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BY EMAIL

March 24, 2022

Ms. Nancy Marconi
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4
registrar@oeb.ca

Dear Ms. Marconi:

**Re: Ontario Energy Board (OEB) Staff Submission
Enbridge Gas Inc. – St. Laurent Ottawa North Replacement Project
Application
OEB File Number: EB-2020-0293**

In accordance with Procedural Order No. 6, please find attached the OEB staff submission in the above proceeding. The attached document has been forwarded to Enbridge Gas Inc. and to all other registered parties to this proceeding.

Yours truly,

Original Signed By

Zora Crnojacki
Senior Advisor, Natural Gas Applications

Encl.



ONTARIO ENERGY BOARD

OEB Staff Submission

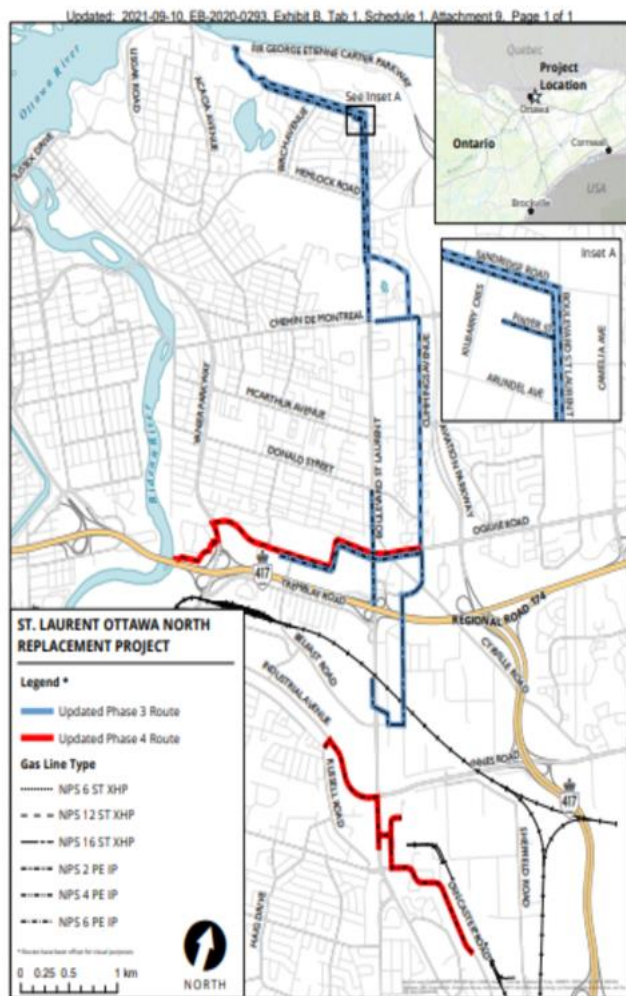
**Enbridge Gas Inc.
St. Laurent Ottawa North
Replacement Project Application
Application for Leave to Construct**

EB-2020-0293

March 24, 2022

1.0 Introduction and Application Overview

On March 2, 2021 Enbridge Gas Inc. (Enbridge Gas) filed an application under section 90 of the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, (Schedule B) (OEB Act) seeking an order granting leave to construct approximately 19.8 kilometres of natural gas pipeline and associated facilities in the City of Ottawa (Project). The application is for Phases 3 and 4 of a four-phase project to replace the St. Laurent Pipeline based on integrity issues identified by Enbridge Gas. Phases 1 and 2 have been completed and are in service. The general location of the Project is represented on the map below.



The proposed natural gas pipeline would replace portions of the existing St. Laurent Pipeline in the two final phases of this multi-year project. The OEB's determination on Phases 3 and 4 will not impact the functioning of Phases 1 and 2. Enbridge Gas has also

applied under section 97 of the OEB Act for approval of the form of land-use agreements it has offered or will offer to landowners affected by the route of the Project.

Enbridge Gas's expected In Service Dates (ISD) are December 2022 and December 2023 for Phase 3 and Phase 4 respectively. The construction was planned to start in March 2022 and March 2023 for Phase 3 and Phase 4 respectively.

OEB Staff recognizes the need to address the integrity related risks of the St. Laurent Pipeline. However, OEB staff submits that the evidence presented by Enbridge Gas does not fully support Enbridge Gas's proposal for an immediate pipeline replacement; and that the application should be denied. OEB staff agrees that the (reactive) Repair Option as an alternative to the Project should be rejected as it fails to manage the increasing reliability risk of the existing pipeline. OEB staff submits that the Retrofit Option, which would include the installation of in-line-inspection of the pipeline and allow for proactive repair and operational and safety risk management, is a more appropriate alternative. OEB staff addresses the rationale for this position in sections 3.1 Need for the Project and 3.2 Alternatives to the Project.

OEB staff has no significant concerns with other aspects of Enbridge Gas's application. OEB staff submits that, should the OEB grant leave to construct the Project, the approval should be subject to Conditions of Approval contained in Appendix A of this submission.

2.0 The Proceeding

A Notice of Hearing was issued on March 19, 2021. Each of Energy Probe Research Foundation (Energy Probe), Environmental Defence Canada Inc. (Environmental Defence), Federation of Rental Housing Providers of Ontario (FRPO), Industrial Gas Users Association (IGUA), Pollution Probe and School Energy Coalition (SEC) applied and were granted intervenor status and cost eligibility.

On May 5, 2021, the OEB placed Enbridge Gas's application in abeyance to allow Enbridge Gas to adjust a segment of the proposed pipeline route. The route adjustment was required in response to issues raised by the Ministry of Transportation (Ministry). On August 11, 2021, Enbridge Gas filed a letter informing the OEB that after discussions with the Ministry of Transportation and the Royal Canadian Mounted Police, Enbridge Gas had arrived at mutually acceptable compromise to adjust the segment of the route along Vanier Parkway. On September 10, 2021, Enbridge Gas filed an updated application with the OEB.

The OEB issued a Notice of Hearing of the updated application on September 30, 2021. By letter dated October 1, 2021, the City of Ottawa applied and was granted intervenor status.

The status of the intervenors previously approved remained in effect.

The OEB issued six procedural orders. Procedural Order No. 1 set the timeline for interrogatories and responses by Enbridge Gas. In Procedural Order No. 2 the OEB granted a request by Enbridge Gas for an extension of the deadline for interrogatory responses to December 13, 2021. Enbridge Gas filed the interrogatory responses on December 13, 2021.

On December 17, 2021, the OEB issued Procedural Order No. 3 which set the schedule for a transcribed technical conference, undertakings, written submissions by intervenors and OEB staff and written reply submission by Enbridge Gas. On December 21, 2021 the OEB issued Procedural Order No. 4 approving Enbridge Gas's request to extend the final written submission deadline from February 22, 2022 to March 3, 2022.

On December 17, 2021, SEC, in a letter submitted on its own behalf and in collaboration with the City of Ottawa and Pollution Probe (collectively, the Sponsors), requested that the OEB allow the Sponsors to submit documentary evidence, and a panel of witnesses, speaking to the need, cost-effectiveness, and timing of the Project.

