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November 2, 2020

VIA EMAIL and RESS

Ontario Energy Board - Registrar
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

**Re: Enbridge Gas Inc. (Enbridge Gas)
Ontario Energy Board (OEB) File: EB-2020-0136
NPS 20 Replacement Cherry to Bathurst – Argument-in-Chief**

In accordance with Procedural Order No. 3 dated October 27, 2020, enclosed please find the Argument-in-Chief of Enbridge Gas.

Please contact the undersigned if you have any questions.

Yours truly,

Joel Denomy
Technical Manager, Regulatory Applications

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*,
S.O. 1998, c. 15 (Sched. B), as amended (the “OEB Act”); and

AND IN THE MATTER OF an application by Enbridge Gas
Inc. under section 90 of the OEB Act for an order or orders
granting leave to construct natural gas pipeline and ancillary
facilities in the City of Toronto.

ENBRIDGE GAS INC.

LTC APPLICATION: CHERRY TO BATHURST NPS 20 PIPELINE REPLACEMENT PROJECT ARGUMENT IN CHIEF

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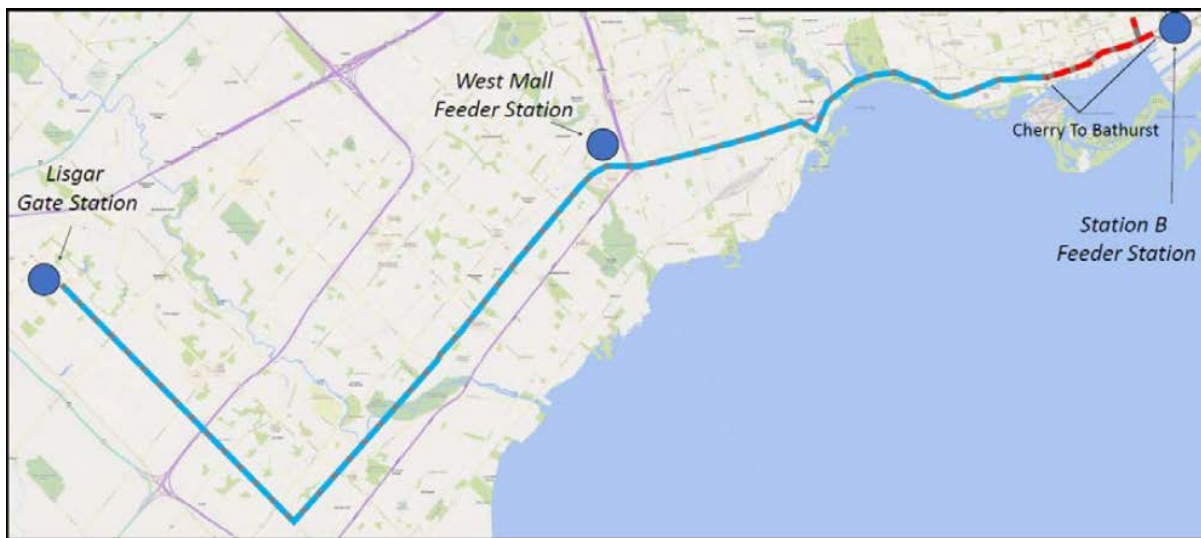
A. OVERVIEW

1. On July 31, 2020, Enbridge Gas Inc. (Enbridge Gas, or the Company) filed an updated application with the Ontario Energy Board (OEB, or the Board) seeking leave to construct (LTC) facilities to allow the Company to replace a 4.3 km segment of Nominal Pipe Size (NPS) 20 inch High Pressure (HP) steel (ST) natural gas main on Lake Shore Boulevard from Cherry Street to Bathurst Street and a 230 m section on Parliament Street from Mill Street to Lake Shore Boulevard East (C2B or the Project) in the City of Toronto, Ontario.
2. The pipeline to be replaced by the Project is located in the densely populated urban area of downtown Toronto. It supplies natural gas to a large population of residential, apartment, commercial and industrial customers. It is a critical distribution main that supplies natural gas to a diverse mix of customers in the downtown core and provides an important link between natural gas supply from the Lisgar Gate Station to the west of Toronto and Station B Feeder Station in Toronto.
3. The existing pipeline is a vintage steel main that was installed in or around 1954. Enbridge Gas has identified integrity and reliability concerns with the existing pipeline through review of records, asset health review investigations and assessments, inline inspections (ILIs), integrity digs and other reviews. It is not practical or reasonable to simply repair this existing pipeline as issues are identified, because of the huge amount of repair work that would be required. Enbridge Gas estimates that it would have to complete one integrity dig for every 26 m of the C2B segment over the next 40 years if the existing pipeline is not replaced. The disruption, cost and risk associated with constant repair work on this essential pipeline means that replacement is the more prudent option.
4. Enbridge Gas has worked with two independent consultant companies to identify the preferred route for the Project. The preferred route will minimize disruption. For the most part, the preferred route follows the existing C2B pipeline route.

5. In order to meet Project timelines, Enbridge Gas respectfully requests the approval of this Application as soon as possible or not later than February 2021. With leave of the Board, Enbridge Gas expects to commence construction of the Project in the second quarter of 2021.
6. In this Argument in Chief, Enbridge Gas sets out the background and context that led to this Application, as well as the details of the proposed Project and how it meets the Board's test for LTC approval. Enbridge Gas will not predict and respond to positions that other parties may take in their submissions but will instead respond to those submissions in Reply Argument.

