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DECISION AND ORDER

EB-2024-0200

ENBRIDGE GAS INC.

St. Laurent Replacement Project

BEFORE: **Allison Duff**
Presiding Commissioner

Emad Elsayed
Commissioner

Anthony Zlahtic

Commissioner

March 18, 2025

Ontario Energy Board | Commission de l'énergie de l'Ontario

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1 OVERVIEW

Enbridge Gas Inc. (Enbridge Gas) applied to the Ontario Energy Board (OEB) on June 17, 2024, under sections 90 and 97 of the *Ontario Energy Board Act*, *1998*, for an order granting leave to construct approximately 17.6 kilometers of natural gas pipeline and associated facilities along St. Laurent Boulevard, Sandridge Road and Tremblay Road in the City of Ottawa (St. Laurent Pipeline Replacement or Project).

Enbridge Gas stated that the proposed natural gas pipeline will address risks to safety and operational reliability on the St. Laurent Pipeline System (SLP). The Project is designed to replace approximately 14.4 km of existing extra high pressure steel pipeline with 12.8 km of extra high pressure steel pipeline and 4.8 km of intermediate pressure pipeline.

The SLP System serves a total of 167,500 customers: approximately Enbridge Gas's 126,200 customers in the City of Ottawa, and about 40,700 Gazifère customers in Gatineau and 600 Gazifère customers outside of Gatineau. According to Enbridge Gas, the replacement of the SLP is needed to manage the risk to safe and reliable natural gas service to customers in the City of Ottawa and Gatineau.

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 Project route.

For the reasons provided in this Decision and Order, the OEB grants Enbridge Gas's application for leave to construct the Project. The OEB finds that the Project is in the public interest based on an examination of the Project need, alternatives, cost and economics, environmental impacts, land use requirements, and Indigenous consultation.

The OEB also approves the forms of permanent easement and temporary working area agreements that Enbridge Gas has offered or will offer to landowners affected by this Project. The approval of this application is subject to the OEB's conditions of approval, outlined in Schedule A of this Decision and Order.

Enbridge Gas's previous application for leave to construct this Project was denied by the OEB in 2022[1] for the reasons set out by the OEB's decision in that proceeding. The

[1] EB-2020-0293

OEB finds that its concerns expressed in the previous decision have been adequately addressed by Enbridge Gas in the current application.

2 PROCESS

A Notice of Hearing was issued on July 12, 2024. The following parties applied for intervenor status:

- City of Ottawa
- Community Association for Environmental Sustainability (CAFES Ottawa)
- Environmental Defence (ED)
- Energy Probe (EP)
- Federation of Rental-housing Providers of Ontario (FRPO)
- Independent Electricity System Operator (IESO)
- Industrial Gas Users Association (IGUA)
- Pollution Probe
- School Energy Coalition (SEC)

CAFES Ottawa, ED, EP, FRPO, IGUA, Pollution Probe, and SEC applied for and were granted eligibility to apply for cost awards.

All intervenors, with the exception of the City of Ottawa and the IESO, participated in the discovery and submission phases of the proceeding.

The OEB has issued six procedural orders. They addressed a variety of matters, including setting the procedural schedule; deciding on ED's proposal to file intervenor evidence; technical conferences; deciding on a request that Enbridge Gas file additional information related to certain undertakings; and determining to proceed by way of a written hearing.

The proceeding included discovery by written interrogatories; Enbridge Gas's responses; a transcribed virtual technical conference; and the filing of undertaking responses from the technical conference. The technical conference was originally scheduled for two days and took place on October 30 and 31, 2024. Following a request by ED, the OEB scheduled an additional one-half day on November 13, 2024 to allow clarification questions related to interrogatory responses filed by Enbridge Gas that pertain to the work of Posterity Group and Integral Engineering, consultants to Enbridge Gas. Intervenors and OEB staff filed written submissions on January 24, 2025, and Enbridge Gas filed its reply on February 7, 2025.

3 DECISION

The structure of this Decision is based on the OEB's standard Issues List for natural gas leave to construct applications, to address the following issues:

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

Energy Probe and OEB staff supported the application and recommended the OEB grant leave to construct the Project. ED, FRPO, IGUA, Pollution Probe/CAFES Ottawa, and SEC did not support approval of the application. Summaries of the positions of the parties and OEB staff are included in the sections below.

3.1 Need for the Project

Enbridge Gas submitted that the Project is needed to manage the safety, operational and reliability risks caused by the declining integrity of vintage steel distribution pipelines in the St. Laurent Pipeline system (SLP).

The existing SLP location, land uses and pipeline operational parameters are shown on the map below.[2]

[2] Exhibit B, Tab 1, Schedule 1, Figure 1, page 1

Primary Pipeline Characteristics

Length:	11.2km
Pipe Size:	NPS12 / NPS16
Vintage:	1958 (and later)
Coating:	Coal Tar / Polyethylene
Grade:	207MPa
Wall Thickness:	6.35mm / 9.5mm
MOP:	275 psi
% SMYS:	23.2% (NPS 12)
Depth of Cover:	0.2 to 14 m
Customers:	168,000 (Ottawa + Gatineau)
Surrounding:	Dense Urban
Land Use:	Retail, Commercial, Residential, Hospitals, Schools

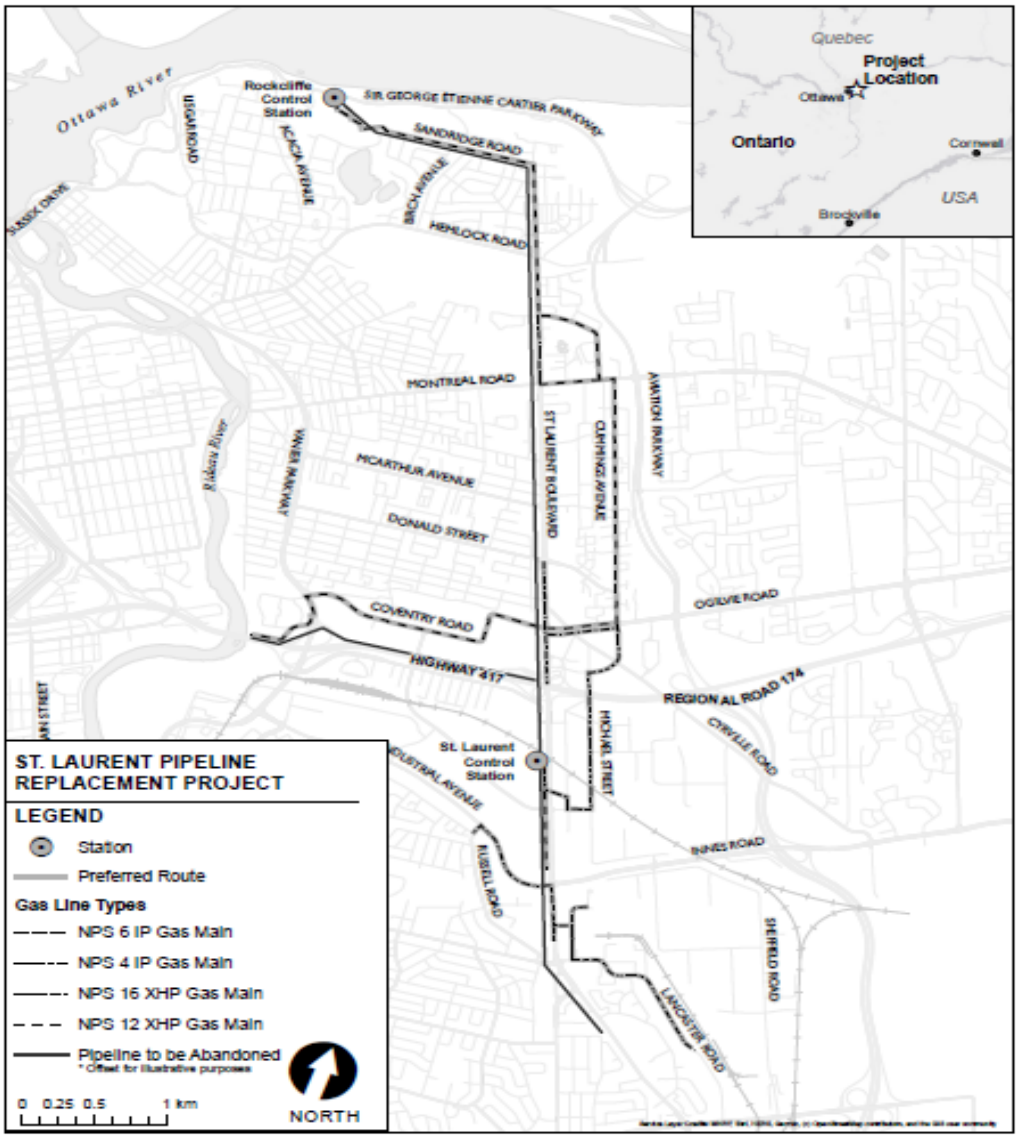
The SLP system is comprised of 10.8 km of NPS 12 coated steel pipe and 0.4 km of NPS 16 coated steel pipe[3]. The SLP was originally commissioned between 1958 and 1959 at a maximum operating pressure (MOP) of 1,200 kPa (175 psi). Due to the increase in demand from new and existing customers fed by this pipeline, a pressure elevation was completed in 1985 to increase the MOP of the pipeline to 1,900 kPa (275 psi). This MOP increase was based on Clause 9.13 of the 1983 edition of the Canadian Standards Association (CSA) Z184 Gas Pipeline Systems standard (CSA Z184-M1983). This clause permits the increase of a pipeline's MOP to 80% of its design pressure, as opposed to relying on an established pressure test.

In terms of the timeline for commissioning the existing SLP segments, 70.9% of the SLP was commissioned between 1958-1959 and 81.5% of the SLP was commissioned between 1958-1962. The other SLP pipeline sections were constructed after 1972.[4]

According to Enbridge Gas's proposed construction schedule, Project construction is anticipated to take approximately 21 months, starting in April 2025. The replacement SLP is expected to be in service by December 2026.

[3] Exhibit B Tab 1 Schedule 1 Plus Attachments, page 3
[4] Response to I.1- CAFES-Ottawa.17, (a) and (b), Table 1 SLP Lengths Constructed by Vintage

The Enbridge Gas SLP Replacement Project's general location is shown on the map below.[5]



This section includes a summary of the evidence, followed by positions of the parties and OEB findings. The summary of the evidence is organized as follows:

- Previous St. Laurent Ottawa North Replacement Project Application
- Targeted Inspection Program and Quantitative Risk Assessment
    - Targeted Inspection Program Results

[5] Exhibit A, Tab 1, Schedule 1, page 1

- Quantitative Risk Assessment Results
  - CSA Z662-19 Annex O Reliability Targets
  - PHMSA Distribution Pipeline Significant Incidents Benchmark
  - Enbridge Standard Operational Risk Assessment
    - DNV validation of the Quantitative Risk Assessment
    - TSSA's fitness-for-service review

Previous St. Laurent Ottawa North Replacement Project Application

On May 3, 2022, the OEB denied Enbridge Gas's previous application for leave to construct the replacement of the SLP. The OEB found that Enbridge Gas did not:

- Demonstrate that the risk associated with the subject pipelines warrants complete replacement. The OEB suggested that a proactive approach be taken to inspecting and maintaining the subject pipeline until it can be demonstrated that pipeline replacement is necessary.[6]

- Provide sufficient evidence to demonstrate that the proposed pipeline replacement is the best available alternative. The OEB made a number of recommendations that included: development and implementation of an in-line inspection and maintenance program using available modern technology, in-depth quantitative and qualitative analysis of alternatives that specifically include the impacts of IRP, DSM programs and de-carbonization efforts.[7]

Enbridge Gas's evidence on risk assessment for the previous St. Laurent Ottawa North Replacement Project was not based on current data gathered systematically by direct testing of the current condition of the SLP. Enbridge Gas indicated that the declining condition of the pipelines was assessed using the results of past system surveys and inspections, conducted at various locations of the SLP between 2006 and 2018. Enbridge Gas used its Asset Health Index (AHI) methodology to predict how the condition of the existing SLP would change over a forty-year time frame (if not replaced), and to project the number of leaks that may occur. At that time Enbridge Gas submitted that it did not have infrastructure to conduct an in-line inspection of the SLP to further assess its condition. In terms of risk assessment, Enbridge Gas conducted

[6] EB-2020-0293 Decision and Order, dated May 3, 2022, pages 14-15
[7] *Ibid.*, pages 23-24

qualitative risk assessment using its Standard Operational Risk Assessment Matrix.[8] Quantitative Risk Assessment (QRA) was not performed.