On January 13, 2022, the OEB issued Procedural Order No. 5 approving the Sponsors' request for filing the evidence and set a new schedule for the proceeding including filing the Sponsors' evidence, responding evidence by Enbridge Gas, transcribed Technical Conference, undertakings from the Technical Conference, written final arguments by intervenors and OEB staff and written final argument by Enbridge Gas. According to the procedural schedule, the record of the proceeding would be completed by April 4, 2022 with the filing of Enbridge Gas's reply argument.

The Technical Conference was scheduled to be completed on March 4, 2022 and was extended to March 7, 2022. To provide for sufficient time for the remainder of the procedural steps, the OEB issued Procedural Order No. 6 extending the procedural schedule set out in the Procedural Order No. 5. Responses to undertakings from the Technical Conference were due on March 14, 2022. Intervenors' and OEB staff submissions are due March 24, 2022. The last procedural step is Enbridge Gas's final argument due on April 7, 2022.

3.0 OEB Staff Submission

Consistent with the standard Issues List for natural gas leave to construct applications, the OEB staff submission is structured to address the following issues:

1. Need for the Project
2. Project Alternatives
3. Project Cost and Economics
4. Environmental Impacts
5. Landowner Agreements
6. Indigenous Consultation
7. Conditions of Approval

3.1 Need for the Project

Enbridge Gas submitted that the need for the Project is underpinned by the declining and ongoing integrity decline of vintage steel distribution mains. According to Enbridge Gas, the replacement of these portions of the St. Laurent Pipeline is needed to manage the risk to safe and reliable natural gas service to approximately 165,000 customers in the City of Ottawa and Gatineau.

In reaching its conclusion regarding the need for the Project, OEB staff considered the following issues:

- Integrity of the Existing Pipeline
- Assessment of Risk of Declining Integrity
- Predicted Likelihood of Leaks
- Severity of Consequences of Pipeline Failure

Integrity of the Existing Pipeline

As required by Canadian Standards Association (CSA) Standard Z662 – Oil and Gas Pipeline System standards, Enbridge Gas has been monitoring the condition of its pipeline systems and associated risks and is responsible for implementing the Integrity Management Program. Enbridge Gas's Distribution Integrity Management Program (DIMP) and Asset Health Review (AHR) determined that vintage steel distribution mains installed in the 1970s and before that date have demonstrated declining health. This assessment

included the St. Laurent system pipelines which Enbridge Gas is proposing to replace through this application, which were constructed in 1958.

According to Enbridge Gas, the declining condition of the pipelines was determined based on the results of system surveys and inspections, conducted at various locations between 2006 and 2018. These surveys and inspections included a ground penetrating radar integrity project (2006); field work on leak repairs (2013); integrity dig (2014); bridge crossing inspection (2016); depth of cover surveys (2017); and indirect inspection to assess cathodic protection, coating, and depth of cover (2018). The results of these surveys and inspections identified corrosion, dents, compression couplings, reduced depth of cover, and past deficient cathodic protection as pipeline conditions that create a risk to the integrity of St. Laurent system. Enbridge Gas currently does not have infrastructure to conduct an in-line inspection of the St. Laurent Pipeline to further assess its condition.

Enbridge Gas noted that the area served by the existing St Laurent pipeline is a single-source natural gas network serving thousands of customers, and that the consequences of a failure, depending on the severity of the damage or defect, could be severe. In the extreme, Enbridge Gas could be faced with the need to shut down the pipeline entirely, causing a loss of service for thousands of customers.

Assessment of Risk of Declining Integrity

An assessment of risk is determined by considering the probability or likelihood of a pipeline failure event and the severity of consequences should this event occur. Enbridge Gas provided evidence on the probability of pipeline failures and the severity of the consequences were a failure to occur.

Enbridge Gas provided a qualitative risk assessment, in the Standard Operational Risk Matrix, of service shutdown due to corrosion issues for two periods, including a winter and a summer scenario: i) 20 years average risk (2021-2041); and ii) 40 years average risk (2021-2061) ¹

Table 1:
20 years Average Risk for Service Shutdown due to Corrosion Related Issues

| Impact Category | Winter Scenario | Summer Scenario |
|-----------------------------|------------------------|------------------------|
| Financial | Medium | Medium |
| Health and Safety | Medium | Medium |
| Customer Loss | High | Medium |
| Stakeholder Concerns | Medium | Medium |

¹ Enbridge Gas Inc. response to interrogatory I.STAFF.4

Table 2:
40 years Average Risk for Service Shutdown due to Corrosion Related Issues

| Impact Category | Winter Scenario | Summer Scenario |
|----------------------|-----------------|-----------------|
| Financial | Medium | Medium |
| Health and Safety | Medium | Medium |
| Customer Loss | Very High | High |
| Stakeholder Concerns | Medium | Medium |

Enbridge Gas assessed the average risk of customer loss as “high” or “very high” in the winter scenarios for the next 20 year and the next 40 year timeframes. Customer loss is defined as the potential for emergency service shutdown to repair leaks due to corrosion related issues. This risk rating was based on the combination of severity of the consequences of leaks and the likelihood of the occurrence of leaks. Enbridge Gas stated that based on its “...Risk Evaluation criteria, risks rated at or above “High” require risk treatment.”²

Predicted Likelihood of Leaks

Enbridge Gas used its Asset Health Index (AHI) methodology to predict how the condition of the existing St. Laurent Pipeline would change over a forty-year time frame (if not replaced), and to project the number of leaks that may occur. The analysis showed a decline in asset health over time, and the projected number of leaks rising sharply over multiple decades.

The Enbridge Gas AHI model predicts 4.3 cumulative leaks by 2041. By 2051, it predicts 13 cumulative leaks, and by 2061, 36.8 cumulative leaks.³

² Enbridge Gas Inc. response to I.STAFF.4 c)

³ Exhibit B, Tab 1, Schedule 1, page 42

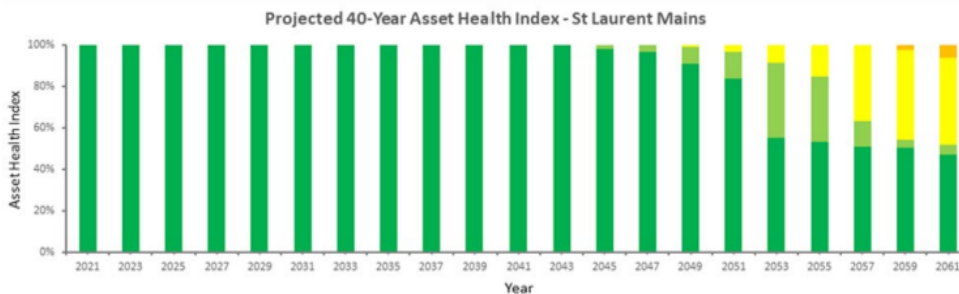
Table 11: Asset Health Index and Projected Cumulative Leaks