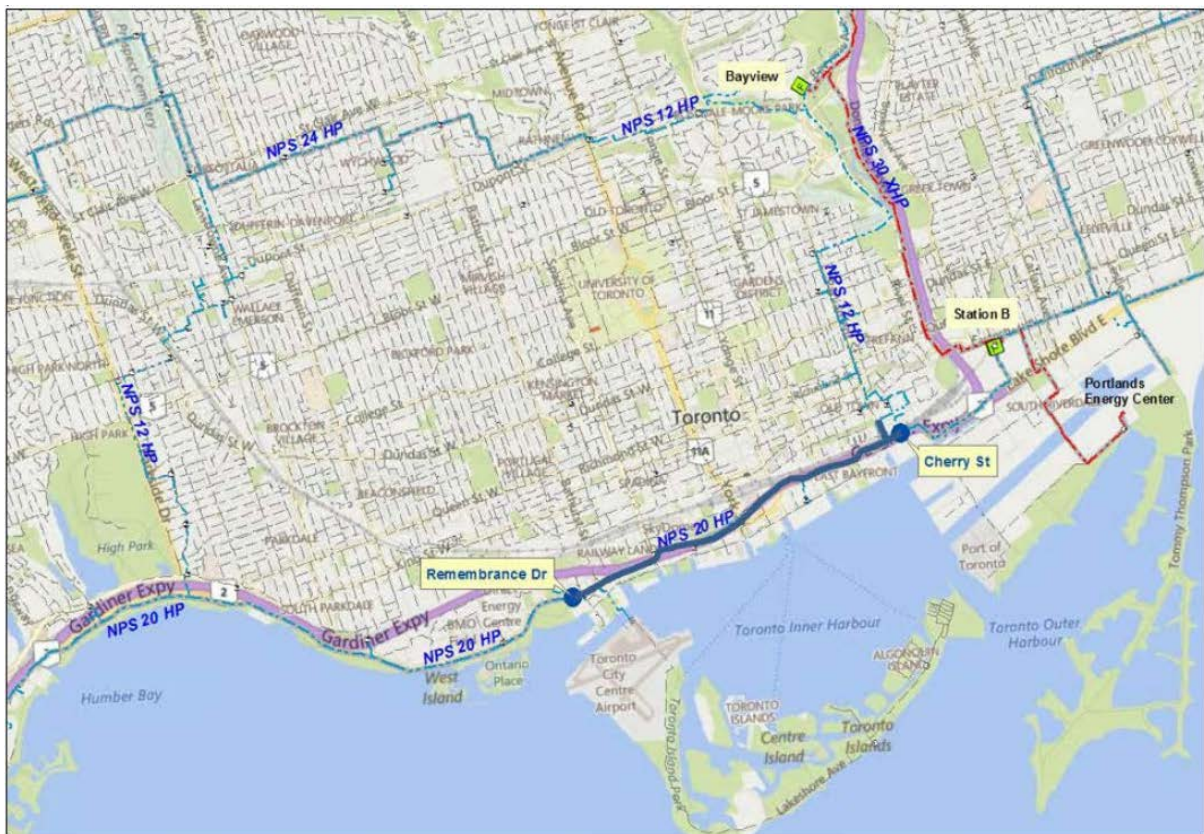
B. BACKGROUND AND CONTEXT FOR THE PROJECT

7. The segment of pipeline to be replaced is part of the NPS 20 HP ST natural gas main that is the backbone of the Kipling Oshawa Loop (KOL). The C2B segment of the KOL is fed from Station B Feeder Station in the east and from the West Mall Feeder Station and Lisgar Gate Station in the west. The map below shows the location of the KOL 20 inch pipeline to the south and southwest of Toronto, the sources of supply for the KOL and the segment of pipeline to be replaced (C2B is shown in red).¹



¹ Exhibit B, Tab 1, Schedule 1, para. 2.

8. The C2B segment of pipeline is located in a densely populated downtown area of the City of Toronto where a pipeline failure could result in loss of gas distribution service for thousands of customers or in the extreme place public safety at risk. The potential consequences of a failure are amplified as the C2B segment is located in a high consequence area including characteristics such as wall-to-wall concrete, a densely populated downtown core with residential, commercial and critical customers, the Gardiner Expressway, utility congested road allowance, and close proximity to railway/public transportation.² The map below shows details of the C2B segment of the KOL pipeline (from Cherry Street in the east to Remembrance Drive in the west).



9. The area served by the C2B segment of the KOL has the highest density of customers within the Enbridge Gas franchise area and is one of the largest economic centers in Canada. In addition to the residential, commercial, institutional (including hospitals)

² Exhibit B, Tab 1, Schedule 1, para. 3.

and government buildings served in this area, there are several large volume customers served by Enbridge Gas. These customers include Redpath Sugar, the University of Toronto and Enwave Energy Corporation (Enwave). Enwave provides district heating to approximately 180 buildings in downtown Toronto. Many of these indirectly served buildings (i.e. indirectly served by Enbridge Gas through Enwave) include hospitals, commercial office towers and condominiums representing approximately 40 million square feet of real estate within downtown Toronto.³

10. Should the C2B segment of the KOL experience a defect or sustain damage, Enbridge Gas may need to temporarily reduce operating pressures within the pipeline segment or shut down the line depending on the severity of the defect or damage sustained. Any pipeline defects or failures that could or do release gas into the atmosphere would most likely require a large emergency response and mitigation effort. If this situation were to occur during a period of high demand, for example under design conditions, there may be supply interruptions to many of the customers supplied directly and/or indirectly by the C2B segment of the KOL.⁴

11. Enbridge Gas's Distribution Integrity Management Program (DIMP) continually evaluates assets to identify risks and determine the condition of pipelines in the distribution network. Analysis conducted by Enbridge Gas in 2015 and 2016 via an asset health review (AHR) observed that vintage steel mains, defined as those mains installed in the 1970s and prior thereto, have demonstrated declining health compared to steel mains installed after the 1970s. The AHR identified three major pipelines with vintage steel mains requiring further investigation, including the KOL.⁵ The C2B segment of the KOL was installed in or around 1954.⁶

³ Exhibit B, Tab 1, Schedule 1, para. 27.