Targeted Inspection Program and Quantitative Risk Assessment Overview

To support the need for the Project in the current application, Enbridge Gas has undertaken a full re-examination of the condition of the existing SLP using a Targeted Inspection Program (TIP) and QRA.

The TIP activities covered a two-year period between Q2 2022 and Q2 2024. In the last phase of the TIP, Enbridge Gas concluded that a full replacement of the SLP is the most financially prudent option with the best risk reduction[9].

Enbridge Gas implemented a QRA with the data inputs it acquired through inspection and testing. The QRA approach involved applying three sets of standards to assess the risk associated with the current condition of the SLP and to assess the risk to reliability and safety:

- CSA Z662-19 Annex O Reliability Targets
- USA Pipeline and Hazardous Material Safety Administration (PHMSA) Distribution Pipeline Significant Incidents Benchmark
- Enbridge Standard Operational Risk Assessment Matrix (ORAM)

Enbridge Gas highlighted that it had the QRA results validated by the third-party consulting company, DNV, and that the Technical Standards Safety Authority (TSSA) reviewed the Project's fitness-for-service documentation and recommended remedial action.

Targeted Inspection Program Results

Enbridge Gas asserted that it used modern technology to in-line inspect portions of the pipeline to detect and size measurable pipeline defects that exist on the SLP. In addition, Enbridge Gas emphasized that it supplemented the in-line inspection with in-field non-destructive examination (NDE), lab in-line inspection (ILI) validation testing, and lab evaluations of pipe material samples.

According to Enbridge Gas, the objectives of the TIP are to determine the safety and reliability of the pipeline's operability, identify immediate mitigation measures, and assess

[8] EB-2020-0293 Enbridge Gas Inc. response to interrogatory I.STAFF.4
[9] Additional description and submissions on the evaluation of alternatives will be covered in the chapter on Project Alternatives

asset management requirements for remaining life options, including safety, reliability, and economic considerations (e.g., repairs, replacement).[10]

The on-site inspection methods completed on the SLP by Enbridge Gas, since June 2022, include:

- In-line Inspection – Robotic Crawler Tool – Magnetic Flux Leakage (MFL)
- In-line Inspection – Robotic Crawler Tool – Laser (LDS)
- Opportunistic Excavations with Non-Destructive Examination
- Cathodic Protection (CP) Survey – Close Interval Potential Survey (CIPS)

Additional surveys and tests included:

- Direct Current Voltage Gradient (DCVG) testing for coating and cathodic protection
- Depth of cover measuring
- Leak and odorant surveys

The concrete, on location, inspection results came from In-line Inspection (ILI) and subsequent field NDEs (through excavation). ILI using an MFL-LDS inspection tool, was used to cover 4.5 km (40%) of the SLP system. The ILI location sites were selected based on access, CIPS, location and other surveys, assuming the main load is the internal pressure. The location and extent of the ILI inspection is shown on a map below. [11]

A total of 611 metal loss features identified by Enbridge Gas along the inspected portion of the pipeline indicate possible corrosion or gouging, with 12 significant features reported with depths greater than 40% of the wall thickness. This represents average metal loss (corrosion) density of 138 anomalies per km.

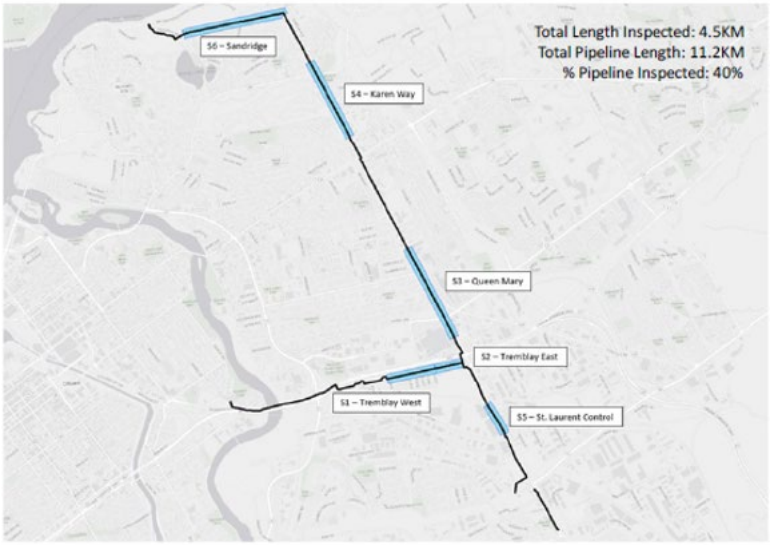
A total of 386 dent features from third-party damage with a depth greater than 0.5% of the pipeline diameter were identified along the inspected portion of the pipeline, using ILI with laser measurement.

Based on the ILI data, the calculated third-party interference hazard rate is in the highest 13% of hazard rates for mains within the Enbridge Gas distribution system. [12]

[10] Exhibit B Tab 1 Schedule 1 Plus Attachments, page 6, Table 1
[11] Exhibit B, Tab 1, Schedule 1, paragraph 14, page 6, Table 1. Inspections and Surveys and Figure 2. Robotic Crawler ILI Extents and Locations

[12] Exhibit B, Tab 1, Schedule 1, paragraph 20, page 11

Figure 2: Robotic Crawler ILI Extents and Locations



On site integrity digs were conducted at 13 locations (including one where NDE assessment was not completed). Enbridge Gas identified a total of 212 anomalies including corrosion, gouging, arc burns, and welding defects. Enbridge Gas stated that over one hundred of the anomalies were significant enough to require pipeline repairs in compliance with Enbridge Gas's Operating Standards and Canadian Standards Association 2019, CSA Z662 Oil and Gas Pipeline Systems (CSA Z662-19).[13]

Reviewing the SLP historical data, between 2007 and 2023, Enbridge Gas identified ten reported and repaired leaks. Nine of the leaks were at valves, fittings and service connections which Enbridge Gas assessed to represent no potential hazard. One leak was on a pipeline and Enbridge Gas assigned the highest risk level to the potential hazard of this fault. Enbridge Gas further noted that in urban environments, hard surfaces and buildings represent a higher risk of gas leaks in confined spaces and increased risk of a build-up to explosive levels.[14]

Quantitative Risk Assessment Results

Enbridge Gas conducted a QRA using the gathered data inspection and survey data and information to assess the level of risk of the SLP system, considering

[13] Exhibit B, Tab 1, Schedule 1, paragraph 35, page 18
[14] Exhibit B, Tab 1, Schedule 1, paragraph 46, pages 28-29, Table 6: Leak Report Summary

different elements such as potential failure modes and consequences on health and safety, operational disruption, and financial impacts related to the frequency of these failures.

Enbridge Gas stated that the QRA of the SLP took into consideration all available data on quantified hazards and potential risks. This assessment was then measured against three distinct evaluation criteria to determine SLP feasibility for continued safe operation. The evaluation criteria included CSA Z662-19 Annex O Reliability Targets, PHMSA Distribution Pipeline Significant Incidents Benchmark, and Enbridge Standard Operational Risk Assessment Matrix (ORAM).[15] These three evaluation criteria are described below.

CSA Z662-19 Annex O Reliability Targets

CSA Z662-19 Annex O sets target reliability thresholds for the Leakage Limit State (LLS), which addresses small leaks, and the Ultimate Limit State (ULS), which concerns larger leaks and ruptures (CSA Z662-19: Annex O – O.1.5.2 & O.1.5.3). These reliability targets are designed for gas transmission pipelines and align with the standards for U.S. transmission pipelines following the American Society of Mechanical Engineers (ASME) B31.8 standard. The St. Laurent pipeline, operating at 23.2% Specified Minimum Yield Strength (SMYS), falls under the U.S. classification for transmission pipelines.

Based on assessment against CSA Z662-19 Annex O Reliability Targets, Enbridge Gas concluded:

- 3.6 km of the 11.2 km pipeline (32%) were assessed to have a small leak failure rate above the 1E-3 incidents per km/yr, which is the LLS limit described by CSA Z662 - Annex O.[16]

- 7 km of the 11.2 km pipeline (62%) were assessed to have a large leak or rupture failure rate above the 5.8E-5 incidents per km/yr, which is the ULS limit described by CSA Z662 – Annex O for a NPS 12 pipeline at 275 psi MOP in a Class 3 (urban) location.

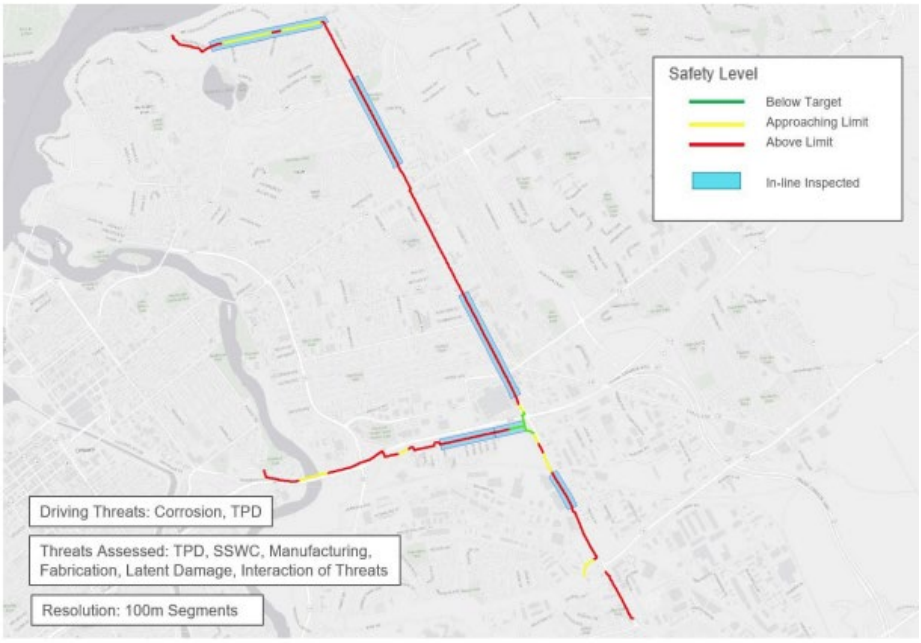
- Integrating the LLS and ULS approaches results in a conclusion that 8.8 km of the 11.2 km pipeline (79%) fail one or both reliability limits.

[15] Exhibit B, Tab 1, Schedule 1 Appendix B, Quantitative Risk Assessment (QRA) Overview

[16] Exhibit B, Tab 1, Schedule 1, Attachment 2, page 37

SLP Reliability vs. the Reliability Targets set out in the CSA Z662-19 Annex O, is illustrated in the map below for this project.[17]

Figure 17: SLP Reliability vs. Targets (LLS and ULS targets combined)



PHMSA Distribution Pipeline Significant Incidents Benchmark

A significant incident benchmark is defined by PHMSA[18] as the historical average of significant incidents. Enbridge Gas used this benchmark value for a comparison of the estimated number of significant incidents on SLP compared to the average observed in the industry.

Enbridge Gas applied, as a benchmark value, a hazard rate of approximately 1.73E-5 per km/yr of significant incidents which meets PHMSA's reporting thresholds.[19] The combined failure rate from all sources, converted to equivalent significant incident rate, is 4.6E-2 incidents per km/yr, with corrosion and TPD being the highest contribution.