| 2041 | | | |
|---------------------------------|----------------|-------------|-----------------|
| Asset Health Index | Length (m) | Asset Count | Projected Leaks |
| HI1 (within greater than 40yrs) | 13418.3 | 167 | |
| Grand Total | 13418.3 | 167 | 4.3 |

| 2051 | | | |
|---------------------------------|----------------|-------------|-----------------|
| Asset Health Index | Length (m) | Asset Count | Projected Leaks |
| HI1 (within greater than 40yrs) | 8552.2 | 140 | |
| HI2 (within 40 yrs) | 3592.7 | 22 | |
| HI3 (within 25 yrs) | 1273.4 | 5 | |
| Grand Total | 13418.3 | 167 | 13.0 |

| 2061 | | | |
|---------------------------------|----------------|-------------|-----------------|
| Asset Health Index | Length (m) | Asset Count | Projected Leaks |
| HI1 (within greater than 40yrs) | 4714.1 | 79 | |
| HI2 (within 40 yrs) | 112.8 | 8 | |
| HI3 (within 25 yrs) | 7258.9 | 70 | |
| HI4 (within 10yrs) | 1332.5 | 10 | |
| Grand Total | 13418.3 | 167 | 36.8 |

Figure 17: St. Laurent Pipeline Asset Health Index



As for past occurrences, Enbridge Gas indicated that it had one corrosion-related leak in the St. Laurent pipeline in the past 10 years. This leak was repaired by way of a cut-out of an 8 metre segment of the pipeline at a cost of \$151,550.47. Enbridge Gas also indicated that in the past 10 years, there had been other repairs to the pipelines in the St. Laurent system due to corrosion that did not result in a leak (loss of containment).⁴

Enbridge Gas estimated that roughly 1% of the system leaks predicted by its AHI model could trigger a scenario where Enbridge Gas would have no option but to isolate the pipeline and disconnect customers. Enbridge Gas noted that this was an order-of-magnitude estimate only, and the approach to repair a leak would be entirely dependent on the specific circumstances of any given leak.⁵

⁴ Enbridge Gas Inc. response to Exhibit I.FRPO.14

⁵ Tech Conference Day 1, pp. 209-212. Exhibit JT 1.26

Enbridge Gas confirmed that it has not experienced any catastrophic failures (complete ruptures of the pipeline) on any pipelines similar in nature to the St. Laurent pipeline system.⁶

Enbridge Gas also indicated that the complete shutdown to repair a leak is assessed as a “rare event”, not a high probability event. However, the consequences of service loss for customers, particularly in the winter scenario, may be quite serious and detrimental, as discussed in the next section.

Severity of Consequences of Pipeline Failure

Enbridge Gas modelled two scenarios describing the consequences of pipeline failure which would trigger a complete service shutdown and an emergency response. The first scenario models the consequences of a service shutdown at 47 Degree Day (corresponding temperature of -29C). The second scenario presents the consequences of a shutdown at 1 Degree Day (corresponding temperature of 17C). The tables below from the Enbridge Gas evidence include projections of customer losses by customer type under the two scenarios.⁷

Table 1: Customer Loss at 47 Degree Days by Customer Type

| Customer Type | Number of Customers Lost: Enbridge Gas | Number of Customers Lost: Gazifère | Total Customers Lost |
|---------------|--|------------------------------------|----------------------|
| Residential | 28,226 | 28,285 | 56,511 |
| Apartment* | 35 | 248 | 283 |
| Commercial* | 3,345 | 2,037 | 5,382 |
| Industrial | 17 | 7 | 24 |
| Total | 31,623 | 30,577 | 62,200 |

*Commercial customers include some apartment customers due to building use.

Table 2: Customer Loss at 1 Degree Day by Customer Type

| Customer Type | Number of Customers Lost: Enbridge Gas | Number of Customers Lost: Gazifère | Total Customers Lost |
|---------------|--|------------------------------------|----------------------|
| Residential | 15,342 | 0 | 15,342 |
| Apartment* | 31 | 0 | 31 |
| Commercial* | 1,292 | 0 | 1,292 |
| Industrial | 11 | 0 | 11 |
| Total | 16,676 | 0 | 16,676 |

*Commercial customers include some apartment customers due to building use.

⁶ Exhibit JT 1.9

⁷ Exhibit B, Tab 1, Schedule 1, pages 7-13, paragraphs 13-22: Consequences of Failure; page 10, Table 1: Customer Loss at 47 Degree Days by Customer Type; and page 12, Table 2: Customer Loss at 1 Degree Day by Customer Type

Under the 47 Degree Day scenario customer loss would be 62,200 customers in Enbridge Gas's and Gazifere's franchise areas. Under the 1 Degree Day scenario, customer loss would be 16,676 customers in Enbridge Gas's franchise area and no loss in Gazifere's franchise area.

The estimated cost associated with such an event in the Enbridge Gas franchise area in the 47 Degree Day scenario is \$54 M (Enbridge Gas estimated the cost of repair in the Gazifere franchise area to be \$37M). Under the 1 Degree Day scenario, Enbridge Gas estimated the cost of an event to be \$22M in its franchise area. The majority of the cost estimates provided by Enbridge Gas for the two scenarios would be attributable to projected customer claims due to loss of service.⁸

Submission

Based on the evidence filed by Enbridge Gas, OEB staff agrees that there are concerns with the integrity of the St. Laurent Pipeline. OEB staff however notes that, based solely on the predicted likelihood of leaks, the urgency to address these concerns does not appear high. Enbridge Gas's evidence shows that only 4 corrosion-related leaks are predicted through 2041, with only an estimated 1% of these leaks (0.043 cumulative leaks by 2041) potentially requiring pipeline isolation leading to customer disconnection.

OEB staff further observes that Enbridge Gas stated that if the ISD is not accomplished by November 2023, Enbridge Gas can implement measures to ensure the continued safe and reliable operation of the existing pipelines. These measures may include increased leak survey frequencies, regular monitoring of the existing running line, increase survey frequencies, conduct regular monitoring of the existing pipeline and other measures it deemed appropriate. Enbridge Gas noted that these measures can mitigate the risks of pipeline incidents in the short-term, but "...such increased operational activities cannot and should not be maintained indefinitely."⁹

OEB staff recognizes that there is a need to manage the risk of declining integrity of the St. Laurent system. Regarding the timing and urgency to address this need, OEB staff submits that, while the likelihood of a significant pipeline failure event, such as a leak that requires shutdown, may be low, the consequences could be severe, due to the single-feed nature of the St. Laurent system. OEB staff discusses its evaluation of alternatives to the Project in the next section.

⁸ Enbridge Gas Inc. in response to I.FRPO.25

⁹ Enbridge Gas Inc. response to I.STAFF.2 a-b

3.2 Alternatives to the Project

Enbridge Gas presented comparative assessments of alternatives to the Project including:

- Options to manage integrity decline risk: Retrofit Option and Repair Option
- Integrated Resource Planning Alternatives (IRPAs)
- Downsizing the pipeline in response to potential natural gas demand reduction in the future

Enbridge Gas did not accept the Retrofit Option or Repair Option as preferred alternatives to the Project because (according to Enbridge Gas) these alternative options do not resolve the integrity issues and cause additional costs (the potential cost of ongoing repairs, and, for the Retrofit option, the upfront cost of retrofit). Enbridge Gas maintained that the proposed Project is the best alternative to meet the need to manage the declining integrity risks and ensure continuous safe and reliable service.