⁴ Exhibit B, Tab 1, Schedule 1, para. 28. Analysis of the consequences of a failure of the C2B segment of the KOL pipeline is set out at paras. 29-32.

⁵ Exhibit B, Tab 1, Schedule 1, para. 4. Details about the AHR process, including a February 2016 presentation on "Asset Renewal Plan", are found at Exhibit I.EP.3 and the associated Attachment 1.

⁶ Exhibit I.TORONTO.11c).

12. Canadian Standards Association (CSA) standard Z662 provides guidance on when a pipeline operator should address pipeline integrity and condition concerns. It is the responsibility of the pipeline operator, in this case Enbridge Gas, to monitor the condition of its pipeline assets and compare the condition of those assets to the guidance set out in CSA Z662. Should the condition of a pipeline be such that it creates a risk pursuant to CSA Z662 guidance, the pipeline operator must address the condition of the pipeline. Enbridge Gas's Integrity Management Program incorporates the guidance set out in CSA Z662. Pipeline condition will typically be addressed via repairs or replacement. In the case of the C2B segment of the KOL, Enbridge Gas has determined that replacement is appropriate.⁷
13. Enbridge Gas's Asset Management Plan (AMP) has identified the KOL as having all of the characteristics and external environmental risks of vintage steel mains including but not limited to corrosion, dents, compression couplings on mains and services, reduced depth of cover, shallow blow-off valves, drips/siphons, lack of cathodic protection, live stubs, mitered bends, stray current from hydro infrastructure and contaminated soil.⁸ Therefore, the KOL has been identified as potentially requiring repair or replacement due to its condition.⁹
14. As noted, the C2B segment is located in a highly congested area of downtown Toronto with the potential for large impacts to customers in the event of a pipeline incident. As a result, Enbridge Gas prioritized the C2B segment as the first part of the KOL to be investigated in more detail to ascertain the condition of this segment.¹⁰

⁷ Exhibit B, Tab 1, Schedule 1, para. 5.

⁸ Exhibit B, Tab 1, Schedule 1, para. 6. Also, as described at Exhibit I.ED.1d), in 2011 Enbridge Gas conducted an External Corrosion Direct Assessment (ECDA) on parts of the KOL line (including the C2B segment), and it identified potential issues with cathodic protection levels and coating condition. The ECDA report is filed as Attachment 2 to Exhibit I.ED.1d).

⁹ Relevant excerpts from the 2018-2027 Asset Management Plan (AMP) describing the Company's steel mains and the NPS 20 KOL Replacement Project are filed as Attachments 2 and 3 to Exhibit I.ED.3. The Project is also described in the more recent AMPs, including the 2021-2030 AMP filed in the 2021 Rates Proceeding (Phase 2) – EB-2020-0181, Exhibit C, Tab 2, Schedule 1: see Exhibit I.STAFF.3e).

¹⁰ Exhibit B, Tab 1, Schedule 1, para. 7.

15. In 2016 and 2018, Enbridge Gas performed ILIs using a robotic crawler tool on approximately 1.9 km of the 4.5 km section of pipeline being replaced by the Project.¹¹ Features the robotic tool is able to detect include internal and external corrosion, dents, changes in wall thickness, previous repairs, residual liquids and debris. It also provides topography data on features of the pipeline such as long-seam welds, girth welds, sleeves and hot tap fittings.¹²
16. The ILI assessments provided additional information (above that provided in the AHR) indicating that the C2B segment of the KOL requires remediation or replacement due to pipeline condition pursuant to CSA Z662 guidelines.¹³
17. The 2016 ILI was conducted on approximately 415 m of pipeline from roughly Cherry Street to Parliament Street. This ILI found two areas that required immediate rehabilitation activities, in the form of integrity digs, pursuant to CSA Z662 guidance. These integrity digs were conducted in 2017 and repaired portions of the C2B segment exhibiting significant wall loss in addition to other areas requiring repair within the extent of the excavation for the integrity dig. The results of the 2016 ILI also indicated that this segment of pipeline contains several anomalies which would likely require remediation or replacement. The 2018 ILI was conducted on approximately 1.5 km of pipeline from Parliament Street to Bay Street. The results of the 2018 ILI indicated that the segment of pipeline inspected contains numerous anomalies which would likely require remediation or replacement.¹⁴
18. As described in the prefiled evidence, the anomalies discovered by the ILI process can be classified as corrosion and dents.
19. Corrosion is the deterioration of a steel pipeline that results from an electrochemical reaction with its immediate surroundings. This reaction causes the iron in the steel

¹¹ A map of the location of the 2016 and 2018 ILIs is found at Exhibit B, Tab 1, Schedule 1, Figure 2.

¹² Exhibit B, Tab 1, Schedule 1, para. 9.

¹³ Exhibit B, Tab 1, Schedule 1, para. 10.