[17] Exhibit B, Tab 1, Schedule 1, paragraphs 49-54, pages 33-37, Figure 17: SLP Reliability versus Targets (LLS and ULS targets combined)

[18] US 49 CFR § 191.3

[19] Exhibit B, Tab 1, Schedule 1, Attachment 2, page 45

Enbridge Standard Operational Risk Assessment Matrix (ORAM)

ORAM is an Enbridge Gas wide measure of risk acceptance that is used to support risk-informed decision making in all Enbridge Gas business units. This risk matrix is intended to be applied to the assessment of scenarios or events that could result in health or safety impacts to the Enbridge Gas workforce or the public, damage to the environment, impacts to the reliability of Enbridge Gas's assets, reputational damage, or financial losses. The key risks on the SLP that were mapped to the ORAM were Health & Safety, Financial, and Operational Reliability risks.

Considering the overall risks of a failure on the pipeline system, the QRA was supplemented with consequences of various outcomes and mapped to the Enbridge Standard ORAM. This exercise concluded that various risk scenarios meet the Enbridge Operational Risk Matrix definitions of "High Risk" or "Very High Risk".[20]

DNV Validation of the Quantitative Risk Assessment

To enhance the level of confidence in the results, Enbridge Gas sought the expertise of DNV, an internationally recognized consulting firm with a specialization in quantitative risk assessments.

DNV performed a qualitative review of the approach used by Enbridge Gas and its evaluation of the reliability and risk assessment methodologies employed in the QRA, as well as the application of various risk tolerance thresholds. DNV's review concluded that the methodologies applied were consistent with standard industry practices.[21]

DNV agreed with the conclusion made by Enbridge Gas that the risk analysis with the matrix resulted in scenarios with "High Risk" or "Very High Risk" and that additional remedial action to improve the reliability of 8.8 km of the pipeline should be considered.

DNV suggested additional calculations of gas release sub-scenarios and sub-segmentation would not change the assessment risk outcome and/or conclusion by Enbridge Gas that the replacement is the optimal option to manage the risk.

[20] Exhibit B, Tab 1, Schedule 1 Appendix B, paragraph 10.iii, page 8
[21] Exhibit B, Tab 1, Schedule 1, Attachment 3, page 1

TSSA's Fitness-for-service Review

Enbridge Gas requested the TSSA to perform an Engineering Consultation and provide comments on the fitness-for-service, integrity, and risk assessments completed by Enbridge Gas for the existing St. Laurent pipeline. [22] The TSSA issued a letter (Work Order No. 14370698) on September 20, 2024 to Enbridge Gas indicating that Enbridge Gas complied with the intent of clauses 3, 10, and 12 of CSA Z662-19. However, the TSSA also recommended that the risks need to be properly managed by Enbridge Gas to remain in compliance with CSA Z662-19 and actions should be taken by Enbridge Gas to remediate the condition of the SLP. The TSSA letter to Enbridge Gas did not recommend specific actions in this regard but concluded that "…The risks now need to be properly managed by Enbridge to remain in compliance with the CSA Z662-2019 [and that] actions shall be taken by Enbridge to remediate the condition of the St. Laurent pipeline." [23]

Positions of OEB Staff and the Parties

OEB staff supported Enbridge Gas's submission that the evidence demonstrates need for remedial action. Specifically, OEB staff submitted that a replacement of the SLP pipeline is needed to mitigate the risks associated with declining condition of the SLP.

OEB staff noted that TIP is a comprehensive approach and uses modern methods to inspect the current condition of the pipeline, identify risks, assess risks, respond to risks, evaluate alternatives and re-evaluate the alternatives. Regarding QRA methodology, OEB staff submitted that combining the three sets of standards and targets to assess the risks seems adequate and valid.

OEB staff agreed with Enbridge Gas that given the absence of specific reliability targets for distribution pipelines in Canada, along with the increased risks associated with the pipeline's location in urban areas, the CSA Z662 Annex O reliability targets can serve as a crucial benchmark for assessing the pipeline's reliability under these conditions. OEB staff submitted that although CSA Z662 Annex O is an informative (non-mandatory) part of the standard, it is considered to provide a level of rigor for engineering assessments for safety consideration (CSA Z662 Annex O Clause 3.4).

[22] Response to interrogatory Exhibit I.1-STAFF-12, with Attachments
[23] Response to interrogatory Exhibit I.1-STAFF-12, Attachment 2 Letter by the TSSA to Enbridge Gas Inc. dated September 20, 2024, page 2

OEB staff noted that the TSSA evaluated Enbridge Gas's report on the SLP's fitness-for-service and recommended that the risks need to be properly managed by Enbridge Gas to remain in compliance with the CSA Z662-19 and actions should be taken by Enbridge Gas to remediate the condition of the SLP. OEB staff acknowledged its understanding that the TSSA does not typically recommend specific actions (i.e. replacement or inspection and repairs).

OEB staff did not have concerns with the DNV evaluation of Enbridge Gas's QRA. OEB staff noted that DNV pointed to certain actions to refine the accuracy of the reliability of risk value but remarked that these actions would not change the assessment risk outcome and/or conclusion by Enbridge Gas that replacement is the optimal option to manage the risk.

In conclusion, OEB staff submitted that Enbridge Gas has demonstrated the need to take corrective action to address the condition of the existing SLP.

FRPO acknowledged that Enbridge Gas improved its methodology to determine the current condition of the SLP. While containing some levels of quantification, FRPO submitted that the methodology is still prone to subjectivity in a manner that is hard to de-construct. Enbridge Gas responded that the CSA Z662-19 and PHMSA thresholds were fully quantitative and that ORAM was the only qualitative risk assessment measure. FRPO also expressed concerns with the ILI inspection of 40% of the SLP length and inferences based on these results. FRPO was also concerned with the DNV validation of the QRA methodology.[24] Enbridge Gas disagreed with FRPO's concerns and noted that the ILI results, NDE examinations and tests resulted in a high number of metal loss features and other anomalies and submitted that the DNV validation of the QRA concluded that risk to safe operation of the SLP is high. Enbridge Gas pointed to various parts of the record to support its position.[25]

Other intervenors accepted Enbridge Gas's evidence on the need for remedial action to address safety and reliability risks related to the declining condition of the SLP. Pollution Probe/CAFES Ottawa suggested that the information campaigns by Enbridge Gas about the need for the Project were inaccurately representing the facts and implied that the City of Ottawa does not fully endorse the full replacement.[26] Enbridge Gas noted that the City of Ottawa did not object or express any concerns with regard to the application.[27]

[24] FRPO Written Submission, January 24, 2025, pages 2-4
[25] Enbridge Gas Final Argument, February 7, 2025, paragraphs 46-47,pages 16-17
[26] Pollution Probe and CAFES Ottawa Consolidated Submission, January 24, 2025, page 11-12
[27] Enbridge Gas Final Argument, February 7, 2025, paragraphs 42-46, pages 15-17

Findings

The OEB finds that the need to take remedial action with respect to the existing pipeline has been demonstrated in this application. In its decision on the previous application, the OEB stated:

> The OEB suggests that Enbridge Gas take a proactive approach to inspecting and maintaining the subject pipeline until it can be demonstrated that pipeline replacement is necessary. This may include development and implementation of an in-line inspection and maintenance program using available modern technology as discussed in the next section. The evidence in this proceeding revealed that Enbridge Gas does not currently have the necessary infrastructure to carry out such in-line inspections in the St. Laurent Pipeline.[28]

At the time of the previous decision, Enbridge Gas did not have the infrastructure for in-line inspection. The operational risk of the pipeline was assessed by using historical data for the period 2006-2018 and qualitative risk assessment using Standard Operational Risk Matrix and Asset Health Index Methodology projecting number of leaks with historical data input.[29]

In the current application, Enbridge Gas explained that it developed a Targeted Inspection Program with in-line inspection techniques, field excavations and evaluation, additional examinations and validation testing. The surveys and testing resulted in on-site identification of 212 anomalies by non-destructive integrity digs, a total of 611 metal loss features with 12 significant features reported with depths greater than 40% of the wall thickness[30], and a total of 386 dent features from third-party damage with a depth greater than 0.5% of the pipeline diameter using In-line Inspection with laser measurement[31].

Enbridge Gas also developed a QRA using current data. The QRA measured risks against three distinct evaluation criteria to determine the feasibility for continued safe operation of the SLP. A third party (DNV) validated the methodology and conclusions of Enbridge Gas's QRA. [32]

[28] OEB Decision and Order, EB-2020-0293, May 3, 2022, page 15
[29] OEB Decision and Order EB-2022-0293, May 3, 2022, pages 8-10
[30] Exhibit B, Tab 1, Schedule 1, paragraph 18, page 9
[31] Exhibit B, Tab 1, Schedule 1, paragraph 20, page 11
[32] EB-2020-0293 Enbridge Gas Inc. response to interrogatory I.STAFF-4

The TSSA also confirmed that remedial actions need to be taken to address the deteriorated condition of the pipeline. The TSSA indicated that "risks now need to be properly managed to remain in compliance with the Canadian Standards Association".[33]

The OEB finds that with the additional in-line inspections, site examinations, testing, QRA validated by a third party and TSSA correspondence, Enbridge Gas has demonstrated the need to take remedial action.

Some intervenors questioned Enbridge Gas's reference to the CSA Z662-19 Annex O reliability targets in the QRA and cautioned the OEB against relying on this non-mandatory aspect of the Canadian standard. The OEB agrees with OEB staff that given the absence of specific reliability targets for distribution pipelines in Canada, the CSA Z662 Annex O reliability targets[34] can serve as a crucial benchmark for assessing the pipeline's reliability under these conditions. The OEB considered intervenor concerns, but as the Annex O reliability targets are but one of three evaluation criteria within the QRA, the OEB finds that the qualitative nature of these targets is not sufficient to discredit the QRA. The OEB acknowledges that specific reliability targets are not established by the CSA and are non-mandatory for distribution pipelines in Canada.

3.2 Project Alternatives

To determine the best alternative to reduce the risk associated with the integrity and declining condition of the SLP, Enbridge Gas evaluated integrity program and facility alternatives, and non-facility alternatives including Integrated Resources Planning Alternatives (IRP alternatives). Enbridge Gas concluded that full replacement is the best alternative to address the need for the Project.[35]

This section first discusses Enbridge Gas's consideration of IRP alternatives, followed by its initial analysis of six facility alternatives, and Enbridge Gas's detailed comparison of the two most promising facility alternatives (Alternative A – full replacement, Alternative B – extensive inspection and repair). The assessment of Alternative A and Alternative B compared these alternatives across five dimensions, including public safety and residual risk, public disruption and nuisance, and financial assessment.

[33] Enbridge Gas Inc. response to interrogatory Exhibit I.1-STAFF-12, Attachment 2 Letter by the TSSA to Enbridge Gas Inc. dated September 20, 2024, page 2
[34] CSA Z662 Annex O Clause 3.4
[35] Application and Evidence, Exhibit A, Tab 2, Schedule 2, page 3

Non-Facility Alternatives, Including Integrated Resource Planning Alternatives

Enbridge Gas indicated that it reviewed potential non-facility/IRP alternatives to the Project as required by the OEB IRP Framework.

Enbridge Gas submitted that implementation of IRP alternatives would not address the risks associated with the condition of the SLP, as both supply-side alternatives and demand-side alternatives would still require making use of the existing SLP. Therefore, Enbridge Gas submitted that the scope of its IRP alternatives assessment was limited to assessing whether the proposed Project pipeline size could be reduced, rather than avoided entirely. For this reason, IRP alternatives were not advanced to the five-dimensional evaluation of risk mitigation alternatives used by Enbridge Gas to compare Alternatives A and B.

Enbridge Gas indicated that a peak hour demand reduction of between 13,300 m^3/hr and 25,100 m^3/hr (depending on the location of demand reduction) would be required by winter 2025/2026 to allow Enbridge Gas to downsize the Project's 2.4 km of NPS 16 to NPS 12. Downsizing this segment would provide Enbridge Gas with a cost saving of approximately $1.3 million.[36]

Enbridge Gas assessed four IRP alternatives (two supply-side alternatives and two demand-side alternatives) that could enable pipeline downsizing, but rejected all four, as described below.