Enbridge Gas rejected IRPA as a viable alternative, as in its view it does not address the integrity issue which is the underpinning need for the Project. Enbridge Gas also rejected the alternative of downsizing the pipeline in combination with demand reduction by IRPA or other programs and initiatives, on the basis that demand reduction sufficient to downsize the pipeline was not feasible within the short timeframe that the integrity concerns need to be addressed.

The Sponsors filed evidence (Sponsors' Evidence) presented by the City of Ottawa and the Ottawa Community Housing Corporation (OCHC). The Sponsors' Evidence provided the actions and plans of these organizations to reduce their natural gas demand within the area served by the St. Laurent Pipeline.

In reaching its conclusion regarding the evaluation of alternatives to the Project, OEB staff considered the following options and issues:

- Retrofit Option
- Repair Option
- Sponsors' Evidence and City of Ottawa's Energy Evolution Plan
- Integrated Resource Planning Alternatives
- Downsizing the Pipeline due to Reduced Future Demand for Natural Gas

Retrofit Option

As an alternative, Enbridge Gas considered retrofitting the St. Laurent Pipeline to allow for in-line inspection. This would enable a more comprehensive assessment of the condition of the pipeline and potentially allow for a more pro-active (rather than reactive) repair program. Enbridge Gas determined that the cost of retrofits and in-line filters needed to accommodate in-line inspection would be approximately \$30.2 million.

Enbridge Gas rejected this alternative, noting that the retrofit would not resolve the integrity issues, with customers being exposed to the possibility of ongoing repair costs (in addition to the high capital cost of the retrofit), which could potentially culminate in a full pipeline replacement if the systemic nature of the integrity concerns was confirmed.¹⁰

Repair Option

The Repair Option involves Enbridge Gas reactively responding to identified leaks or concerns using Enbridge Gas’s existing practices.¹¹

Enbridge Gas compared the Repair option to the Project assuming the probability of pipeline failure over 40 years and beyond. Enbridge Gas used the AHI for this comparative assessment.

Enbridge Gas estimated the direct capital cost of the Repair Option to be \$33.0 M compared to Project total costs of \$73.5 M.¹² The table below indicates lower total cost and Net Present Value of the Repair Option vs. Project (i.e. Replace Option).¹³ The costs in the table exclude contingency costs and costs associated with the intermediate pressure polyethylene portions of the project. Including these costs brings the project cost to \$123.7 million.

Table 13: Comparison of Repair Option & Replace Option (Project) Costs

| (\$ millions) | Repair Option | Replace Option |
|--------------------------|----------------------|-----------------------|
| Total Cost | \$33.0 | \$73.5 |
| Net Present Value | \$(7.7) | \$(58.9) |

¹⁰ Enbridge Gas Inc. response to I.Staff.5
¹¹ See Exhibit I.ED.10c for a description of these practices
¹² Enbridge Gas Inc. response to I.ED.17
¹³ Exhibit B, Tab 1, Schedule 1, page 47

Enbridge Gas rejected the Repair Option, stating that continuing to manage the pipeline in a reactive manner exposes ratepayers and the general public to an unacceptable level of risk.

Sponsors' Evidence and City of Ottawa's Energy Evolution Plan

The Sponsors' Evidence provided details on the City of Ottawa's Energy Evolution Plan, approved by City Council in October 2020, and the programs and plans that have been initiated in support of this plan.

The Energy Evolution Plan aims to reduce the corporate City of Ottawa emissions to zero by 2040 and community-wide emissions from all entities within the City of Ottawa to zero by 2050. The City of Ottawa indicated that by 2050, renewable natural gas is expected to provide approximately 12% of the community's energy requirements, versus the 50% of the community's energy needs that is currently provided by conventional natural gas (i.e. roughly a 75% drop in demand for natural gas, coupled with a supply-side shift to renewable natural gas to serve this remaining demand). The City of Ottawa indicated that it had not yet determined whether or for how long the existing natural gas distribution infrastructure would be needed to distribute renewable natural gas.¹⁴

Broadly speaking, this planned reduction in natural gas use (for both corporate City of Ottawa buildings and buildings in the community) would be achieved through a combination of fuel switching from natural gas to electric heat pumps and building retrofits to significantly reduce building energy demand. The City of Ottawa and OCHC both provided details on the initial projects they have undertaken or were in the process of undertaking under this emissions reduction strategy.

The Sponsors' Evidence also stated that the federal government's Energy Services Acquisition Program would materially reduce natural gas use in the St. Laurent Pipeline area, due to conversion of the Cliff Street heating and cooling plant from steam to hot water, with a projected greenhouse gas emissions reduction of 87% by 2025, with almost all of this reduction coming from reductions in natural gas use.¹⁵ However, the City of Ottawa was unable to provide specific details from the federal government on the estimated reduction in natural gas demand from the Cliff Street plant.¹⁶

The City of Ottawa did not propose a specific alternative to the Project. However, the City

¹⁴ Response to interrogatories on Sponsors' Evidence, 2.1-Staff-4

¹⁵ Sponsors' Evidence, page 4

¹⁶ Response to Undertaking JT 2.8.

of Ottawa indicated that “approving another natural gas pipeline to supply the City of Ottawa for the next 40-100 years is in direct conflict with Energy Evolution in the City of Ottawa.”¹⁷ City staff indicated that its preference would be for an integrated energy planning approach that would require the main energy suppliers (gas, electricity and district energy) to work together to build an energy system which meets the Energy Evolution climate goals while ensuring affordability and energy security.¹⁸

Integrated Resource Planning Alternative

Enbridge Gas submitted that a detailed assessment of IRP alternatives was not required, because the Project is driven by integrity concerns that must be addressed within 3 years, and thus fails the “Timing” screening criterion in the IRP Framework.¹⁹

Enbridge Gas based its assessment of the Project against the Binary Screening Criteria set by the OEB in its Decision and Order on Enbridge Gas’s Integrated Resource Planning Proposal (EB-2020-0091) issued on July 22, 2021 (IRP Decision). Enbridge Gas noted that it determined that “... the Project is driven by integrity concerns that must be addressed within three years and no demand or supply side solution can resolve integrity concerns”. To support its decision not to include IRPAs in the assessment of alternatives to the Project, Enbridge Gas referred to the following excerpt from the IRP Decision:

If an identified system constraint/need must be met in under three years, an IRP Plan could not likely be implemented and its ability to resolve the identified system constraint could not be verified in time. Therefore, an IRP evaluation is not required. Exceptions to this criterion could include consideration of supply-side IRPAs and bridging or market-based alternatives where such IRPAs can address a more imminent need.