¹⁴ Exhibit B, Tab 1, Schedule 1, para. 11. The inspection reports from the 2016 and 2018 ILIs are filed at Exhibit I.TORONTO.12a).

pipe to oxidize (rust). Corrosion results in metal loss along the pipeline. Over time and if left unmitigated, corrosion can cause the steel to lose its strength and possibly render it unable to contain the natural gas within the pipeline at its operating pressure. Remediation to corroded pipeline can be achieved by repair of the corrosion areas by way of a sleeve (structural reinforcement steel that is welded around the pipeline) or by replacing the segment of the pipe that is corroded. The ILIs identified more than 1000 metal loss anomalies (likely corrosion), and of these almost 200 had an area of more than 100 cm².¹⁵

20. A dent in a natural gas pipeline causes a localized stress and strain concentration and a localized reduction in the pipe diameter. A dent's area and depth are the critical factors used to assess the severity of the dent. Remediation to pipeline dents can be achieved by repairing the dented pipeline by way of a composite repair sleeve and reinforcement system (a system of related fiberglass and resin matrix products used to repair defects on pipelines), or by cutting out and replacing the segment of pipe that has been dented. The ILIs identified 16 dents.¹⁶

21. Repairs to identified anomalies are completed through "integrity digs".¹⁷ Based on the data gathered through the completed ILIs, Enbridge Gas forecasts that around 72 integrity digs would have to be conducted on the inspected sections of the C2B segment in the next 40 years (taking into account that required digs could be combined where close to one another).¹⁸

22. In addition to the anomalies identified by the ILIs, the C2B segment also exhibits several other features requiring mitigation and/or repair. These features include reduced depth of cover, cathodic protection, field applied coatings and compression couplings.¹⁹ As indicated in the AMP, these features are all characteristic of vintage

¹⁵ Exhibit B, Tab 1, Schedule 1, para. 13.

¹⁶ Exhibit B, Tab 1, Schedule 1, para. 14.

¹⁷ Exhibit I.EP.8b).

¹⁸ Exhibit B, Tab 1, Schedule 1, para. 15.

¹⁹ Exhibit B, Tab 1, Schedule 1, paras. 20-24.

steel mains. These features provide an indication of degradation of the pipeline and that the C2B segment is reaching the end of its safe and reliable service life and that a repair approach is not sustainable or cost effective.²⁰

23. The ILI results and the expected number of integrity digs were considered by Enbridge Gas as an indication of the condition of the C2B segment that was not inspected in 2016 or 2018. Specifically, due to the location of the C2B segment relative to the parts of the segment for which ILIs were conducted, comparable environmental conditions (such as high concentrations of petroleum hydrocarbons and volatile organic compounds) and its year of construction, Enbridge Gas believes it is reasonable to expect that the remaining 2.6 km of the C2B segment is in a similar condition to that of the segments of C2B for which ILIs were conducted. This is supported by the fact that many of the features described in the preceding paragraph (aside from the ILI anomalies) are observed across the entire C2B segment and not just along the sections of C2B that were inspected.²¹

24. Based on the observations described above, and in consideration of the additional costs that would be incurred, Enbridge Gas made the decision to not conduct an ILI of the remaining 2.6 km of the C2B segment.

25. Using the information provided by the ILIs, Enbridge Gas developed a forecast of the number of integrity digs that could be required on the full C2B segment over the next 40 years. These projections were developed using an engineering forecasting model called PiMSlider. Using data from the 2016 and 2018 ILIs, the model was used to forecast the number of integrity digs that would be required for the 1.9 km C2B segment that was inspected in 2016 and 2018. Enbridge Gas then extrapolated these results to arrive at an integrity dig forecast for the entire 4.5 km of the C2B segment. In total, 171 integrity digs are expected over the next 40 years (for comparison purposes, Enbridge Gas completed only 70 integrity digs per year across its entire

²⁰ Exhibit B, Tab 1, Schedule 1, para. 25.

²¹ Exhibit B, Tab 1, Schedule 1, paras. 17 and 18. See also Exhibit I.EP.6b) and Exhibit I.EP.9b).

system in 2019 and 2020²²). The table below provides the results of this analysis. The number of integrity digs forecast through this analysis equates to one integrity dig for every 26 m of the C2B segment.²³

Number of Integrity Digs in Years:	Number of Integrity Digs	Cumulative Number of Integrity Digs
1-10	30	30
11-20	44	74
21-30	46	120
31-40	51	171
Total	171	171

26. Having identified the issues to be addressed for the C2B segment of the KOL, Enbridge Gas considered two options for the Project. The first option was to repair issues at localized areas via integrity digs on the C2B segment of the KOL rather than replacing this segment (Repair Option). The second option was to replace the C2B segment of the KOL (the Project).²⁴ A table comparing the advantages and disadvantages of each option is included in the prefiled evidence.²⁵

27. Based on the condition of the KOL as assessed through the DIMP, AMP and ILI processes, as well as the qualitative analysis comparing the advantages and disadvantages of each option, Enbridge Gas determined that the Project (i.e. replacement of the C2B segment) is the preferred option over the Repair Option.²⁶

C. DETAILS OF THE PROJECT

28. The Project will require the construction of approximately 4.5 km of NPS 20 HP ST natural gas pipeline to replace the existing vintage steel main. The Project commences at the intersection of Cherry Street and Lake Shore Boulevard where it will tie-in to an existing natural gas pipeline. From there it travels west along Lake

²² Exhibit I.EP.8c).

²³ Exhibit B, Tab 1, Schedule 1, para. 16.

