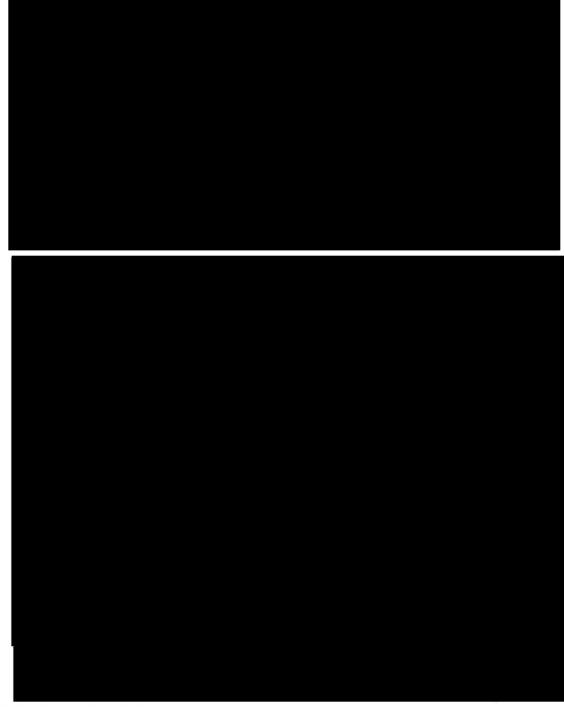
- 14.1. Except to the extent of Union's negligence, Consultant shall indemnify, defend, protect and hold harmless Union and its affiliates, its officers, directors, employees and agents from any and all actions, claims, costs, damages, demands, expenses, fees (including reasonable lawyer's fees), investigations, liabilities, losses or suits of any kind or nature which may be brought against Union its affiliates, its officers, directors, employees and/or agents or which Union may sustain, incur or pay arising out of or in any way related to this Agreement including, but not limited to, those which
 - 14.1.1. involve any actual or alleged injuries or death to any person or property damage resulting in whole or part from defective or allegedly defective services provided in a negligent or allegedly negligent manner;
 - 14.1.2. involve actual or alleged infringement of any letters patent, trademarks, copyrights, or other intangible rights;
 - 14.1.3. involve actual or alleged violations of any law, regulation, rule or ordinance relating to the use or sale of any goods;
 - 14.1.4. involve claims of Consultant, its agents, contractors or employees relating to personal injuries or property damage; or
 - 14.1.5. involve damages incurred by Union, as a result of any breach by the Consultant of this Agreement. This Indemnity is intended to survive the termination of this Agreement
- 14.2. Notwithstanding Section 14.1, Consultant shall not be liable to Union for any indirect or consequential damages, including for loss of profits, revenue, business or lost opportunity.