Prior to the issuance of the IRP Framework, Enbridge Gas had already engaged a consultant to undertake a preliminary examination of the potential for DSM to provide reductions in peak demand, as discussed in the next section. However, once the IRP Framework was in place, Enbridge Gas determined that it was not appropriate or necessary to conduct further IRP assessment due to the timing screening criterion.²⁰

Downsizing due to Demand Reductions or IRP Alternatives

Enbridge Gas sized the proposed Project based on the peak design day demand that

¹⁷ Letter to the OEB, City of Ottawa, October 1, 2021

¹⁸ Response to interrogatories on Sponsors Evidence, 2.1-Staff-4

¹⁹ IRP Framework, section 5.2

²⁰ Application Exhibit B, Tab 1, Schedule 1, pages 12-13, paragraph 23

would need to be met based on its current customers and firm contractual customer commitments, using its existing demand forecasting methodology.²¹ Enbridge Gas did not seek to add pipeline capacity for growth, relative to the existing pipeline.

Enbridge Gas retained a third-party consultant (Posterity Group) to evaluate the potential for targeted DSM or enhanced targeted energy efficiency to provide reductions in peak demand that might reduce the size of the Project, based on estimates of the achievable DSM potential in the 2019 Achievable Potential Study.²² This analysis concluded that there was not enough DSM potential to reduce the size of the pipeline.²³

Enbridge Gas indicated that it had not specifically taken into account the programs and plans described in the Sponsors' Evidence in its demand forecast, as these programs were aspirational in nature.²⁴ In responding evidence, Enbridge Gas estimated the potential peak demand reductions that could be achieved by City of Ottawa sites, OCHC sites, and the Cliff Street heating and cooling plant served by the St. Laurent pipeline. Enbridge Gas concluded that, even if all of these sites reduced their peak natural gas demand to zero, the overall peak demand reduction would only be about 1/3 of that needed to downsize the proposed Project by one pipeline size.²⁵ Approximately 75% of the potential peak day demand reductions attributable to these sites is from the Cliff Street plant. Enbridge Gas indicated that despite the plans to reduce emissions and natural gas use at the Cliff Street plant, its understanding was that the facility would retain its current contract demand for natural gas.²⁶

Submission

OEB Staff is not convinced that an immediate pipeline replacement is needed. OEB Staff agrees that the rejection of the (reactive) repair option was appropriate as it fails to manage the increasing reliability risk of the existing pipeline, but OEB staff submits that the retrofit alternative may be more appropriate than the pursuit of the Project. Enbridge Gas noted that the retrofit could theoretically enable the pipeline to be inspected and repaired indefinitely.²⁷ At some point, this would likely become untenable, however, the evidence suggests that the existing pipeline could remain in service for several decades (i.e. up to

²¹ Enbridge Gas Inc. response to I.ED.6

²² Enbridge Gas Inc. response I.Staff.6(d), including attachment

²³ The Posterity memo indicates that a reduction of 63,900 m³/hr in peak hour demand would be needed to reduce the pipeline size, while the maximum potential peak demand reduction from DSM was only 10,100 m³/hr. {Elsewhere, in Exhibit I.ED.13 and responding evidence, Enbridge Gas indicates that only a 32,500 m³/hr peak demand reduction would be needed for downsizing.}

²⁴ Interrogatory responses on Enbridge evidence, Exhibit I.Ottawa,3

²⁵ Enbridge Responding Evidence, pages 3-5 of 7

²⁶ Interrogatory responses on Enbridge evidence, Exhibit I.EP.2; TC transcript day 1, page 209. TC transcript Day 2, pages 68-69

²⁷ Exhibit I. Staff.5

2041) with only a minimal number of leaks, with the in-line retrofit greatly reducing the risk of any unplanned outage and customer loss, and allowing for proactive rather than reactive repairs to minimize the cost and disruption of any leaks that do occur. If the in-line replacement allows the pipeline life to be extended by several decades, the retrofit will also likely be more economical than a full replacement at this time, due to the time value of delaying the high capital cost of the replacement.²⁸ This would also provide flexibility for a possible pipeline size reduction at the future time of replacement, should demand reductions associated with Energy Evolution (or through IRP alternatives initiated by Enbridge Gas) be realized.

Should the OEB determine that the Project should not be approved at this time, OEB staff supports the energy planning approach described by the City of Ottawa, which would entail closer collaboration between Enbridge Gas and the City of Ottawa to proactively plan a course of action if and when replacement is required. This would likely involve assessing the reductions in natural gas demand that are expected to arise (independent of Enbridge Gas’s actions) due to the Energy Evolution Plan, and also potentially consider IRP alternatives that Enbridge Gas could pursue to further reduce peak demand. It is likely that any long-term solution would still include a pipeline, but potentially of a smaller size, and potentially in combination with an IRP alternative.

A summary of OEB staff’s comparison of the Project with the Retrofit and Repair options is presented in the table below.

| Options | Option 1: Project | Option 2: Retrofit | Option 3: Repair |
|-------------|--|---|--|
| Description | Full replacement of the proposed section of the pipeline with new pipeline | Maintain existing pipeline but retrofit to allow for in-line inspection, providing a full understanding of pipeline condition and allowing for pro-active repair program. | Maintain existing pipeline as-is, reactively responding to identified leaks or concerns using Enbridge Gas’s existing practices. |

²⁸ Enbridge Gas did not specifically calculate the Net Present Value of the Retrofit option. In its NPV comparison of the Replace and Repair options, Enbridge Gas used a discount rate of 4.39% and an interest rate of 2%. Using these assumptions and comparing spending \$73.5 million now to immediately replace the pipeline, versus spending \$30.2 million now on the retrofit and \$73.5 million (plus interest) at a future date when the pipeline needs to be replaced, OEB staff estimates that the tipping point of the NPV calculation where the retrofit becomes more cost-effective than the immediate replacement is about 23 years of lifetime extension. This is a high-level estimate that does not account for factors such as tax implications, the costs of addressing any leaks that do arise prior to replacement, the potential cost savings from downsizing at time of replacement, and the potential cost savings from deferring the IP PE component of the project.

| RISK to Safety and Reliability | Low | Medium | High |
|--------------------------------|--|--|---|
| Upfront Direct Capital Cost | \$73.5 million ²⁹ | \$30.2 million | \$0 |
| Net Present Value | -\$58.9 million | Not available | -\$7.7 million (based on Enbridge Gas’s estimated cost of leak repair over 40-year horizon) ³⁰ |
| Pros | <ul style="list-style-type: none"> Comprehensively addresses safety and reliability concerns | <ul style="list-style-type: none"> Greatly reduces risk of high-consequence outage and customer loss because of the in-line-inspection identification of faults at early stage of decline Lower upfront cost, potentially higher NPV if pipeline lifetime can be extended by several decades Enables possibility of future pipeline downsizing (due to demand reduction from Energy Evolution and/or potential Enbridge Gas IRP alternatives) | <ul style="list-style-type: none"> Lowest upfront cost, potentially higher NPV if pipeline lifetime can be extended by several decades Enables possibility of future pipeline downsizing (due to demand reduction from Energy Evolution and/or potential Enbridge Gas IRP alternatives) |
| Cons | <ul style="list-style-type: none"> Highest upfront cost, risk of partially stranded assets at some point in pipeline lifetime if natural gas demand drops | <ul style="list-style-type: none"> May not avoid full pipeline replacement in the future, if systemic nature of the integrity concerns is confirmed, requiring ratepayers to pay for both the retrofit, and the pipeline replacement | <ul style="list-style-type: none"> Could result in multiple planned, unplanned and emergency projects Increases the risk of high consequences unplanned outages May not avoid need for full pipeline replacement |

If the OEB accepts Enbridge Gas’s argument that a full pipeline replacement is likely to be

²⁹ Excludes contingency costs and costs associated with the IP PE portions of the project. Including these costs brings the project cost to \$123.7 million. See Exhibit I.ED.17.