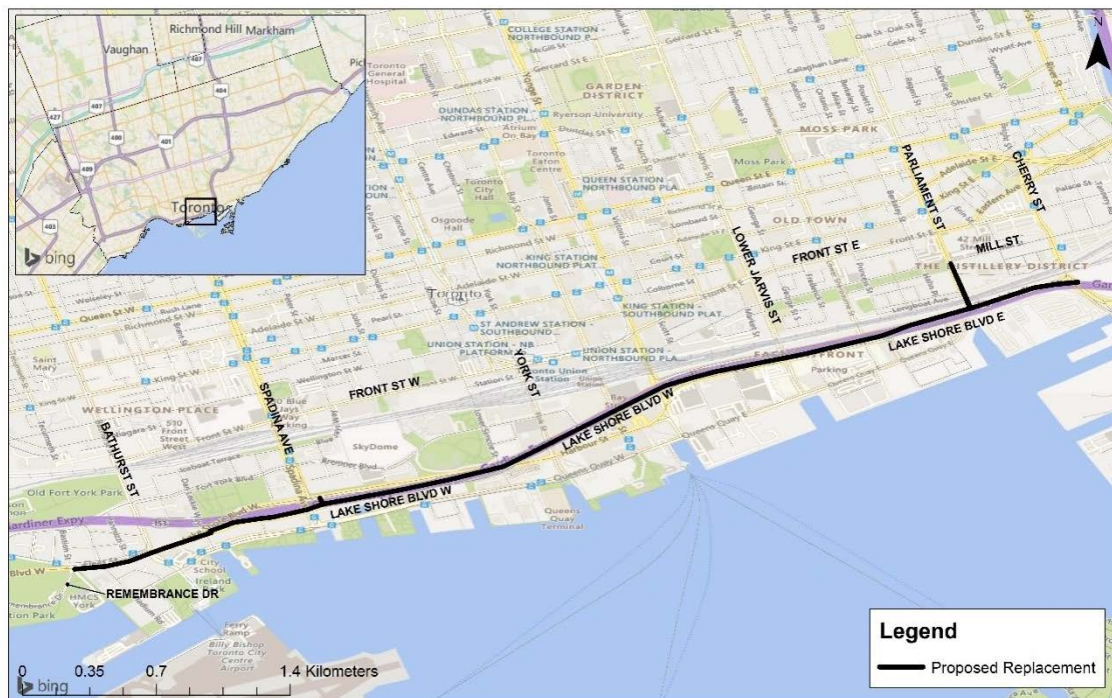
²⁴ Exhibit B, Tab 1, Schedule 1, para. 41.

²⁵ Exhibit B, Tab 1, Schedule 1, Table 10.

²⁶ Details about the approval of the Project (including the choice to repair rather than replace) can be found in the documents attached to Exhibit I.EP.2, as well as the narrative response to that interrogatory. See also Exhibit I.TORONTO.13 for discussion of why continual repair of the C2B segment is not a viable option.

Shore Boulevard (and parts of Harbour Street) to Remembrance Drive (west of Bathurst Street) where it will tie-in to an existing natural gas pipeline. The Project also requires the construction of a tie-in lateral (the North Tie-In Lateral) which commences at the intersection of Mill Street and Parliament Street.²⁷ At that intersection the North Tie-in Lateral will tie-in to an existing natural gas pipeline. From there the North Tie-in Lateral travels approximately 230 m south along Parliament Street to Lake Shore Boulevard where it will tie-in to the facilities to be constructed along Lake Shore Boulevard.²⁸ The vintage steel main pipeline being replaced will be abandoned in place by cutting the pipeline into sections and sealing all open ends.²⁹

29. A map showing the Project facilities is set out below.³⁰



²⁷ The North Tie-in lateral is a part of the Project which will tie-in to the Cherry to Bathurst portion of the Project at the intersection of Lake Shore Boulevard and Parliament Street and from there travel along Parliament Street where it will tie-in to an existing pipeline on Parliament Street. See Exhibit C, Tab 1, Schedule 1, para. 11.

²⁸ Exhibit B, Tab 1, Schedule 1, para. 47.

²⁹ See Exhibit I.ED.10g) and Exhibit I.STAFF.2a) and c). Details about the accounting treatment for abandonment costs can be found at Exhibit I.ED.10c).

³⁰ This map is reproduced from the Board's Notice for this proceeding.

30. Construction of the Project is expected to commence in June 2021. Project construction is expected to take approximately 16 months. The Project is expected to be in-service by August 2022.³¹ The proposed construction schedule for the Project is set out below:

Receipt of Permits and Approvals	April, 2021
Expected LTC Approval	February, 2021
Commence Construction	June, 2021
Expected In-Service	August, 2022
Completion of Construction	September, 2022
Completion of Reinstatement	October, 2022
Final Inspection	June, 2023

31. Total capital costs for the Project (inclusive of overheads) are estimated to be approximately \$133 million. Details are set out below.³²

<u>Item No.</u>	<u>Description</u>	<u>Cost</u>
1.0	Material Costs	\$3,486,320
2.0	Labour Costs	\$71,820,730
3.0	External Permitting, Land	\$1,055,700
4.0	Outside Services	\$5,199,780
5.0	Direct Overheads	\$950,975
6.0	Contingency Costs	\$24,754,051
7.0	Project Cost	\$107,267,556
8.0	Indirect Overheads	\$24,073,159
9.0	IDC	\$1,707,176
10.0	Total Project Costs	\$133,047,891

³¹ Exhibit D, Tab 1, Schedule 1, para. 9.

³² Exhibit D, Tab 1, Schedule 1, para. 12.

D. THE PROJECT MEETS THE OEB'S REQUIREMENTS FOR LTC APPLICATIONS

32. In determining whether a project is in the public interest and warrants LTC approval under section 90 of the OEB Act, the Board typically examines the following criteria: need for the project, project alternatives, project costs and economics, environmental impacts, landowner impacts and Indigenous consultation.³³ Enbridge Gas has satisfied these criteria for the Project as outlined in the evidence and summarized below.