- **Incremental Gas Supply** – rejected for technical reasons as there are no additional interconnects in the area to provide incremental supply.

- **Compressed Natural Gas** – rejected for economic reasons as the cost of the compressed natural gas alternative is approximately $1.2 million every year, thus the lifetime cost of this alternative is significantly higher than the savings resulting from downsizing the pipe.

- **Enhanced Targeted Energy Efficiency** – rejected for technical and economic reasons. Enbridge Gas indicated (based on an evaluation of energy efficiency potential from the Posterity Group) that the maximum peak hour reduction potential from enhanced targeted energy efficiency for its general service customers was less than the peak hour demand reduction required for pipe downsizing, and the full potential could not be achieved until 2042, long after the date of winter 2025/26 by which Enbridge Gas submitted that the pipeline would

[36] JT 1.20 provides additional detail on this cost estimate.

need to be replaced or repaired due to condition risks. The cost of enhanced targeted energy efficiency (approximately $77 million) would also be much higher than the cost savings associated with pipeline downsizing.

- **De-Contracting Capacity of Existing Contract Customers** – rejected for technical reasons. Enbridge Gas sent out a binding reverse open season document to all existing distribution contract rate customers in the proposed Project service area, which gave the customers the opportunity to de-contract existing distribution capacity, or to convert existing firm distribution service to interruptible service (with negotiated interruptible rates). Enbridge Gas also sent out a non-binding Expression of Interest which included the option of bidding for new interruptible service. Uptake by customers of any of these options would reduce the peak hour demand Enbridge Gas would be required to serve, however, no bids for either the reverse open season or the Expression of Interest were received.

Enbridge Gas also indirectly considered the impact of the City of Ottawa's Energy Evolution Plan in reducing natural gas use, through potential (downward) adjustments to its demand forecast. Enbridge Gas concluded that the status of the priority projects within the Energy Evolution Plan that could impact natural gas demand shows that the majority are currently off track and, therefore, the timing of when the reductions could occur cannot be determined. As a result, no adjustments to the demand forecast were made.[37]

Positions of OEB Staff and the Parties on Non-Facility Alternatives, Including Integrated Resource Planning Alternatives

Several parties raised concerns with Enbridge Gas's consideration of non-facility and IRP alternatives, but no party disagreed with Enbridge Gas's conclusion that there was no IRP alternative that, on its own, would address the risks associated with the condition of the SLP. No party recommended implementing an IRP alternative at this time for the purpose of downsizing the proposed Project. However, SEC and FRPO, who were not supportive of the proposed Project and expressed a preference for further consideration of Alternative B (extensive inspection and repair), indicated that there could be a role for IRP alternatives to enable pipeline downsizing, should pipeline segments need to be replaced at a future date.

[37] Enbridge Gas Inc. response to Pollution Probe interrogatory Exhibit I.2-PP-42(b)

ED recommended that Enbridge Gas's IRP analysis in future cases should:

- **Include peak demand reduction potential from contract customers.** ED noted that the exclusion of contract customers from the Posterity Group's analysis of energy efficiency potential, combined with the exclusion of ex-franchise customers (Gazifère customers in Quebec) resulted in 43% of the demand on the SLP system being excluded from the Posterity Group's analysis.

- **Include peak demand reduction potential from electric heat pumps.** ED requested Enbridge Gas to confirm that it will be assessing electric alternatives in future IRP assessments. ED noted that, while the first-generation IRP Framework ruled out electric alternatives, the OEB had signaled that this could evolve going forward. ED believes it is appropriate to review the inclusion of electric alternatives.

- **Account for the full benefits of deferrals.** ED indicated that deferring a capital project provides planning value (or option value) as it may provide the utility additional time to find other, less costly solutions, or to develop better estimates of future capacity needs. ED noted that this category of benefits is recognized in the OEB's (electricity) Benefit-Cost Analysis Framework and should be considered and quantified by Enbridge Gas.

- **Account for on-bill savings for customers from IRP alternatives.** ED suggested that the on-bill savings to customers from an energy efficiency IRP alternative can be greater than the direct costs to Enbridge Gas for the IRP alternative and should be taken into consideration.

OEB staff also expressed two of these concerns (exclusion of peak demand reduction potential from contract customers, and lack of consideration of on-bill savings in economic comparison of alternatives) but submitted that addressing these issues would not change OEB staff's conclusion that a demand-side IRP alternative (in combination with pipeline downsizing) is not preferable to the proposed Project.

SEC and Pollution Probe/CAFES Ottawa also noted concerns about the exclusion of contract customers from the energy efficiency feasibility analysis.

Pollution Probe/CAFES Ottawa further claimed that the IRP analysis by Posterity was high-level and superficial and did not represent a credible attempt to develop any IRP Plan or deliver any IRP outcomes. Pollution Probe/CAFES Ottawa also referenced the

OEB's direction in the previous SLP proceeding[38] recommending that Enbridge Gas should work collaboratively with the City of Ottawa and other stakeholders to proactively plan a course of action if and when pipeline replacement is required, including the pursuit of IRP alternatives. Pollution Probe/CAFES Ottawa submitted that there is no evidence that there has been any tangible progress on IRP projects or targeted energy efficiency in the City of Ottawa.

FRPO (generally supported by ED) submitted that there were a number of supply-side measures that Enbridge Gas had not considered that, in combination, could potentially allow for downsizing of any SLP replacement:

- The choice of options for a new pipeline segment running from the SLP to serve TransAlta (which has possible implications for demand on the SLP)
- A decrease in the minimum inlet pressure at the Rockcliffe Control Station, enabled by the potential relocation of this station
- Optimizing deliveries to Gazifère between the SLP and another pipe (the Eastern feed)
- FRPO also submitted that there was a discrepancy or ambiguity in the demand from Gazifère, stating that the firm contracted hourly demand of 62,600 m^3/hr does not reconcile with the 88,800 m^3/hr stated as the design hour demand.
- Optimizing system operation by raising and lowering pressures at various stations to reduce demand on the SLP, including increasing the operating pressure of some stations.

In reply to the submissions of parties on IRP alternatives, Enbridge Gas submitted that its approach to exclude contract customers from its estimate of energy efficiency potential was appropriate. Enbridge Gas concluded that there would be minimal change in these customers' peak hour demand, based on the results of its reverse open season and direct discussions with these customers. With regard to consideration of electric IRP alternatives in future LTC applications, Enbridge Gas indicated that at this time, it will only consider electric IRP alternatives on a pilot basis, based on its understanding of how the Phase 1 rebasing decision impacts the IRP Framework. With regard to the supply-side measures noted by FRPO, Enbridge Gas submitted that these system design issues had been fully addressed in this proceeding and could not have an impact sufficient to reduce pipeline size. Enbridge Gas further submitted that because these solutions could only potentially impact downsizing of a small section of the SLP with a

[38] EB-2020-0293

cost reduction of $1.3 million, this issue was financially immaterial in the context of the overall size and cost of the proposed Project.

Facility Alternatives Assessment

Initial Assessment of Facility Alternatives

The facilities alternatives evaluation process began with initial review of six distinct alternatives:[39]

Alternative 1: No additional actions and continuing with third-party damage mitigation. This alternative was rejected as the pipeline risk, safety and reliability cannot be mitigated without additional actions.

Alternative 2: Permanent pressure reduction. This alternative was rejected as loss of capacity is not acceptable.

Alternative 3: Extensive Inspection and Repair with Crawler ILI. Chosen for further evaluation.

Alternative 4: Extensive Inspection and Repair with Free-Flow In-line Inspection (ILI) rejected as insufficient to reduce risk on a longer run, although it could meet risk thresholds temporarily.

Alternative 5: Full replacement of the SLP. Chosen for further evaluation and assessed as preferred.

Alternative 6: Partial replacement. This alternative is a combination of extensive inspection and repair and partial replacement of the SLP pipeline. In this alternative, there is a full replacement on St. Laurent Blvd. (60%) and Tremblay Lateral (25%) and a continuation of the extensive integrity monitoring program including crawler inspections and digs on the Sandridge section of the pipeline (15%). Enbridge Gas rejected this alternative stating that the feasibility of the replacement component in this alternative aligns with full replacement alternative, but indicated additional costs would be incurred to mitigate residual risks to ensure pipeline safety in portions of the SLP not replaced.

At the outset Enbridge Gas eliminated “no additional action” alternative (alternative 1) and “permanent pressure reduction” alternative (alternative 2) as it determined that the risk reduction effectiveness was determined inadequate for both. The four remaining risk mitigation alternatives were assessed based on the residual risks after mitigation

[39] Exhibit C, Tab 1, Schedule 1, Table 1: Initial Assessment of Risk Mitigation Alternatives, pages 3-5

and the constructability of the facilities. Enbridge Gas identified alternative 5 (subsequently named Alternative A- Full Replacement) and Alternative 3 (subsequently named Alternative B-Extensive Inspection and Repair) as two feasible risk reduction strategies. Enbridge Gas selected Alternative A – Full Replacement as the preferred option.

Assessment of Two Risk Reduction Alternatives – Alternative A and Alternative B

Enbridge Gas stated that it applied the following five criteria in its comparative assessment of the two risk mitigation alternatives:

- Public Safety and Residual Risks
- Public Disruption and Nuisance
- Financial Assessment (NPV)
- Uncertainty of Plan and Outcomes
- Other Considerations

The table below summarizes a comparison of the two alternatives using metrics within each of the five risk reduction dimensions.[40]

Table 1
Alternatives and Risk Reduction Comparison

Dimension of Alternative Analysis	Metric		Full Replacement	Extensive Inspection and Repair
1. Public Safety and Residual Risk	Risk Reduction from Status-quo	Health and Safety	80x	10x
		Operational Reliability	150x	25x
		Financial[3]	5,000x	300x
	Risk Acceptability and Sustainment		• Residual risk substantially below limits and sustainable	• Residual risk at risk limits and transitory

[40] Exhibit A, Tab 2, Schedule 2, pages 3-5, Table 1: Alternatives and Risk Reduction Comparison

Dimension of Alternative Analysis	Metric		Full Replacement	Extensive Inspection and Repair
2. Public Disruption and Nuisance	Qualitative		• Disruption limited to short term (2 years) • Construction planned, coordinated, and communicated. • Optimized route	• Numerous, ongoing integrity-driven excavations and replacements along heavily trafficked roads • Ongoing inspection and remedial actions through construction activities on a 7-year cycle, plus restoration work • Significant defect repairs/replacements on an emergency basis where disruptions cannot be minimized[4]
3. Financial	NPV ($M in 2024 Dollars)	Case A[5] (63 yrs)	$(134)	$(253)
		Case B[4] (42 yrs)	$(134)	$(170)
		Case C[4] (31 yrs)	$(134)	$(140)
4. Uncertainty	Qualitative		• Lower project scope and execution uncertainty as project is planned and implemented over a much shorter period of time. • Costs are more easily forecast with a higher degree of confidence	• Scope of current and on-going integrity mitigations is highly uncertain with available data. • Cost escalation and discount rates significantly impact NPV. • Multiple unknowns in feasibility (e.g., permits for slabbing, access to repair locations, etc.)

Dimension of Alternative Analysis	Metric	Full Replacement	Extensive Inspection and Repair
5. Other Considerations	Qualitative	• Enhances the longevity of the investment, offering potential future uses for alternative fuels e.g., hydrogen blends	• Greater health and safety risks to Enbridge Gas workers and the public due to potential for unplanned work • Potential for property damage • Logistical and reputational complexities associated with continuous roadway construction

The five assessment dimensions are overlapping and interrelated. The five dimensions are also a combination of quantifiable and qualitative criteria.