³⁰ Does not include costs if leak occurs that requires isolation of St. Laurent pipeline during heating season

required in the near future on the basis that although the likelihood of the system shutdown is low but the consequences of potential loss of service could be high, then OEB staff submits that the Project is appropriately sized.

OEB staff submits that the IRP alternative pursued by Enbridge Gas, including targeted DSM, will not feasibly reduce the peak demand served by the St. Laurent system on a scale sufficient to reduce the sizing of the proposed Project in the near term. Similarly, the Sponsors' Evidence does not demonstrate that peak demand reductions of the required scale have been achieved (or are likely to be achieved within the next few years) due to Energy Evolution. This is not surprising as the implementation of Energy Evolution is at a very early stage, and initial efforts have been focused primarily on energy use by the corporate City of Ottawa. The corporate City of Ottawa accounts for only about 3-4% of the overall natural gas consumption by the community.³¹ To have an impact on Enbridge Gas's natural gas infrastructure planning, evidence will be needed that Energy Evolution can successfully deliver reductions in natural gas demand among the broader community.

3.3 Project Cost and Economics

Enbridge Gas estimated the Project costs as shown in the table below to be approximately \$33.9 M for the IP PE pipeline segments and \$89.8M for XHP ST pipelines, totalling approximately \$123.7M.

The abandonment costs are not included in the cost estimates for the Project.

Table 9: Estimated Project Costs

| <u>Item No.</u> | <u>Description</u> | <u>IP PE Costs</u> | <u>XHP ST Costs</u> | <u>Total Costs</u> |
|-----------------|------------------------------|---------------------|---------------------|----------------------|
| 1.0 | Material Costs | \$358,484 | \$1,268,313 | \$1,626,797 |
| 2.0 | Labour Costs | \$20,369,317 | \$48,953,572 | \$69,422,889 |
| 3.0 | External Permitting & Land | \$6,303 | 787,387 | \$793,690 |
| 4.0 | Outside Services | \$2,849,096 | \$4,523,814 | \$7,372,910 |
| 5.0 | Direct Overheads | \$531,062 | \$751,515 | \$1,282,577 |
| 6.0 | Contingency Costs | \$3,318,390 | \$16,405,401 | \$19,723,791 |
| 7.0 | Project Cost | \$27,432,652 | \$72,690,002 | \$100,122,654 |
| 8.0 | Indirect Overheads | \$6,203,171 | \$16,340,923 | \$22,544,094 |
| 9.0 | Interest During Construction | \$230,655 | \$782,119 | \$1,012,774 |
| 10.0 | Total Project Costs** | \$33,866,478 | \$89,813,044 | \$123,679,522 |

*XHP ST costs are a Class 5 cost estimate

**Abandonment costs are not included in the cost estimates. Abandonment costs for IP PE are estimated to be \$2,817,235 and XHP ST abandonment costs are estimated to be \$7,518,548

³¹ IRR on Sponsors' Evidence, Response to EGI.2(b)

Enbridge Gas provided the costs of comparable projects completed in the past and approved by the OEB including the cost of the completed Phase 1 and Phase 2 of the St. Laurent Replacement Project. The table below summarizes this information.³²

| Case # | Project Name | City | Year | Pipe Size (Diameter / Material) | Length (km) | Estimated Total Costs (millions) | Estimated \$/meter* | Accrued Contingency | Actual Total Costs (millions) | Actual \$/meter |
|---------------------|--|-----------------------|-----------|---|-------------|----------------------------------|---------------------|-----------------------------|-------------------------------|-----------------|
| EB-2015-0042 | Sudbury NPS 10 Replacement Project | Sudbury | 2015 | NPS 12 Steel | 0.7 | \$2,023 | \$2,890 | 10% | \$1,023 | \$1,461 |
| EB-2016-0122 | 2016 Sudbury Replacement Project | Sudbury | 2016 | NPS 12 Steel | 0.85 | \$2,188 | \$2,574 | 13% | \$3,360 | \$3,963 |
| EB-2016-0222 | Sudbury Maley Replacement Project | Sudbury | 2016-2017 | NPS 12 Steel | 2.8 | \$6,304 | \$2,251 | 12% | \$4,206 | \$1,502 |
| EB-2017-0180 (1) | 2018 Sudbury Replacement Project | Sudbury | 2018 | NPS 12 Steel | 20 | \$74,000 | \$3,700 | 15% | \$82,616 | \$4,131 |
| EB-2019-0006 (2) | St Laurent Pipeline Project Phases 1/2 | Ottawa | 2018-2020 | NPS 2, NPS 4, NPS 6, & NPS 8 PE | 5.1 | N/A | N/A | 25% | \$10,546 | \$2,077 |
| EB-2019-0172 (3) | Windsor Line Replacement Project | South-western Ontario | 2020 | NPS 6 Steel | 64 | \$92,744 | \$1,449 | 15% | TBD | TBD |
| EB-2020-0192 (4) | London Lines Replacement Project | South-western Ontario | 2021 | NPS 4 & NPS 6 Steel | 90.5 | \$133,909 | \$1,480 | 14% | TBD | TBD |
| EB-2020-0293 | St Laurent Ottawa North Replacement Project Phases 3/4 | Ottawa | 2022-2023 | NPS 2, NPS 4, & NPS 6 PE NPS 6, NPS 12, & NPS 16 Steel | 19.8 | \$100,123 | \$5,053 | 15% for PE 30% for Steel | TBD | TBD |

*Variations in cost per metre are significantly influenced by specific project scope parameters.

Notes:

- (1) EB-2017-0180: The 2018 Sudbury Replacement Project had large proportions of rock excavation, wetland management, a specialized Cathodic Protection design and bypass installations, which are all costly activities that are not present to the same extent or not present at all in the previously approved OEB projects as indicated in the table. It is the influence of this construction scope that has increased the cost per metre for the 2018 Sudbury Replacement Project. Estimated Total Costs for this project were later increased to \$83 million.
- (2) EB-2019-0006: The actual costs listed are for all components of St. Laurent Phase 1/2. The estimated costs are listed as N/A because portions of Phase 1/2 were not included in the LTC submission EB-2019-0006. The estimated costs included in LTC submission EB-2019-0006 were \$5.511 million for the installation of 1.7 km of NPS 6 PE IP main, resulting in a cost/meter of \$3241/m.
- (3) EB-2019-0172: For comparison purposes, Estimated Total Costs as indicated in the table for the Windsor Line Replacement Project represents "Estimated Incremental Project Capital Costs" (excludes Indirect Overheads of \$14.061 million).
- (4) EB-2020-0192: For comparison purposes, Estimated Total Costs as indicated in the table for the London Line Replacement Project represents "Estimated Incremental Project Capital Costs" (includes Stations, Services, Abandonment and IDC; excludes Indirect Overheads of \$30.189 million).