Need for the Project

33. The “need” for this Project is explained in the “Background and Context for the Project” section of this Argument in Chief. Briefly, this Project will replace a segment of vintage steel pipeline that is exhibiting integrity issues, in order to ensure continued safe and reliable service to a densely populated area of downtown Toronto. The continued operation of this segment of pipeline is important to not only the customers directly served, but also to other parts of Toronto, because this section of the KOL forms a critical segment of a HP pipeline loop which connects multiple feeder stations.³⁴

Project Alternatives

34. Enbridge Gas looked at three items in relation to Project alternatives: (i) repair versus replace; (ii) pipeline size; and (iii) Project routing.

35. As described above in the “Background and Context for the Project” section of this Argument in Chief, Enbridge Gas determined that it is not reasonable to undertake a repair approach to the identified and anticipated integrity issues with the C2B segment of the KOL.³⁵

³³ See, for example EB-2019-0172 Decision and Order, April 1, 2020, page 4 (Windsor Line Replacement LTC); and EB-2019-0188 Decision and Order, May 7, 2020, page 4 (North Bay - Northshore and Peninsula Roads LTC).

³⁴ Exhibit B, Tab 1, Schedule 1, para. 26.

³⁵ Enbridge Gas's evidence also includes a comparison of the costs between the repair and replace options. The total cost of the repair option is substantially higher, though the net present value (NPV) is marginally lower because the replace costs will be incurred in the coming years, while the repair costs would be incurred over 40 years. See Exhibit B, Tab 1, Schedule 1, paras. 43-46, as well as Exhibit I.STAFF.3b).

36. In summary, the majority of the Cherry to Bathurst segment was installed in 1954. While a pipeline can be repaired indefinitely, doing so for the Cherry to Bathurst segment would result in tiny segments being replaced over time until the pipeline is a patchwork of repair sleeves and joints. Every repair would have a different installation date/year to be monitored. From a socio-economic and environmental perspective this approach would be extremely costly and disruptive. For the Cherry to Bathurst segment Enbridge Gas is forecasting a requirement of an integrity dig every 26 m for the next forty years. Enbridge Gas does not believe that this is an appropriate approach or a reasonable maintenance activity for this vital pipeline.³⁶
37. In terms of the size of the pipeline, Enbridge Gas has determined that a like-for-like replacement of the existing 20-inch pipeline is required, because a smaller diameter pipeline would not be sufficient in the event of system disruptions in the future. Important context for this alternative is that the cost difference between an NPS 20 pipeline (as proposed) and a smaller NPS 16 pipeline is quite modest – Enbridge Gas estimates that total Project costs would be reduced by only 5% to 10% if the Project could be completed using NPS 16 pipeline.³⁷
38. Enbridge Gas expects that downtown Toronto will continue to grow over the coming years. In total Enbridge Gas is aware of fifty-five developments in the immediate area of the C2B segment that are either scheduled for occupancy in 2020 or 2021, under construction or in the development process.³⁸ This supports the Company's view that there will be ongoing and potentially increasing demand to be served by the C2B segment of the KOL, even if there are some demand reductions from existing customers.³⁹

³⁶ Exhibit I.TORONTO.13.

³⁷ Exhibit I.FRPO.5.

³⁸ Exhibit B, Tab 1, Schedule 1, paras. 32-33.

³⁹ See, for example, Exhibit I.ED.3. As explained in response to Exhibit I.ED.5, Enbridge Gas has conducted high-level analysis to estimate the demand reduction that would be required to permit the replacement pipeline to be NPS 16, rather than NPS 20 – the Company's estimate is that current demand would have to be decreased by around 18% in order for an NPS 16 replacement pipeline to be sufficient in the scenario where the DV line is isolated on an 18 degree day (0°C).

39. Integrated Resource Planning (IRP) is not considered a viable option to support downsizing or delaying the Project. Enbridge Gas has used a high-level screening process and determined that in-depth Integrated Resource Planning (IRP) analysis is not warranted for this Project. The Project is driven by integrity issues and is a like-for-like replacement of only part of a major pipeline (KOL) that serves much of Downtown Toronto and surrounding area.⁴⁰

40. As described in prefiled evidence, Enbridge Gas reviewed three scenarios to determine if the C2B segment could be downsized and therefore lower the overall cost of the Project. The scenarios were selected as they represent situations where gas supply from a particular source is cut to the KOL. Each scenario examined the performance of the KOL assuming a smaller pipe size, NPS 16, is constructed for the C2B segment, in order to determine if the KOL could maintain gas supply under conditions that the KOL has either experienced in the past or to simulate a major supply disruption. The scenarios did not take into account customer growth. The scenario analysis shows that minimum pressures would not be maintained on parts of the C2B segment if the pipeline was downsized to NPS 16 and experienced a supply disruption at one of the studied locations.⁴¹

41. An NPS 16 replacement solution would have the further disadvantage of impacting existing operational flexibility that is critical to maintain supply to the downtown core of Toronto during adverse operating conditions. A reduction in pipe size for this segment alone on the KOL line would also reduce Enbridge Gas's ability to implement a straightforward inline-inspection program on the KOL main should it choose to do so in the future. The existing pipeline has many unpiggable fittings on it currently, but Enbridge Gas's current design practices for vital mains require piggable fittings for any new installation. A pipeline constructed with different sizes negates this potential for

⁴⁰ Exhibit B, Tab 1, Schedule 1, para. 40.