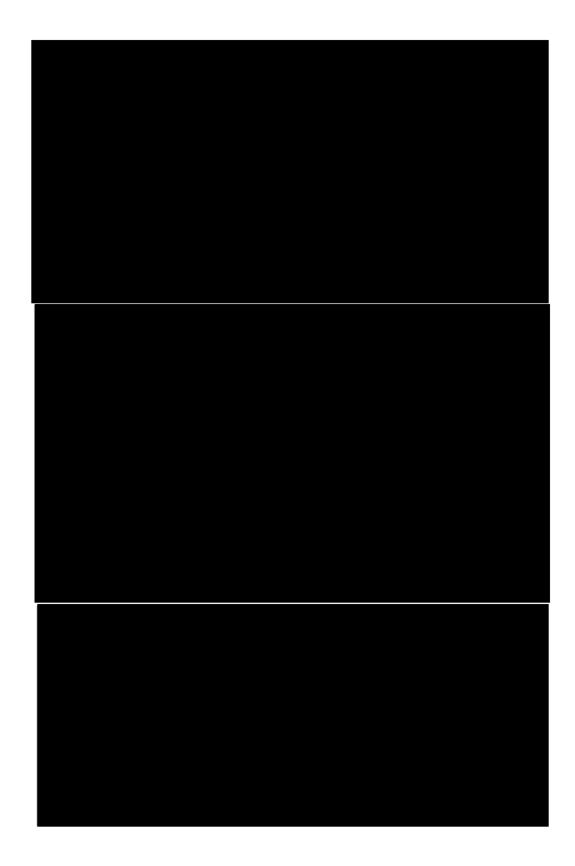
15. Conflict of Interest

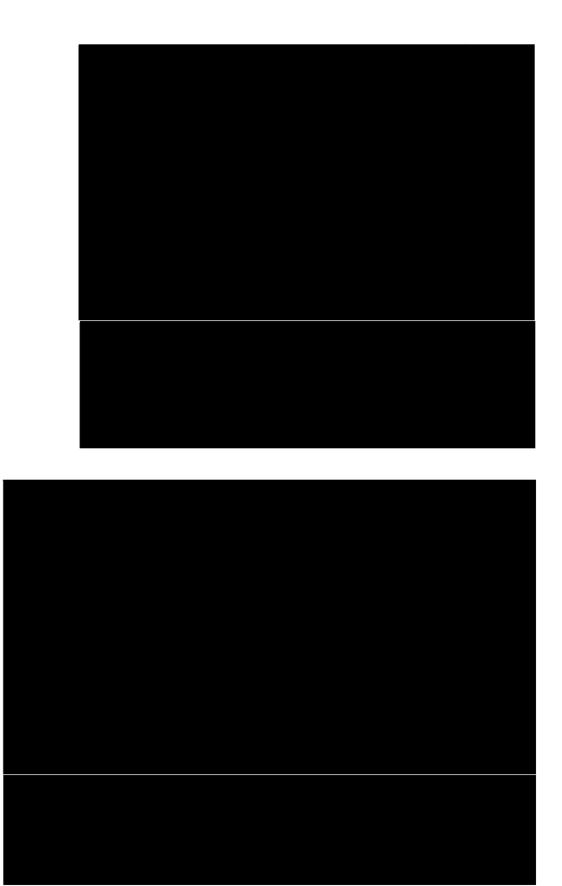
- 15.1. The Consultant covenants and agrees that it is not aware of the existence of any relationship, family, business, contractual or otherwise, between themselves, their principals, officers or employees and Union, its directors, officers or employees; and it will not perform any Services for or enter into any contract with others that may conflict with its contractual, professional, equitable or other obligations to Union without first obtaining the written approval of Union.
- 16. Consultant Contributions
 - 16.1. The Consultant shall pay all royalties and license fees on any equipment and materials to be furnished by it and shall pay all workers' compensation contributions, unemployment insurance contributions, Canada/Quebec Pension

Plan and employees' income tax deductions together with all other taxes and payroll contributions now or hereafter imposed by any lawful authority and indemnify and save harmless Union from any and all claims, penalties, interest and cost and any of the same which may be made or assessed against Union in respect thereof.

17. INSURANCE FOR THE PURCHASE OF SERVICES







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18.1. Consultant shall give the Services the highest classification and priority and no other job taken by Consultant shall displace the Services during the term hereof.

19. Currency

- 19.1. The parties hereto agree and acknowledge that all reference to dollars in this Agreement shall be construed to mean the currency of Canada.
- 20. Notices
 - 20.1. Any notice, demand, request or other instrument, which may be or are required to be given under this Agreement shall be delivered in person or sent by telex or telecopy, or mailed by prepaid registered post and shall be addressed as follows:
 - If to Union:

Union Gas Limited 50 Keil Drive North Chatham, Ontario N7M 5M1

or at such other address as Union may designate by written notice.

If to Consultant:

Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited 3215 North Service Road Burlington, Ontario L7N 3G2

or at such other address as Consultant may designate by written notice.

20.2. Any such notice, demand, request or other instrument shall conclusively be deemed to have been received on the day of such personal service or on the day of the receipt of the facsimile notice, or on the third day following the date of posting in the case of mailing as aforesaid, provided the postal service is not disrupted.

21. Severability

- 21.1. The invalidity or unenforceability of any portion or provision of this Agreement shall in no way affect the validity or enforceability of any other portion or provision hereof. Any invalid or unenforceable portion or provision shall be severed from this Agreement and the balance of this Agreement shall be construed and enforced as if this Agreement did not contain such invalid or unenforceable portion or provision.
- 22. Time of Essence
 - 22.1. Time is of the essence in all matters referred to in this Agreement.
- 23. Schedules

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23.1. Schedule A - Description of Services

23.2. Schedule B – Compensation

In the event of any conflict or inconsistency between the Schedules, and any provision of the Agreement, the provisions of the Section 1 to 25 of the Agreement and the SRO shall prevail over Schedules A and B.

- 24. Taxes
 - 24.1. If Consultant is a non-resident of Canada, and payments are made in respect of services rendered in Canada, of any nature whatsoever, Union is required by the Income Tax Act (Canada) to withhold a percentage in accordance with the legislation from each payment in respect of services rendered in Canada, and remit this amount to the Receiver-General. No withholding is required where the non-resident Consultant has received a waiver from the Canada Revenue Agency.
 - 24.2. In recognition of the fact that Union is subject to certain United States tax reporting requirements for specified payments to specified persons, Consultant shall immediately
 - 24.2.1. provide any information in this regard requested by Union including residency, legal status, and location of provision of goods or services, and
 - 24.2.2. fill out and return to Union or Union's designated agent any applicable US tax form. Failure to provide information or to fill out and return any forms required hereunder may result in a withholding of applicable US taxes from any future payments made to Consultant and/or termination of this agreement without further notice. Notwithstanding Consultant's compliance with the foregoing, withholding will be applied to any invoice if Union is directed to make such withholding by Canadian or US tax authorities.