Enbridge Gas stated that the contingency levels of 15% for polyethylene and 30% steel segments of the Project apply to all direct capital costs. The contingency levels are, according to Enbridge Gas, determined at the time of filing the application "...to correspond to the project/design maturity at the time of filing...". Enbridge Gas indicated that it would reduce contingency cost as the Project's risks are identified and mitigated and design is finalized³³ OEB staff notes that all of the contingency levels for the projects included in the above comparison table are 15% and below except for the St. Laurent Project Phases 1 and 2 where it was 25%.

OEB staff notes that estimated cost for the Project is the highest in comparison to the costs of other completed projects. OEB staff believes that the London Lines Replacement Project is the most comparable as it was completed in 2021 and was a replacement project mainly driven by integrity decline of steel pipelines. The estimated Project cost is \$5,053 per meter compared to \$1,480 per meter actual cost of the London Lines Replacement Project. OEB

³² Enbridge Gas Inc. response to I.STAFF.7 a)

³³ Enbridge Gas Inc. response to I.STAFF.8 a-b)

staff however submits that the comparison may not be fully meaningful because the locations of the two projects differ significantly (i.e., densely urban setting for St. Laurent replacement), and the cost of managing disturbances to urban infrastructure, and socio-economic costs, may be significantly higher in the context of the Project. In addition, the 90.5 km length of London Lines Replacement Project compared to 19.1 km of St. Laurent Project likely provided some economies of scale in construction logistics and total construction cost. OEB staff observes that the contingency of 14% also likely contributed to the lower cost per meter of the pipeline in London Lines Replacement Project. For these reasons, OEB staff cannot conclude that the estimated costs are unreasonable.

Enbridge Gas has applied for Incremental Capital Module (ICM) Treatment to receive approval for the recovery of the costs of Phase 3 of the St. Laurent Project as part of the Company's 2022 Rates Phase 2 Application³⁴ OEB staff notes that the ICM proceeding is still in progress and that the OEB's decision on the ICM application is still to be released.³⁵ Enbridge Gas expects to apply for similar ICM Treatment for the costs of Phase 4 of the St. Laurent Project as part of the Company's 2023 Rates Application to be filed in 2022.³⁶

Were the OEB to consider that the replacement option is the best alternative to address the need, OEB staff notes that condition No. 6 in the Standard Conditions of Approval, agreed upon by Enbridge Gas³⁷, requires that Enbridge Gas file with the OEB the actual capital cost of the Project and explain variances and use of contingencies.

3.4 Environmental Impacts

Enbridge Gas retained Dillon Consulting Ltd (Dillon) to complete an Environmental Report: St. Laurent Ottawa North Pipeline Replacement Project (June 2020) (ER), which assessed the existing bio-physical and socio-economic environment in the study area, the alternative routes, proposed the preferred route, conducted public consultation, conducted impacts assessment and proposed mitigation measures to minimize the impacts.

The ER and the consultation process were conducted in accordance with the OEB's *Environmental Guidelines for Location, Construction and Operation of Hydrocarbon Pipelines in Ontario* [7th Edition, 2016] (OEB Environmental Guidelines).

³⁴ EB-2021-0148, Exhibit B, Tab 2, Schedule 1

³⁵ See the records for the EB-2021-0148 proceeding on the OEB's web site Regulatory Document Search portal.

³⁶ Enbridge Gas Inc. response to I.STAFF.9 a-b

³⁷ Enbridge Gas Inc. response to I.STAFF.20

On July 21, 2020, the ER was made available to the Ontario Pipeline Coordinating Committee (OPCC), Environment and Climate Change Canada (ECCC), National Capital Commission (NCC), Rideau Valley Conservation Authority (RVCA) and the City of Ottawa for review and comments.

Enbridge Gas indicated that there were several updates and amendments to the ER as a result of concerns identified in the review of the ER and the route and that these updates were communicated to the parties through the notices and posting of updates to the ER.

The federal environmental assessment may be required for portions of the Project located on federal lands. Enbridge Gas stated that the consultation with the federal agencies is underway.³⁸

Enbridge Gas stated that it would prepare the Environmental Protection Plans (EPP) for the Project. The EPP will incorporate the mitigation measures identified in the ER and received in the consultation with the OPCC and regulatory agencies. Enbridge Gas plans to complete the EPP prior to mobilization and construction of the Project. Enbridge Gas confirmed that the EPP will include site-specific environmental management, monitoring and contingency plans to implement the mitigation and contingency measures outlined in the ER and ER Amendment and identified through the consultation process.³⁹

OEB staff submits that Enbridge Gas has completed the ER in accordance with the OEB Environmental Guidelines. OEB staff has no concerns with the environmental aspects of the Project subject to conditions of approval Nos. 4, 5 and 6 (see Appendix A) that address environmental matters including implementation of recommendations and requirements identified in the OPCC review and requirements for and mitigation monitoring and reporting of environmental impacts to the OEB.

3.5 Landowner Agreements

Enbridge Gas filed the form of Working Area Agreement which has been previously approved by the OEB as part of the OEB's Decision and Order regarding Enbridge Gas's Innes Road Project.⁴⁰ Enbridge Gas also filed the form of Transfer of Easement Agreement has been previously approved by the OEB as part of the OEB's Decision and Order regarding Enbridge Gas's London Lines Replacement Project.⁴¹ Enbridge Gas has

³⁸ Enbridge Gas Inc. response to I.STAFF.10 b)

³⁹ Enbridge Gas Inc. response to I.STAFF.12

⁴⁰ EB-2012-0438, OEB Decision and Order, April 11, 2013, pages 5-6

⁴¹ EB-2020-0192, OEB Decision and Order, January 28, 2021, page 29

been consulting with the affected landowners and indicated that the landowners raised no concerns. Enbridge Gas expects no delays in acquiring the land rights for the Project.⁴²

In addition to working area agreements and to the transfer of easement agreements, Enbridge Gas stated that it required Municipal Consent approval to locate the pipelines within the right of way (ROW) from the City of Ottawa and may require the approvals and permits to occupy and use Federal lands may be required from the National Capital Commission (NCC).

Enbridge Gas identified in its application the entities that would require approvals, permits and land easements for location, construction and operation of the Project. Enbridge Gas indicated all the permits and agreements required for the Project including the entities issuing these permits and approvals. Enbridge Gas does not anticipate any delays related to permit acquisition that could affect the Project construction schedule⁴³.

OEB staff submits that the OEB should approve the proposed forms of agreements as both forms were previously approved by the OEB.