Using the Public Safety and Residual Risk dimension, Enbridge Gas assessed the two alternatives by their potential to reduce health and safety risk, operational reliability risk, and financial risks. According to Enbridge Gas, financial risks applied here encompass anticipated costs of pipeline failures, such as property damage, emergency repair costs, and costs associated with restoring service to customers after disruptions.[41]

The Public Disruption and Nuisance dimension encompassed a comparison of disruption and nuisance caused by construction of each alternative. Enbridge Gas stated that assessed by this dimension, full replacement is favorable as it is short-term construction "…strategically planned and scheduled to reduce public inconvenience"[42]. Alternative B – extensive inspection and repairs – would create comparatively more disruption and inconvenience. Enbridge Gas stated that the ongoing inspections and repairs over the life of the asset and impacts of construction likely to occur on a seven-year interval would cause traffic congestion and disruption particularly along Hwy 417 and St. Laurent Boulevard.[43]

A comparative Net Present Value (NPV) assessment of the two alternatives was conducted incorporating an energy transition scenario to establish useful asset life and stranded assets risk.

The "Uncertainty" and "Other Considerations" dimensions have been assessed mainly qualitatively. In comparing the two alternatives, Enbridge Gas focused primarily on the Public Safety and Residual Risk assessment and the Financial assessment (NPV).

Alternative A and Alternative B – Technical Aspects

Technical aspects of the Alternative A and Alternative B assessments included risk reduction and residual risk related to health and safety, operational reliability and financial impacts. The table below summarizes the comparative assessment against these measures. [44]

[41] Exhibit C Tab 1 Schedule 1, page 9

[42] Enbridge Gas Inc. Final Submissions, paragraph 57, page 20
[43] Exhibit C, Tab 1, Schedule 1, paragraphs 15-18, pages 12-13
[44] Exhibit A, Tab 2, Schedule 2, page 3, Table 1

Table 1
Alternatives and Risk Reduction Comparison

Dimension of Alternative Analysis	Metric		Full Replacement	Extensive Inspection and Repair
1. Public Safety and Residual Risk	Risk Reduction from Status-quo	Health and Safety	80x	10x
		Operational Reliability	150x	25x
		Financial[3]	5,000x	300x
	Risk Acceptability and Sustainment		• Residual risk substantially below limits and sustainable	• Residual risk at risk limits and transitory

According to Enbridge Gas, the comparison indicates that full replacement is a favorable option in terms of reduction of health and safety, operation reliability, and financial risk[45] which are all metrics of Public Safety and Residual Risk dimension.

Enbridge Gas determined, based on public safety and residual risk criteria, that the residual risk reduction is acceptable and sustainable for Alternative A. For Alternative B, Enbridge Gas assessed that the limit of risk reduction acceptability is low and transitory (i.e., non-sustainable). On all other metrics (health and safety, operational reliability and financial), Alternative A had an advantageous risk reduction effect compared to Alternative B.[46]

Enbridge Gas advised that when assessing the condition of the SLP, it accounted for the effect of probability of the impact of future inspection, detection, repair on the failure rate and required repair. Enbridge Gas selected the full replacement as its preferred approach based on the risk assessment and the high estimated failure rate of the existing SLP. Enbridge Gas maintained that, considering the current degradation of the SLP pipeline and the amount of required inspection and repair for continued safe SLP operation, the full replacement (Alternative A) has an advantage over extensive inspection and repairs (Alternative B).

[45] Financial risks considered include cost of property damage, emergency repair, restoring service to customers.

[46] Exhibit A, Tab 2, Schedule 2, page 3, Table 1; Exhibit C, Tab 1, Schedule 1, paragraph 40, page 21

Positions of OEB Staff and the Parties on Technical Aspects of Assessment

OEB staff submitted that in terms of risk reduction management, Alternative A – replacement, is favorable. OEB staff noted that the replacement pipelines proposed in the Project are of greater wall thickness and acceptable material toughness compared to those of vintage existing pipes. For that reason, OEB staff submitted that it is expected that future maintenance costs will be much lower compared to the existing vintage pipes over the same operational life.

OEB staff suggested that Enbridge Gas continue to implement the existing and enhanced risk mitigation measures on the existing pipe in order to continue reliable and safe service until the new pipeline is in-service, estimated in 2026.

The intervenors, except for Energy Probe, did not support full replacement as the best alternative to address the need for remedial action of the fitness-for-service and operational safety of the SLP.

ED, SEC, FRPO, Pollution Probe/CAFES Ottawa (referred to collectively here as the opposing intervenors) argued that the full replacement alternative may not be advantageous over extensive inspection and repair, especially over the long run. These intervenors argued that, in economic comparison of the alternatives, Enbridge Gas did not adequately consider the effect of the energy transition on reducing demand and asset life risk of stranded assets. Some of the opposing intervenors argued that the decision should be deferred until further analysis is available, and necessary repairs should be made in the meantime. ED criticized Enbridge Gas's alternatives assessment method and suggested that Enbridge Gas disregarded energy transition risks including risk of stranded assets and financial impacts on Enbridge Gas customers. SEC suggested that the extensive inspections and repair option may be more cost-effective and flexible in the long term compared to full replacement, especially considering energy transition and potential demand reduction.

Financial assessment concerns raised by the opposing intervenors will be discussed in the following section.

Financial Assessment of Alternatives (Including Asset Life Under Energy Transition)

Enbridge Gas conducted an economic NPV assessment comparing Alternative A and Alternative B under three different time horizons:

- Case A: 63 years (61 years from the projected in-service date of 2026), matching the OEB-approved depreciation rate for this asset category (steel

mains)

- Case B: 42 years (40 years from the projected in-service date), matching the typical time horizon Enbridge Gas has used in economic feasibility assessments in previous Leave to Construct applications.
- Case C: 31 years. This useful life was selected to match the most aggressive electrification scenario from Enbridge Gas's energy transition scenario modelling (discussed in more detail below). This scenario projects that no gas customers will remain in 2055 (31 years), such that the SLP would have reached its economic end-of-life.

Table 7
Summary of NPVs for Alternative A and B with Various Useful Lives

NPV ($ millions)	A – Full Replacement	B - Extensive Inspection and Repair	$ Difference (A – B)
Case A (63 years)	$(134)	$(253)	+$119
Case B (42 years)	$(134)	$(179)	+$45
Case C (31 years)	$(134)	$(140)	+$6

Cost Assumptions Used in NPV Assessment[47]

The costs associated with Alternative A are $155 million, while the costs associated with Alternative B are $298 million. In this analysis, Enbridge Gas excluded past costs already incurred for the SLP replacement and potential future costs expected to be common to both alternatives.[48]

The activities and costs associated with Alternative A used in the NPV assessment are:

- Full pipeline replacement ($151.3 million)
- Interest during construction ($3.7 million)

[47]All costs quoted in this section are from Exhibit I.2-Staff-17, attachment 4, and are in 2024 dollars.
[48] For this reason and due to discounting of all costs to 2024 dollars, the costs for Alternative A are not identical to those described for the Project in the "Project costs and economics" section of this decision.

The activities and costs associated with Alternative B are:

- Upfront targeted replacement of 1.9 km of the pipeline ($41.5 million) to address third party damage risks and replacement of a section of NPS 16 pipe with an identified corrosion issue ($2.7 million)
- Upfront measures to:
    - inspect the uninspected portion of the pipeline with crawler in-line inspection tool ($3.9 million)
    - inspect and mitigate remaining critical features already identified from inspected sections of the pipeline ($12.5 million), and inspect and mitigate critical features expected to be identified from the uninspected sections (following crawler in-line inspection) ($16.3 million)
    - implement measures to reduce the threat of third-party damage ($11.8 million)
- Ongoing inspection and repair of the 7.8 km of the existing pipeline that was installed prior to 1978, on a 7-year cycle[49]
    - Crawler in-line inspections, including site preparation ($42.7 million)
    - Inspection and mitigation of identified critical features identified from the crawler in-line inspections ($160.6 million)
    - Possible stuck crawler tool retrieval ($1.8 million)
- Interest during construction ($4.5 million)

Three key input assumptions impacting Enbridge Gas's assessment of the ongoing costs associated with Alternative B are:

- **Frequency of inspection**. Enbridge Gas assumed a 7-year re-inspection interval.
- **The assumed level of identified critical features identified from the ILI inspections that require further inspection and mitigation**. After the initial rounds of mitigation based on the first crawler in-line inspection (which would identify a higher number of critical features), Enbridge Gas estimated the number of digs needed in future inspection cycles based on trend data for similar pipelines from its Transmission Integrity Program.
- **The cost escalator for future costs**. Enbridge Gas used an inflation rate of 3% for most cost categories (based on non-residential construction CPI index), but escalated inspection and mitigation costs at a rate of 6% based on cost trending of integrity digs over the previous 10 years.

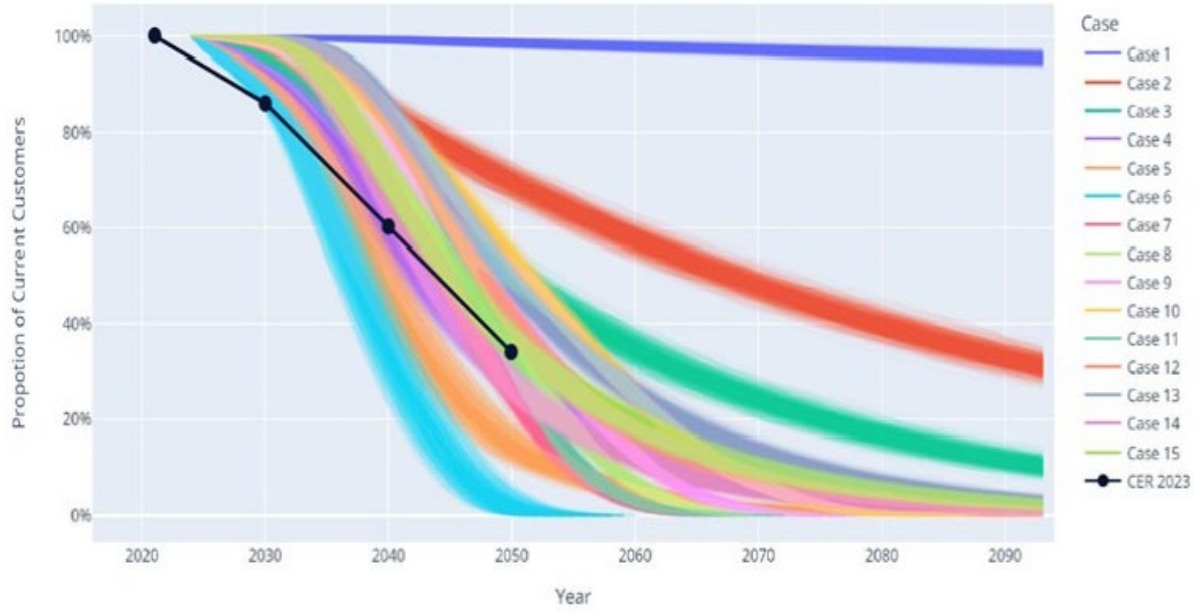
[49] Costs shown for these actions are based on case A, which has inspection and repair measures continuing through 2085.

Energy Transition Analysis and Stranded Asset Risk

Enbridge Gas assessed the potential impacts of energy transition on the SLP Project. The primary purpose of this analysis was to assess the risk of stranded assets associated with the Project. This information was used to inform time horizons used in Enbridge Gas's NPV assessment (i.e., by choosing a time horizon shorter than the technical life of the asset).

Enbridge Gas engaged Integral Engineering to perform probabilistic modeling to estimate the rate at which general service customers might choose to exit the gas system. Integral Engineering modeled multiple scenarios, based on different assumptions around the rate of electric heat pump adoption and customer decisions as to whether and when to disconnect from the gas system following heat pump adoption, and compared the scenario results to the Canadian Energy Regulator's Energy Future 2023 Global Net-Zero Scenario.[50] The model results indicated that under 14 of the 15 scenarios, customers would remain on the system beyond 2060, while under the 15th scenario (with the most aggressive electrification and gas disconnection assumptions), the most likely year in which no general service customer would be present is 2055.