25. Audit

Union or any person designated by Union may at any and all reasonable times for a period of sixty (60) months after the date of delivery of the Services have access to Consultant's books and records relative to the Services, for the purpose of auditing and verifying such amounts. Union may make copies of such books and records as reasonably required by Union in performing such audit. Consultant shall promptly review and settle with Union all matters arising from such audit including the refunding of monies where applicable. The parties agree that the audit rights granted herein shall not extend to examining the calculations and considerations used by Consultant in Consultant's determination of lump sum prices or agreed upon rates.

- 26. First Nation and Métis Procurement
 - 26.1. Consultant acknowledges that Union sets goals and tracks goods/services purchased from First Nation and Métis owned companies in Ontario. If requested by Union, Consultant agrees to use reasonable efforts to support First Nation and Métis purchasing and support Union goals as follows:

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- 26.1.1. Consultant will establish goals associated with the purchase of material and/or services from First Nation and Métis owned companies in Ontario that will be used in assessing Consultant performance of this Agreement. The First Nation and Métis goals will be mutually agreed upon by Union and Consultant based upon potential opportunity. Upon Union's request, Consultant shall provide information supporting First Nation and Métis goals; and/or
- 26.1.2. Consultant will provide Union reports bi-annually each year of the contract Term that tracks the First Nation and Métis actual spend; and/or
- 26.1.3. Consultant will provide Union a First Nation and Métis Procurement plan to demonstrate that reasonable efforts are planned for and taking place.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

UNION GAS/LIMITE By: Name: Title: 201 Date: Z

Amec Foster Wheeler Environment & Infrastructure, a Division of Amec Foster Wheeler Americas Limited

By: Name: <u>Brian Layess</u> Title: <u>Ortaris West Area Manager</u> Date: <u>October 6, 2016</u>

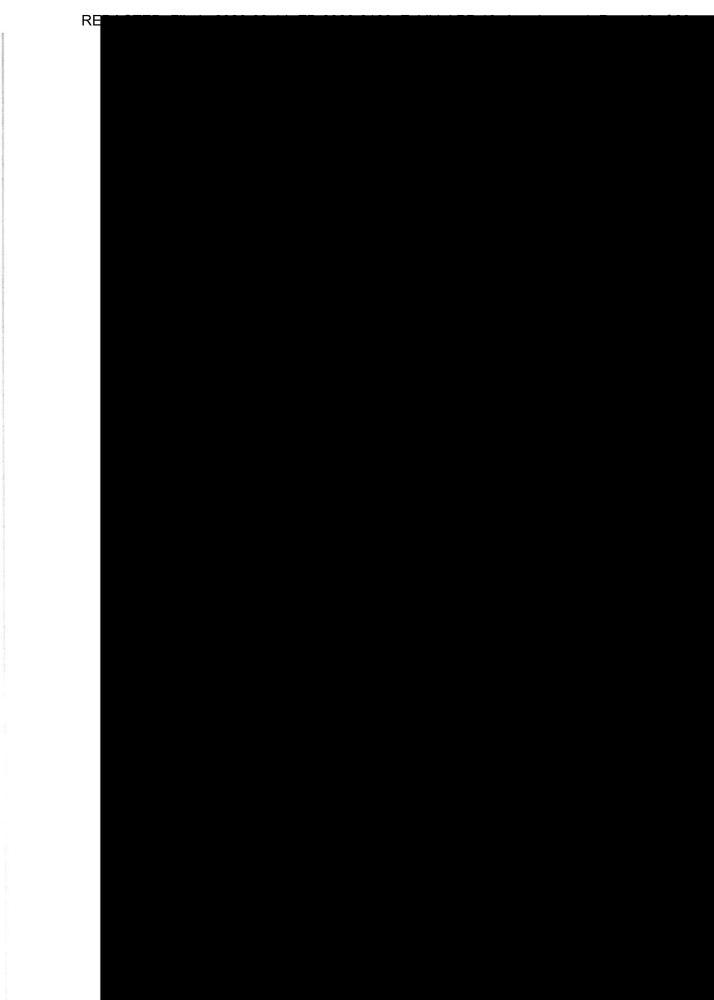
Schedule A

- •
- Description of Services o Geotechnical Engineering Services

REDACTED, Filed: 2020-08-14, EB-2020-0160, Exhibit I.PP.10, Attachment 1, Page 17 of 20

Schedule B

• Compensation (please see attachment- Attachment 2- Pricing Model_Amecfw.xlsx, dated 10-03-2016)



SPECTRA ENERGY PROLONGED PERIODS OF WORK POLICY

Accountability: Roles and Responsibilities

- The immediate manager or supervisor is responsible for ensuring that their employees are able to conduct work safely at all times and must take adequate steps to ensure their employees' health and safety. This includes instances during normal (non- overtime) work hours where the working environment or conditions may cause fatigue (e.g., excessive heat).
- The employee is responsible for ensuring they are fit for duty. If at any time an employee determines they are not fit for duty, they are responsible to immediately inform their manager or supervisor.
- The employer's Human Resources and Legal Departments will identify applicable collective bargaining
 agreements and laws and regulations.