3.6 Indigenous Consultation

In accordance with the OEB's Environmental Guidelines, Enbridge Gas contacted the Ministry of Energy Northern Development and Mines (MENDM) in respect to the Crown's duty to consult related to the Project, on December 3, 2019. The MENDM, by way of a letter, delegated the procedural aspects of the Crown's Duty to Consult for the Project to Enbridge Gas on January 30, 2020 (Delegation Letter). In the Delegation Letter the MENDM identified two Indigenous communities that Enbridge Gas should consult in relation to the Project:

- Algonquins of Ontario
- Mohawks of Akwesasne

Enbridge Gas provided the MENDM with its Indigenous Consultation Report (ICR) for the Project on March 2, 2021 and updated it on March 4, 2021. The ICR states that Algonquins of Ontario and Mohawks of Akwesasne expressed no concerns or issues related to the Project.

⁴² Enbridge Gas Inc. response to I.STAFF.18 a) and b)

⁴³ Enbridge Gas Inc. response to I.STAFF.17 a)

On April 13, 2021, Enbridge Gas received a letter from the Ministry of Energy indicating that it reviewed the ICR and that, in its opinion, the procedural aspects of consultation undertaken by Enbridge Gas to date are satisfactory (referred to as Sufficiency Letter or Opinion Letter).

The Algonquins of Ontario reviewed the Stage 1 Archaeological Assessment report. Enbridge Gas responded to their comments and is committed to involve the Algonquins of Ontario in the Stage 2 Archaeological Assessment field work and provide capacity funding. Enbridge Gas noted that the Algonquins of Ontario and the Mohawks of Akwesasne participated in virtual monitoring associated with the field work for Phase 3 and Phase 4 Stage 2 Archaeological Assessments. Enbridge Gas confirmed its commitment to involving Indigenous communities in Archeological Assessment work.⁴⁴ In response to an OEB staff interrogatory Enbridge Gas stated that no issues or concerns with the Project were raised by the Algonquins of Ontario or the Mohawks of Akwesasne since September 10, 2021. Enbridge Gas also noted that it received no correspondence or communication from the Ministry of Energy since the Opinion Letter was issued on April 13, 2021.⁴⁵

OEB staff submits that Enbridge Gas appears to have made efforts to engage with affected Indigenous groups and no concerns that could materially affect the Project have been raised through its consultation to date. OEB staff observes that Enbridge Gas appears to be cooperating with the Indigenous communities during the consultation process and that it made commitments to the Indigenous communities related to the Project. OEB staff is not aware of any potential adverse impacts of the Project to any Aboriginal or treaty rights.

3.7 Conditions of Approval

OEB staff sought comments from Enbridge Gas on the OEB's Standard Conditions of Approval for leave to construct applications⁴⁶. In response, Enbridge Gas agreed with the Standard Conditions of Approval.

Section 23 of the OEB Act permits the OEB, when making an order, to impose such conditions as it considers appropriate.

Should the OEB grant leave to construct the Project, OEB staff submits that the approval should be subject to the Conditions of Approval contained in Appendix A of this

⁴⁴ Enbridge Gas Inc. response to I.STAFF 19 d)

⁴⁵ Enbridge Gas Inc. response to I.STAFF 19 b) and c)

⁴⁶ The link to the OEB Standard Conditions for section 90 applications was also provided in the notice of application together with the Standard Issues List for section 90 applications.

submission.

3.8 Conclusion

OEB staff submits that the OEB should not grant leave to construct the Project for the reasons set out above. Should the OEB determine to approve the Project, OEB staff submits that the Project should be subject to the Conditions of Approval attached as Appendix A to this submission.

All of which is respectfully submitted.

Appendix A

**Leave to Construct Application under
Section 90 of the OEB Act**

**Enbridge Gas Inc.
EB-2020-0293
Standard Conditions of Approval**

1. Enbridge Gas Inc. shall construct the facilities and restore the land in accordance with the OEB's Decision and Order in EB-2020-0293 and these Conditions of Approval.
2. (a) Authorization for leave to construct shall terminate 12 months after the decision is issued, unless construction has commenced prior to that date.
(b) Enbridge Gas Inc. shall give the OEB notice in writing:
 - i. of the commencement of construction, at least 10 days prior to the date construction commences
 - ii. of the planned in-service date, at least 10 days prior to the date the facilities go into service
 - iii. of the date on which construction was completed, no later than 10 days following the completion of construction
 - iv. of the in-service date, no later than 10 days after the facilities go into service
3. Enbridge Gas Inc. shall obtain all necessary approvals, permits, licences, certificates, agreements and rights required to construct, operate and maintain the Project.
4. Enbridge Gas Inc. shall implement all the recommendations of the Environmental Report filed in the proceeding, and all the recommendations and directives identified by the Ontario Pipeline Coordinating Committee review.
5. Enbridge Gas Inc. shall advise the OEB of any proposed change to OEB-approved construction or restoration procedures. Except in an emergency, Enbridge Gas Inc. 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.
6. Concurrent with the final monitoring report referred to in Condition 6(b), Enbridge Gas Inc. shall file a Post Construction Financial Report, which shall provide a variance analysis of project cost, schedule and scope compared to the estimates filed in this proceeding, including the extent to which the project contingency was

utilized. Enbridge Gas Inc. shall also file a copy of the Post Construction Financial Report in the proceeding where the actual capital costs of the project are proposed to be included in rate base or any proceeding where Enbridge Gas Inc. proposes to start collecting revenues associated with the Project, whichever is earlier. Both during and after construction, Enbridge Gas Inc. shall monitor the impacts of construction, and shall file with the OEB one electronic (searchable PDF) version of each of the following reports:

- a) A post construction report, within three months of the in-service date, which shall:
 - i. provide a certification, by a senior executive of the company, of Enbridge Gas Inc. adherence to Condition 1
 - ii. describe any impacts and outstanding concerns identified during construction
 - iii. describe the actions taken or planned to be taken to prevent or mitigate any identified impacts of construction
 - iv. include a log of all complaints received by Enbridge Gas Inc., including the date/time the complaint was received, a description of the complaint, any actions taken to address the complaint, the rationale for taking such actions
 - v. provide a certification, by a senior executive of the company, that the company has obtained all other approvals, permits, licenses, and certificates required to construct, operate, and maintain the proposed project
 - b) A final monitoring report, no later than fifteen months after the in-service date, or, where the deadline falls between December 1 and May 31, the following June 1, which shall:
 - i. provide a certification, by a senior executive of the company, of Enbridge Gas Inc. adherence to Condition 4
 - ii. describe the condition of any rehabilitated land
describe the effectiveness of any actions taken to prevent or mitigate
 - i. any identified impacts of construction
 - ii. include the results of analyses and monitoring programs and any recommendations arising therefrom
 - iii. include a log of all complaints received by Enbridge Gas Inc., including the date/time the complaint was received; a description of the complaint; any actions taken to address the complaint; and the rationale for taking such actions
7. Enbridge Gas Inc. shall designate one of their employees as project manager who will be the point of contact for these conditions and shall provide the employee's name and contact information to the OEB and to all affected landowners, and shall clearly post the project manager's contact information in a prominent place at the construction site.