Figure 2 Summary of analysis results: Proportion of Remaining Customers



[50] Exhibit B, Tab 3, Schedule 1, page 15, Figure 2

Enbridge Gas's energy transition analysis also included a review of current federal, provincial and municipal climate policies (including the City of Ottawa's Climate Plan and the status of its Energy Evolution Plan), an analysis of the energy needs of local Large Volume Contract Demand customers, and the state of electricity system planning in the Ottawa area. Enbridge Gas indicated that these reviews provided additional support for its conclusions that there was low risk of the Project's assets being stranded, and that the capacity provided by the Project would be needed well into the future.

Positions of OEB Staff and the Parties on Financial Assessment of Alternatives (Including Asset Life Under Energy Transition)

Parties raised several concerns around Enbridge Gas's NPV assessment, focused on:

- Quantum and cost of future inspection and repair activities
- Cost escalation assumptions
- Energy transition analysis and stranded asset risk

Quantum and cost of future inspection and repair activities

Pollution Probe/CAFES Ottawa and ED submitted that inspection and repair costs associated with Alternative B are likely to be lower than the assumptions used by Enbridge Gas in its NPV assessment. Pollution Probe/CAFES Ottawa proposed a discount factor for inspection and repair costs, stating that these costs have a low probability of occurring, and that the estimated number of integrity digs is far too high, based on the pace of digs for similar pipelines across Enbridge Gas's system. Pollution Probe/CAFES Ottawa and ED further submitted that robotic in-line inspection costs are likely to come down in price in the future as the technology improves and economies of scale are achieved. Enbridge Gas disagreed with these submissions, noting that in general, its cost estimates for both Alternatives were itemized and based on extensive familiarity with these work types and costs. With regard to the cost of robotic in-line inspection specifically, Enbridge Gas indicated that there is no evidence that costs are likely to come down in the future. Enbridge Gas also noted that in-line inspection costs account for only a small portion of the overall cost estimate for Alternative B.

Pollution Probe/CAFES Ottawa and SEC submitted that some inspection and repair work, such as in-line inspections and integrity digs, would likely be required for Alternative A (particularly over the long time horizon of the NPV assessment), yet no costs for these activities were included for Alternative A (only for Alternative B). Enbridge Gas submitted that its NPV assessment correctly included only the incremental costs associated with Alternative B, excluding regular inspection costs that

would be common to both alternatives. Enbridge Gas further submitted that its expectation is that Alternative A would not require in-line inspections or integrity digs, as it will be built to current specifications and would not meet Enbridge Gas's criteria to require in-line inspections.

Cost escalation assumptions

ED, Pollution Probe/CAFES Ottawa, OEB staff, and SEC commented on Enbridge Gas's assumption in its NPV assessment that the costs for integrity digs would increase at an annual rate of 6%. This assumption negatively impacts the economics of Alternative B, given the long time horizon over which these costs would escalate. These parties noted that Enbridge Gas uses a 2% cost escalator as a general assumption in its Asset Management Plan, and that the choice of a 2% cost escalator in the NPV assessment for the proposed Project would change the results significantly, such that Alternatives A and B would have very similar NPVs.[51]

Table 1
Summary of NPVs for Alternative A and B with Various Useful Lives
with Modified 2% Constant Escalation Rate

NPV ($ millions)	A – Full Replacement	B – Extensive Inspection and Repair	$ Difference (A - B)
Case A (63 years)	$(130)	$(134)	+$4
Case B (42 years)	$(130)	$(123)	-$7
Case C (31 years)	$(130)	$(113)	-$17

OEB staff also made a more general comment that high cost escalation rates reduce or even eliminate the benefits associated with deferral of capital spending and make it challenging for any asset life extension activities to pass a cost-effectiveness analysis. OEB staff recommended that Enbridge Gas provide a proposal for the appropriate treatment of cost escalation of Project costs as part of the enhanced Discounted Cash Flow-plus test it is developing under the IRP Framework.

[51] JT 1.7, Table 1

Enbridge Gas submitted that the escalation rates used for purposes of the NPV assessments were appropriate and specific to the elements of work for this Project and were supported by historical data. Enbridge Gas indicated that the integrity digs cost escalation rate of 6% was actually lower than the historical escalation rate and provided several reasons why costs for integrity digs have escalated more rapidly than other pipeline construction costs. Enbridge Gas submitted that the general 2% escalation factor used in the Asset Management Plan is not intended to be used for evaluating the economics of a specific project.

Energy Transition Analysis and Stranded Asset Risk

Parties commented on Enbridge Gas's energy transition analysis (including the modeling approach used by Integral Engineering) and assessment of stranded asset risk, both in the context of the choice of useful asset life for the Project in the NPV assessment, and more broadly with regard to the implications for Enbridge Gas's assessment of alternatives for future system renewal projects.

Several parties submitted that the shortest of the three time horizons (Case C, 31 years) in the NPV assessment of alternatives aligned best with the likely useful asset life of the Project under the energy transition. SEC submitted that this shorter time horizon is likely more reflective of the true economic useful life of the asset. Pollution Probe/CAFES Ottawa submitted that the Project would likely become stranded by 2050, basing its conclusion primarily on the City of Ottawa Energy Evolution Plan's goal of net zero emissions by 2050. Pollution Probe/CAFES Ottawa further submitted that Case C is the closest match and most likely of the three time horizons put forward by Enbridge Gas, and includes a safety factor if the Energy Evolution transition to net zero occurs more slowly than in the Energy Evolution Plan. OEB staff submitted that the useful asset life of the Project is unlikely to be less than the 31-year asset life in Case C, and that this serves as a reasonable time horizon for the NPV assessment.

SEC, Pollution Probe/CAFES Ottawa, and OEB Staff also commented on the stranded asset risk arising from the potential mismatch between useful asset life and economic depreciation. Should the assumption of a 31-year asset life prove correct, the Project would not be fully depreciated at end of life, as the depreciation rate for this asset category is 61 years from its in-service date. OEB staff and SEC noted that Enbridge Gas is required to examine options to ensure its depreciation policy addresses the risk of stranded asset costs as part of its next rebasing. Pollution Probe/CAFES Ottawa, however, submitted that if leave to construct is granted, the OEB should require that the Project be fully depreciated by 2050. Energy Probe submitted that the stranded asset risk for the Project was very low.

In the view of SEC and ED, energy transition considerations should be accounted for in the NPV assessment comparing Alternatives A and B not just in the determination on useful asset life, but also in assigning planning/flexibility value. These parties noted that spending on Alternative A would immediately incur sunk costs, whereas Alternative B (a less capital-intensive solution) would provide the ability to reduce spending if circumstances change and the capacity is no longer needed, in light of the uncertainty associated with the energy transition. Enbridge Gas indicated that from an economic perspective, this did not make sense, because of the high cost of immediate inspection and repair needed to address current health and safety risks, and the relatively low economic value associated with deferral.

With regard to broader implications beyond this particular proceeding, IGUA and SEC both noted that Enbridge Gas's assessment of energy transition considerations and stranded asset risk related to proposed capital investments was a positive step. However, these parties, as well as ED, submitted that the specific approach to consideration of energy transition and stranded asset risk used by Enbridge Gas in this proceeding should not be accepted or endorsed by the OEB as an appropriate methodology for assessing future system renewal or pipeline replacement projects. ED requested that final decisions on general methodological issues wait until a future case in which independent expert evidence can be provided on Enbridge Gas's methodology.

ED, SEC, and OEB staff further noted some specific methodological concerns. Enbridge Gas did not agree with these concerns, as described below. However, Enbridge Gas commented that the energy transition analysis was done in this proceeding for the limited purpose of determining plausible time horizons for the NPV assessment of alternatives, and that Enbridge Gas is not asking the OEB to decide upon or provide direction in respect of broad methodological issues regarding energy transition or IRP analyses for purposes of future applications.

With regard to specific concerns of the modeling approach, ED, SEC, and OEB staff all raised related concerns that Enbridge Gas's assumption that the useful asset life of a pipeline can be defined simply by when zero customers remain on the pipeline is problematic. Enbridge Gas stated that it has a legal obligation to serve its customers and cannot discontinue service to existing customers that would like to remain. SEC noted that in practice, it would expect that Enbridge Gas would implement system pruning or other cost-effective solutions to serve remaining customers rather than continuing to operate a near-empty pipeline. OEB staff and ED made similar points.

ED and SEC also submitted that customer exits (and the need for subsequent rate increases for remaining customers to cover system costs) would likely drive a feedback

loop that would accelerate customer exits, and that this was ignored in the modeling of Integral Engineering. Enbridge Gas submitted that Integral Engineering had provided its expert opinion that the modeling curve it used (a logistic model for the rate of adoption of heat pumps) was the most common approach to modeling adoption of new technology. Enbridge Gas further submitted that it was difficult to predict whether this feedback loop might actually occur, as customers' choices may be affected by a number of countervailing factors, such as government programs that assist customers, capacity on the electricity system, and availability of heat pumps.

SEC and ED suggested that an approach to stranded asset risk needs to encompass forecasted changes in peak demand and the potential for underutilization of the pipeline, rather than focusing exclusively on customer numbers. These parties noted that modeling changes in peak demand would also enable the energy transition analysis to be useful in assessing the possibility of being able to defer the Project and downsize a replacement at a future date. SEC specifically noted that demand from Gazifère in Quebec represents 28.1% of peak demand on the SLP system and suggested that its demand may drop at a faster rate due to differing provincial policies towards natural gas. Enbridge Gas indicated that there were additional uncertainties introduced by modeling peak demand impacts, and the disconnection rate was more relevant than demand for the purpose of this analysis (informing the choice of time horizon in the NPV assessment).

ED raised several additional concerns, including the need for an independent expert with expertise in decarbonization to develop modeling scenarios, rather than using those provided by Enbridge Gas, and an equal weighting given to all scenarios, without assessing which are more or less likely. Enbridge Gas submitted that the scenarios were not broad economic decarbonization scenarios, but targeted scenarios that examine potential rates of customer adoption of heat pumps and subsequent disconnection from the gas system, for which Enbridge Gas had in-house expertise to develop the scenarios together with Integral Engineering. Enbridge Gas also submitted that, while it had presented the results of all modeling scenarios, it had also qualitatively discussed the relative likelihood of scenarios in its evidence (and believed that the scenario with the highest disconnection rate was unlikely).

Findings

Enbridge Gas assessed six project alternatives and narrowed them down to two alternatives as feasible risk reduction strategies:

- Alternative A - Full replacement (the proposed Project)
- Alternative B - Extensive inspection and repair

Enbridge Gas assessed these two alternatives by considering and comparing five "dimensions":

1. public safety and residual risk
2. public disruption and nuisance
3. financial assessment (NPV)
4. uncertainty of plan and outcomes
5. other considerations

The OEB finds that it is appropriate to evaluate project alternatives using a range of considerations and perspectives. The OEB also finds Enbridge Gas's five dimensions are appropriate in grouping the considerations raised in evidence and in submissions in this particular proceeding.

In the previous decision, the OEB stated:

> In more general terms and to the extent applicable for future leave to construct applications, the OEB encourages Enbridge Gas to undertake in-depth quantitative and qualitative analyses of alternatives that specifically include the impacts of IRP, DSM programs and de-carbonization efforts.[52]

In the current application, the OEB finds that Enbridge Gas has taken some steps to improve its consideration of project alternatives. The OEB finds that Enbridge Gas's consideration of alternatives is sufficient to demonstrate that full replacement is the preferred option in this case, and the OEB is, therefore, able to approve the Project. However, as discussed further below, the OEB has identified certain expectations of Enbridge Gas as it continues to refine the evaluation of alternatives in future similar applications.

ED, FRPO, IGUA, Pollution Probe/CAFEs and SEC did not support the replacement option. These intervenors recommended the OEB approve partial replacement with ongoing inspection and repair for the remaining sections of pipeline. These intervenors urged the OEB not to endorse or approve Enbridge Gas's project alternative evaluation (inclusive of its energy transition scenario analysis and other factors) citing a number of concerns, including:

- Energy transition impacts, including:
    - Impact of peak demand reductions and pipeline underutilization resulting from: customer disconnections, reductions in customer demand without full disconnection, and future demand by Gazifère

[52] OEB Decision and Order, EB-2020-0293, May 3, 2022, page 24

    - Impact of the “death spiral” effect where customer exits cause rate increases, which in turn cause more customer exits
    - A realistic definition of the pipeline useful end-of-life
    - Stranded asset risk, including depreciation implications
    - Need for independent expert review of energy transition scenarios
- Consideration of IRP alternatives
- Assumptions used in the inspect and repair alternative, regarding future inspection and repair activities and costs, including cost escalation assumptions

These intervenors were concerned that approval of this application could establish a precedent for billions of dollars in system renewal spending and leave to construct approvals in coming years.