⁴¹ Exhibit B, Tab 1, Schedule 1, paras. 35-38. Further detail about the scenario analysis, including the fact that one of the hypothetical scenarios (isolation of the DV line) has occurred twice in recent years, is found at Exhibit I.ED.2a).

single ILI runs, leading to increased future costs if an ILI program is developed for this pipeline in the future.⁴²

42. In terms of the routing for the Project, Enbridge Gas took several steps to determine potential routes for the Project and to ultimately determine the preferred route (PR) for the Project. Potential routes for the Project were developed internally by Enbridge Gas. Additionally, independent experts were hired to opine on the routes developed by Enbridge Gas, to recommend and evaluate alternative routes for the Project and to develop an Environmental Report (ER) for the Project.⁴³

43. Enbridge Gas retained Golder Associates Inc. (Golder) to perform a desktop corridor routing study to determine potentially feasible corridor options for the Project. The purpose of the analysis was to recommend potential routes that could be used during consultation for the Project and in development of the ER for the Project. Golder evaluated two potential routes developed by Enbridge Gas and developed and evaluated five other potential routes for the Project. Golder's evaluation used technical and non-technical spatial information, subject matter experts and facilitated workshops to evaluate and recommend potential pipeline routes. The seven potential routes were evaluated and analyzed considering environmental, social and technical decision criteria typically examined in an ER, the regulatory process and in provincial and municipal permitting processes.⁴⁴

44. Enbridge Gas analyzed the route options identified by Golder. The routes presented in the Golder Report had overlapping corridor sections that most commonly favoured sections along Queens Quay, Lake Shore Boulevard, or Harbour Street. These routes were refined by Enbridge Gas. Refinements were made for route changes (relative to the Golder recommended routes) to ensure that the Project was within right of way

⁴² Exhibit I.ED.5.

⁴³ Exhibit C, Tab 1, Schedule 1, para. 10. See also Exhibit I.EP.19 for description of the work done by the experts.

⁴⁴ Exhibit C, Tab 1, Schedule 1, paras. 11-13. The Golder Report is filed at Exhibit C, Tab 1, Schedule 1, Attachment 2.

(ROW) for each of the potential routes resulting in three potential routes. This process resulted in three routes being chosen for assessment as part of the ER.⁴⁵

45. These three routes, identified as Option A, Option B and Option C (each of which include the North Tie-In Lateral) were then used during consultations for the Project, to develop the ER for the Project and to ultimately select a PR for the Project. Through this process, including the ER prepared by Dillon Consulting Ltd. (Dillon), Option B was selected as the PR for the Project. Options A and C were identified as alternative routes (AR) for the Project.⁴⁶

46. The PR was chosen based on public consultation, environmental and socio-economic concerns, and technical and constructability requirements. Stakeholder engagement played an important role in the process of identifying the routes assessed in the ER. The PR is sited in existing, previously disturbed municipal road right of way (ROW), which greatly reduces potential adverse effects to the surrounding environment.⁴⁷

Project Costs and Economics

47. The forecast capital costs of the Project facilities are reasonable. Details of each of the line items in the forecast budget were provided in response to interrogatories.⁴⁸

48. As explained in interrogatory responses, the forecast costs of the Project are relatively high because of the anticipated expense of working in congested conditions alongside Lake Shore Boulevard and under the Gardiner Expressway in downtown Toronto.⁴⁹

⁴⁵ Exhibit C, Tab 1, Schedule 1, para. 14.

⁴⁶ Exhibit C, Tab 1, Schedule 1, para. 16.

⁴⁷ Exhibit C, Tab 1, Schedule 1, paras. 16-17. A map showing the location of the PR and the ARs is found as Figure 5 in Exhibit C, Tab 1, Schedule 1.

⁴⁸ The high-level cost forecast is found at Exhibit D, Tab 1, Schedule 1, para. 12. Further details about the line items 1.0 to 5.0 (Direct Costs) can be found at Exhibit I.EP.23. Further details about line item 6.0 (Contingency Costs) can be found at Exhibit I.EP.24 and Exhibit I.PP.13c) and d). Further details about line 8.0 (Indirect Overheads) can be found at Exhibit I.EP.25

⁴⁹ See, for example, Exhibit I.STAFF.3f), which includes a comparison of forecast Project costs with other recent OEB-approved projects, along with explanations for differences in project costs. As the Board acknowledged in the EB-2019-0188 LTC, Decision and Order (North Bay – Northshore and Peninsula Roads), other projects are not always appropriate cost comparators because of differences in scope, geography and conditions (see page 10).

49. Enbridge Gas plans to request incremental capital module (ICM) treatment of some or all of the Project costs within its 2022 Rates Application (subject to calculation of the ICM threshold for the EGD rate zone for 2022).⁵⁰

50. Enbridge Gas has not conducted an economic analysis for the Project because it is driven by integrity requirements and will not change the available capacity for the C2B segment of the KOL.⁵¹

Environmental Impacts

51. Enbridge Gas retained Dillon to undertake a route evaluation and environmental and socio-economic impact study, which included a cumulative effects assessment, to select the PR for the Project. As part of the development of the study, a consultation program was implemented to receive input from interested and potentially affected parties including Indigenous communities. Input gathered from the consultation program was evaluated and integrated into the study. Mitigation measures designed to minimize environmental and community impacts resulting from construction of the Project were also developed as part of the study.⁵²

52. The results of Dillon's study are documented in the ER.⁵³ The ER conforms to the Board's Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition, 2016 (Guidelines). Enbridge Gas supports the findings made by Dillon and will reflect these in the implementation of the Project.⁵⁴

⁵⁰ Exhibit I.PP.1c).