The OEB is not approving or endorsing Enbridge Gas’s project alternative evaluation in this case as a general methodology for future leave to construct applications. The OEB expects Enbridge Gas to consider the submissions of intervenors and OEB staff as it continues to refine its project alternative evaluations for future similar Leave to Construct applications. This may involve further consideration of input assumptions such as energy transition, stranded asset risks, customer demand reductions and asset life.

In terms of financial assessment, Enbridge Gas’s evidence included NPV comparisons based on time horizons of 63, 42 and 31 years to demonstrate the sensitivity of the NPV calculations to different useful asset lives. The OEB has considered the input assumptions, including asset life, in the NPV comparisons of the two risk mitigation alternatives filed by Enbridge Gas. The OEB finds the NPV calculations similar when comparing the two alternatives on the shortest 31-year time horizon. The OEB agrees with intervenors that there are uncertainties in some input assumptions. However, the evidence does not favour the inspect and repair alternative, and the input assumption uncertainties do not override the public safety, technical and timing advantages of a full replacement.

The OEB finds that the replacement option is the preferred alternative when considering public safety in the Ottawa area, public disruption of ongoing excavations and multiple segment replacements, and the uncertainties associated with longer-term repair. In particular, the OEB agrees with Enbridge Gas that the urban environment substantially increases the risk of catastrophic consequences to the public posed by any leak incident on the existing pipeline.

3.3 Project Cost and Economics

Enbridge Gas estimated the Project costs as shown in the table below to be approximately $216.07 million. Enbridge Gas noted it seeks approval for $208.72 million. The differential of $7.35 million is the estimated cost related to implementation of the Targeted Integrity Program to assess the reliability and condition of the SLP beginning in June 2022. Table 1 below itemizes the forecast Project cost:[53]

Table 1

Estimated Project Costs

Item #	Description	Pipeline Costs	Ancillary Costs[1]	Total Costs
1	Materials	$5,713,679	$565,089	$6,278,768
2	Construction & Labour	$105,789,143	$10,462,663	$116,251,806
3	External Permitting & Lands	$1,712,979	$169,416	$1,882,395
4	Outside Services	$16,632,354	$1,644,958	$18,277,312
5	Direct Overheads	$4,209,912	$416,365	$4,626,276
6	Contingency	$19,840,594	$1,962,257	$21,802,850
7	IDC	$3,711,276	$367,049	$4,078,325
8	Project Cost	$157,609,937	$15,587,796	$173,197,733
9	Indirect Overheads & Loadings	$32,321,125	$3,196,595	$35,517,720
10 [2]	Total Project Costs	$189,931,062	$18,784,391	$208,715,452
11	Incremental Investigation Costs	$4,767,202 [3]	$2,582,527 [4]	$7,349,729
12 [5]	Total Project Costs including Incremental Investigation Costs	$194,698,264	$21,366,917	$216,065,181

Project costs set out in Table 1 above include: (1) materials; (2) construction and labour; (3) external permitting and lands; (4) outside services; (5) direct overheads; (6) contingencies; (7) interest during construction (IDC); (9) indirect overheads and loadings; and (11) incremental investigation costs. Enbridge Gas noted that excluding indirect overheads, loadings, and incremental investigation costs, the total estimated cost of the Project is $173.2 million. Contingency of 14.8% is applied to direct capital costs. Enbridge Gas stated that the contingency is based on the current design stage of the Project and was calculated using the risk profile of the Project.

Enbridge Gas noted that the cost estimate for the Project is a Class 3 estimate following the Company's Cost Estimating and Management Standard.[54] The material and service estimates are, according to Enbridge Gas, based on cost estimates obtained from contractor/third party and actual costs up to February 2024, based on project design.

[53] Exhibit E, Tab 1, Schedule 1, page 2, Table 1
[54] Exhibit E, Tab 1, Schedule 1, paragraph 5, page 3

In the table below Enbridge Gas provided a comparison of the forecasted Project cost with the cost of two recently completed projects. [55]

Table 2
Project Cost Comparison – Pipeline Costs ($ millions)

Description	SLP Replacement Project	NPS 20 Replacement Cherry to Bathurst Project (1)	NPS 20 Waterfront Relocation Project (2)
Facility Description	0.3 km of NPS 6 ST XHP; 10 km of NPS 12 ST XHP; 2.5 km of NPS 16 ST XHP; and 4.8 km of IP PE.	4.5 km of NPS 20 ST HP	Temporary Bypass: 0.2 km of NPS 20 ST HP; Permanent Relocation: 0.2 km of NPS 20 ST HP
Materials	6.3	3.5	2.5
Construction & Labour	116.3	71.8	10.2
External Permitting & Lands	1.9	1.1	0.02
Outside Services	18.3	5.2	2.2
Direct Overheads	4.6	1.0	0.3
Contingency	21.8	24.8	4.6
IDC	4.1	1.7	0.4
Project Cost	173.2	107.3	20.2
Indirect Overheads & Loadings	35.5	24.4	3.3
Total Project Costs	208.7	133.0	23.5
Incremental Investigation Costs	7.3	N/A	N/A
Total Project Costs including Incremental Investigation Costs	216.1	N/A	N/A

The Cherry to Bathurst Project[56] is located in Toronto. Construction started in 2021 and was completed in 2023. The pipeline is a 4.5 km long NPS 20 pipeline replacement in an urban setting. Waterfront Relocation Project[57], also located in Toronto, involved only 200 metres of the NPS 20 pipeline constructed in a railway utility corridor. The timing of construction, length and specific location requirements and construction costs of the two projects differ significantly from the St. Laurent Replacement Project.

Enbridge Gas did not propose a unique rate recovery treatment for the capital costs of the Project. Enbridge Gas stated that if the Project is approved and it qualifies for Incremental Capital Module (ICM) recovery, Enbridge Gas will apply for cost recovery in the rate year in which the Project goes into service (2025 or 2026). Enbridge Gas further stated that if there is no ICM recovery, the Project will not be included in rate-base for rate setting purposes until the next rebasing application following the proposed in-service date.[58]

[55] Exhibit E, Tab 1, Schedule 1, page 3, Table 2
[56] EB-2020-0136
[57] EB-2022-0003
[58] Enbridge Gas response to OEB staff interrogatory I.1-STAFF-2 b)

Positions of OEB Staff and the Parties

OEB staff had no concern with the forecast cost for the Project.

Pollution Probe/CAFES Ottawa submitted that $22,406,044 incurred in the denied application EB-2020-0293 should not be included in the Project's costs. Enbridge Gas clarified that it considers these costs to be associated with the current Project and incurred prior to year 2025.[59]

SEC suggested that costs Enbridge Gas incurred to cancel contracts and leases because the previous application was denied should not be included in the costs of the current Project.[60] Enbridge Gas responded that the costs from the previous SLP application should be approved as part of the current project costs because they were incurred at an earlier stage of the same project. [61] SEC's position was that "…the project cost forecasts are sufficient to support leave to construct approval, but not adequate to justify rate recovery at this time".[62]

OEB staff noted that Enbridge Gas's comparison of the SLP Replacement Project cost with the costs of the Cherry to Bathurst and Waterfront Relocation projects was not meaningful because these are not comparable to the SLP Replacement Project.

OEB staff noted that in the Standard Conditions of Approval agreed upon by Enbridge Gas, Condition No. 6 (see Schedule A of this Decision and Order), would require that Enbridge Gas file with the OEB the actual capital cost of the Project and explain variances and the use of contingencies.

Findings

The estimated capital cost of the Project is $208.7 million including interest, overhead and contingency. The OEB finds that this cost estimate is adequate for the purpose of approving this leave to construct application. However, Enbridge Gas will have to justify the actual cost of the Project when it seeks rate recovery.

The OEB agrees with OEB staff that the comparison that Enbridge Gas provided with the costs of two other completed construction projects is not meaningful to support the cost forecasts in this application. These projects were in urban environments, yet as

[59] Enbridge Gas Inc. Reply Argument, paragraph 150, page 51
[60] SEC Submissions, pages 9-10
[61] Enbridge Gas Inc. Reply Argument, February 7, 2025, paragraph 152, page 52
[62] SEC Submissions page 10

they were constructed several years ago, the cost of materials and labour have changed.

Regarding Enbridge Gas's proposed inclusion of past costs incurred with the previous SLP application, the OEB finds that this is a rates issue and directs Enbridge Gas to address this issue when it seeks rate recovery for the Project.

As stated in Condition (6) of the Conditions of Approval (see Schedule A), Enbridge Gas shall file with the OEB a final monitoring report including a post-construction financial report which includes a variance analysis of project cost compared to the estimated cost filed in this proceeding, including the extent to which the Project contingency was utilized. The final monitoring report shall also address the issue of rate recovery of past costs incurred with the previous SLP application. This final monitoring report will assist with the prudence review of the actual cost of the Project in Enbridge Gas's next rebasing proceeding for the asset to be added to rate base.

3.4 Environmental Matters

Dillon Consulting Limited (Dillon) was retained by Enbridge Gas to undertake an environmental and socio-economic impact study to select the preferred route. The results of the study are documented in the Environmental Report (ER) included in the application. The ER assessed the existing bio-physical and socio-economic environment in the study area, the alternative routes, the proposed preferred route, public consultation program, impact assessment, and proposed mitigation measures to minimize the impacts of the Project.

The ER was finalized in June 2020 and ER Amendment 1 was completed in November 2020. ER Amendment 2 was completed in January 2024 and provides an additional assessment of the segments added to the proposed pipeline routes since the ER prepared for the original application.

The ER amendment 2 was circulated to members of the Ontario Pipeline Coordinating Committee (OPCC) and other stakeholders for review and comment. Enbridge Gas provided an updated consultation log in its response to OEB staff interrogatories.

Enbridge Gas notes that a Federal Land Use, Design and Transaction Approval (FLUDTA) level 1 or 2 application and a federal determination under the Impact Assessment Act (IAA) are each required for the Project. Enbridge Gas states that the

IAA and FLUDTA have been accepted and that a federal determination under the IAA is expected in early 2025.[63]

Enbridge Gas stated that it is looking at site options for replacing the Rockcliffe Control Station and that the exact route for the pipeline at Rockcliffe Park is subject to change pending the outcome of a site selection process. Enbridge Gas also stated the locations under consideration for the relocation of the Rockcliffe Control Station fall within the study area of the ER.

Enbridge Gas confirmed in its response to OEB Staff interrogatories that the environmental assessment includes the areas that are under consideration for any changes to the pipeline route and that if additional changes are required to the Project Route to address the potential relocation of the Rockcliffe Control Station, those locations will be assessed in accordance with OEB's Environmental Guidelines.[64]

Positions of OEB Staff and the Parties

OEB staff submitted that Enbridge Gas has completed the ER in accordance with the OEB'S *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario*. OEB staff has no concerns about the environmental aspects of the Project, based on Enbridge Gas's commitment to implement the mitigation measures set out in the ER. OEB staff also submitted that Enbridge Gas's compliance with the conditions of approval outlined in Schedule A will ensure that impacts of pipeline construction are mitigated and monitored. OEB staff noted the site options for the relocation of the Rockcliffe Control Station are included in the study area of the ER.

In a submission, Pollution Probe/CAFES Ottawa submitted that if leave to construct is approved, a Condition of Approval for Enbridge Gas to file the completed Environmental Protection Plan prior to the commencement of construction should be included, similar to the Condition of Approval for the most recent St. Laurent pipeline project completed.[65] The condition in EB-2019-0006 reads as follows:

3. Enbridge Gas shall file an Environmental Protection Plan. Enbridge Gas shall also implement all the recommendations of the Environmental Protection Plan and

[63] Enbridge Gas Response to OEB Staff 20-b), September 27, 2024
[64] Enbridge Gas Response to OEB Staff 21-d) and 21-f), September 27, 2024
[65] In its Consolidated Submission, January 24, 2025, page 6, Pollution Probe/CAFES Ottawa referred to EB-2019-0006 OEB Decision, September 26, 2019, page 8

Environmental Report filed in the EB-2019-0006, and all the recommendations and directives identified by the Ontario Pipeline Coordinating Committee review.

Pollution Probe/CAFES Ottawa further submitted that this is “particularly important given the Study Area used for the Project was not sufficient to include impacts from the actual location of construction that Enbridge Gas intends to follow as the final terminus of the Project will be the relocated Rockcliffe Station which is currently not decided.”

In its reply submission, Enbridge Gas stated that the “250 m wide Study Area, defined by the expert consultant Dillon, around the alternative routes was based on the start and end points of the routes, and included areas that were most likely to be directly or indirectly affected by the project.” Enbridge Gas states further that “this size of study area is commonly used in the environmental assessment process and has been acceptable to the OEB in many previous applications.”

Enbridge Gas also submitted that the pipe associated with the project for all new potential Rockcliffe Station Relocation sites still falls within the Study Area and should Enbridge Gas relocate the station in the future, it will conduct its planning work in accordance with federal, provincial and municipal regulations.

Findings

The OEB finds that Enbridge Gas prepared its Environmental Report (ER) in accordance with the OEB Guidelines. As indicated in Condition (4) in Schedule A of this Decision and Order, Enbridge Gas shall implement all the recommendations of the ER filed in this proceeding, and all the recommendations and directives identified by the Ontario Pipeline Coordinating Committee review.

The OEB notes that the site options for the relocation of the Rockcliffe Control Station are included in the study area of the ER.

The OEB agrees with the Condition of Approval proposed by Pollution Probe/CAFE Ottawa for Enbridge Gas to file the completed Environmental Protection Plan prior to the commencement of construction. The condition has been incorporated in the attached Schedule A Conditions of Approval.

3.5 Land Matters

Enbridge Gas stated that the majority of the Project route will be located in the public road allowance. Temporary working areas will be required where the road allowance is too narrow or confined to facilitate construction. Enbridge Gas also stated that permanent easement will be required for the Project.

Enbridge Gas notes that an easement for segments of the existing pipeline through Rockcliffe Park on lands owned by the National Capital Commission (NCC) has expired and that it will engage with the National Capital Commission to renegotiate any required easement for the preferred pipeline route.

In response to OEB staff interrogatories, Enbridge Gas stated that it anticipates that agreement will be reached with all landowners where required.[66] Enbridge Gas states that the NCC's required Federal Land Use and Transaction Approval (FLUDTA) process required for the Project is currently in the consultation phase and that the NCC's approval period is usually two to four months.[67]

Positions of OEB Staff and the Parties

OEB staff submitted that the OEB should approve the proposed forms of easement and temporary land use agreements as both were previously approved by the OEB.

OEB Staff submitted that it currently has no concerns with the relocation of Rockcliffe Station as the proposed conditions of approval require Enbridge Gas to obtain all necessary approvals, permits, licences, and certificates needed to construct, operate and maintain the Project.

In its reply submission, Enbridge Gas stated that the relocation of Rockcliffe Station resides under a different energy regulator requiring a separate approval and that should Rockcliffe Station be relocated in the future, it will conduct its planning work in accordance with federal, provincial and municipal regulations.

Findings

The OEB approves the proposed forms of easement and temporary land use agreements as both were previously approved by the OEB.

Regarding the relocation of the Rockcliffe Station, the conditions of approval in this Decision and Order (Schedule A) require Enbridge Gas to obtain all necessary approvals, permits, licenses and certificates needed to construct, operate and maintain the Project.

3.6 Indigenous Consultation

Enbridge Gas conducted consultation with the Indigenous communities potentially affected by the St. Laurent Replacement Project as required by OEB *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and*

[66] Enbridge Gas response to OEB Staff 22-a), September 27, 2024
[67] Enbridge Gas Response to OEB Staff 23-a) and 23-b), September 27, 2024

Facilities in Ontario (Guidelines).The Indigenous consultation started in 2020 for the St. Laurent Ottawa North Project.[68] On January 30, 2020, the Ministry of Energy and Electrification (Ministry) delegated procedural aspects of Indigenous consultation related to St. Laurent Ottawa North Replacement Project. The Ministry identified that Enbridge Gas should consult with Algonquins of Ontario and Mohawks of Akwesasne.[69]

On November 7, 2023, Enbridge Gas sent an update to the Project description, consistent with this this application. Enbridge Gas received a letter from the Ministry of Energy on December 21, 2023 (2023 Delegation Letter), indicating that, consistent with the Ministry of Energy's previous delegation letter issued January 30, 2020, the consultation list will continue to include Algonquins of Ontario and Mohawks of Akwesasne. With respect to consultation with the Algonquins of Ontario, the Ministry indicated that the Algonquins of Pikwakanagan First Nation is one of the communities that comprise the Algonquins of Ontario and should be notified separately for consultation and engagement purposes. Enbridge Gas proceeded as directed in the 2023 Delegation Letter. On September 15, 2023, Enbridge Gas informed the communities identified in the 2023 Delegation Letter of the changes to Project scope and of its intent to file a new application to construct the replacement pipeline.

The evidence on Indigenous consultation for the current application includes an updated Indigenous Consultation Report (ICR) as of April 8, 2024, and updated correspondence logs updated as of April 8, 2024. In response to OEB staff interrogatories Enbridge Gas filed further updates to the ICR and consultation log to cover period between April 8, 2024 and September 13, 2024. [70] Enbridge Gas noted that there have been no outstanding issues or concerns raised by the Indigenous communities.[71] The Algonquins of Ontario expressed the importance of environmental and archaeological impacts of the Project and requested ongoing consultation on the Project. Enbridge Gas stated it would be providing a field site visit requested by Algonquins of Pikwakanagan First Nation.

On November 8, 2024 the Ministry issued a Letter of Opinion to Enbridge Gas, which Enbridge Gas filed on the record in this proceeding. The Ministry's Letter of Opinion stated "…based on this review of materials and our outreach to Indigenous communities, ENERGY is of the opinion that the procedural aspects of consultation

[68] EB-2020-0293 application for the St. Laurent replacement by Enbridge Gas was denied by the OEB by Decision and Order dated Mar 3, 2022.
[69] The Indigenous consultation process and outcomes for the EB-2-2020-0293 is described in EB-2024-0200 Exhibit H, Tab 1, Schedule 1
[70] Exhibit H, Tab 1, Schedule 1,Attachment 6 Updated Summary of Indigenous Consultation Report; and Attachment 7 Consultation Log Updated as of April 8, 2024 and Response to OEB staff interrogatory I.5-STAFF-24 Attachment 1(updated summary ICR and consultation, log between April 8,2-24 and September 13, 2024)
[71] Exhibit H, Tab 1, Schedule 1, page 5, paragraph 15

undertaken by Enbridge to-date for the purposes of the Ontario Energy Board's Leave to Construct for the Project are satisfactory."[72]

Positions of OEB Staff and the Parties

OEB staff noted that Enbridge Gas filed the Letter of Opinion issued by the Ministry. In the Letter of Opinion the Ministry expressed its satisfaction with the procedural aspects of the consultation. OEB staff submitted that Enbridge Gas appeared to have made efforts to engage with potentially affected Indigenous groups and no concerns that could materially affect the Project have been raised through its consultation to date. OEB staff observed that Enbridge Gas appeared 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 stated it was not aware of any potential adverse impacts of the Project to any Aboriginal or treaty rights. OEB staff noted that Enbridge Gas has committed to "…continue to engage throughout the life of the Project to ensure any impacts on Aboriginal or treaty rights are addressed as appropriate."[73]

OEB staff submitted that Enbridge Gas appeared to have made efforts to engage with affected Indigenous groups and no concerns that could materially affect the Project had been raised through its consultations to date. OEB staff observed that Enbridge Gas appeared 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 stated that it was not aware of any potential adverse impacts of the Project to any Aboriginal or treaty rights.

No other party made submission on this issue.

Findings

Based on the Ministry's Letter of Opinion and the record of this proceeding, the OEB is satisfied that the duty to consult has been adequately discharged by Enbridge Gas.

3.7 Conditions of Approval

OEB staff sought comments from Enbridge Gas on OEB's Standard Conditions of Approval for leave to construct applications[74]. In response, Enbridge Gas agreed with the Standard Conditions of Approval.

[72] Exhibit H, Tab 1, Schedule 1, Attachment 4, page 1
[73] Exhibit H, Tab 1, Schedule 1, paragraph 15, page 5
[74] 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.

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

OEB staff submitted that, should the OEB grant leave to construct the Project, the approval should be subject to the Conditions of Approval as proposed in the OEB staff submission.

Findings

This Decision and Order is subject to the conditions of approval attached as Schedule A.

4 ORDER

THE ONTARIO ENERGY BOARD ORDERS THAT:

1. Enbridge Gas Inc. is granted leave, pursuant to section 90(1) of the OEB Act, to construct the Project in the City of Ottawa as described in its application.

2. Pursuant to section 97 of the OEB Act, the OEB approves the form of Easement Agreement and Form of Temporary Land Use Agreement that Enbridge Gas Inc. has offered or will offer to each owner of land affected by the Project.

3. Leave to construct is subject to Enbridge Gas Inc. complying with the Conditions of Approval set out in Schedule A.

4. Parties in receipt of confidential information shall either return the subject information to the Registrar and communicate to Enbridge Gas Inc. that they have done so; or destroy or expunge the information and execute a Certificate of Destruction, following the end of this proceeding, in accordance with the OEB's *Practice Direction on Confidential Filings*. The Certificate must be filed with the Registrar and a copy sent to Enbridge Gas Inc.

5. Eligible intervenors shall file with the OEB and forward to Enbridge Gas Inc. their respective cost claims in accordance with the OEB's *Practice Direction on Cost Awards* on or before **April 8, 2025.**

6. Enbridge Gas Inc. shall file with the OEB and forward to intervenors any objections to the claimed costs of the intervenors on or before **April 17, 2025**.

7. If Enbridge Gas Inc. objects to any intervenor costs, those intervenors shall file with the OEB and forward to Enbridge Gas Inc. their responses, if any, to the objections to cost claims on or before **April 28, 2025**.

8. Enbridge Gas Inc. shall pay the OEB's costs incidental to this proceeding upon receipt of the OEB's invoice.

DATED at Toronto March 18, 2025

ONTARIO ENERGY BOARD

Nancy Marconi

Digitally signed by Nancy Marconi
Date: 2025.03.18 12:42:12 -04'00'

Nancy Marconi
Registrar

SCHEDULE A

DECISION AND ORDER

ENBRIDGE GAS INC.

EB-2024-0200

Leave to Construct Application under Section 90 of the OEB Act

Enbridge Gas Inc.
EB-2024-0200

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-2024-0200 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 start date, at least 10 days prior to the date the facilities begin to 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 full Project in-service date, no later than 10 days after all 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 shall file an Environmental Protection Plan prior to construction start. Enbridge Gas shall also implement all the recommendations of the Environmental Protection Plan and Environmental Report filed in EB-2024-0200, 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 7(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 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. The Post Construction Financial Report shall also address the issue of rate recovery of past costs incurred with the previous SLP application.

7. 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 full Project in-service date, which shall:
      i. provide a certification, by a senior executive of the company, of Enbridge Gas Inc.'s 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 full Project 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.'s adherence to Condition 4
      ii. describe the condition of any rehabilitated land
      iii. describe the effectiveness of any actions taken to prevent or mitigate any identified impacts of construction
      iv. include the results of analyses and monitoring programs and any recommendations arising therefrom

v. 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

8. Enbridge Gas Inc. shall designate one of its 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 clearly post the Project manager's contact information in a prominent place at the construction site