⁵¹ The OEB has accepted this rationale for not conducting an economic analysis in previous LTC applications driven by integrity requirements – see for example the EB-2019-0172 Decision and Order for the Windsor Replacement Project, at page 15.

⁵² Exhibit C, Tab 1, Schedule 1, para. 1.

⁵³ The ER is filed as Attachment 1 to Exhibit C. Details of the Route Evaluation Process can be found in Section 2.0 of the ER and details of the Route Selection process can be found in Section 4.0 of the ER. Details of the Consultation Program can be found in Section 3.0 of the ER.

⁵⁴ Exhibit C, Tab 1, Schedule 1, para. 3.

53. Construction of the Project will be conducted in accordance with Enbridge Gas's Construction and Maintenance Manual and the recommendations in the ER. An Environmental Protection Plan (EPP) will be developed for the Project. The EPP will incorporate recommended mitigation measures contained in the ER and those mitigation measures obtained from agency consultation for the environmental issues associated with the proposed works. A qualified Environmental Inspector or suitable representative will be available to assist the Project Manager in ensuring that mitigation measures identified in the EPP as well as permitting requirements and any associated conditions of approval in the Board Decision are adhered to and that commitments made to the public, landowners and agencies are honoured.⁵⁵

54. Recommended mitigation measures for potential effects have been developed in the ER to address environmental and socio-economic features found along the PR.⁵⁶ These include but are not limited to:

- Groundwater
- Atmospheric Environment
- Human Occupancy and Resource Use
- Infrastructure and Community Services
- Archaeological and Cultural Heritage Resources
- Potentially Contaminated Lands

55. Using the procedures found within the ER, EPP and additional mitigation measures provided by regulatory agencies through the permitting and approval process, it is expected that environmental impacts resulting from construction of the Project will not be significant. Enbridge Gas will complete the EPP prior to mobilization and construction of the Project.⁵⁷

56. A Stage 1 Archaeological Assessment (AA) for the PR was completed by Timmins

⁵⁵ Exhibit C, Tab 1, Schedule 1, para. 24.

⁵⁶ Exhibit C, Tab 1, Schedule 1, para. 25.

⁵⁷ Exhibit C, Tab 1, Schedule 1, para. 27.

Martelle Heritage Consultants Inc. (TMHC).⁵⁸ The Stage 1 AA was submitted to the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) on June 4, 2020. It will be reviewed by the MHSTCI to determine if it will be accepted into the Ontario Public Register of Archaeological Reports. Enbridge Gas will provide the clearance letter to the Board once it is received from MHSTCI.⁵⁹

Landowner Impacts

57. With the Project facilities being constructed in municipal road allowances, Enbridge Gas expects that all necessary land rights and permit approvals will be in place prior to the commencement of construction.⁶⁰ Enbridge Gas may need temporary working areas along the pipeline route where the road allowance is too narrow or confined to facilitate construction.⁶¹ Enbridge Gas is applying under Section 97 of the OEB Act for an order approving the form of working area agreements offered to owners of land affected by the route or location of the proposed facilities.⁶²

Indigenous Consultation

58. Enbridge Gas has followed the OEB and Ministry of Energy Northern Development and Mines (MENDM) processes in relation to Indigenous consultation.⁶³ On October 14, 2020, MENDM provided Enbridge Gas with a Letter of Opinion indicating that “the procedural aspects of consultation undertaken by [Enbridge Gas] to date for the purposes of the Ontario Energy Board’s Leave to Construct approval process for the Cherry to Bathurst NPS 20 Pipeline Replacement Project is satisfactory”.⁶⁴

E. RELIEF REQUESTED

59. Enbridge Gas requests that the Board make the following Orders:

- (i) an Order pursuant to section 90 of the OEB Act granting leave to construct

⁵⁸ The Stage 1 AA can be found in Appendix A of the ER.

⁵⁹ Exhibit C, Tab 1, Schedule 1, paras 27 and 30 and Appendix A.

⁶⁰ Exhibit E, Tab 1, Schedule 1, para. 2.

⁶¹ Exhibit E, Tab 1, Schedule 1, para. 3.

⁶² The form of agreement can be found at Exhibit E, Tab 1, Schedule 1, Attachment 1.

⁶³ Evidence about Indigenous Consultation is found in the F-series of exhibits. See also Exhibit I.STAFF.6.

⁶⁴ Exhibit I.STAFF.6, Attachment 1.

the Project facilities; and

- (ii) an Order pursuant to section 97 of the OEB Act approving the proposed form of working area agreements.

60. Enbridge Gas has reviewed and accepts the proposed Conditions of Approval provided by OEB Staff, except for one item: the Company requests that item 2a) be amended to stipulate that construction must commence within 18 months of LTC approval, rather than within 12 months.⁶⁵ This is consistent with the Conditions of Approval for the Don River Replacement Project, a recent project completed in downtown Toronto.⁶⁶

61. Enbridge Gas has agreed with the City of Toronto that it would be appropriate for the Board to include the following additional Condition of Approval which has been part of recent LTC Decisions⁶⁷ – “Enbridge Gas shall obtain all necessary approvals, permits, licences, certificates, agreements and rights required to construct, operate and maintain the Project.”

62. With leave of the OEB, Enbridge Gas expects to commence construction of the Project in the second quarter of 2021.⁶⁸ In order to meet Project timelines, Enbridge Gas respectfully requests the approval of this Application by February 2021.

All of which is respectfully submitted this 2nd day of November 2020.



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⁶⁵ Exhibit I.STAFF.7.

⁶⁶ EB-2018-0108 Decision and Order, Schedule B, item 2a).

⁶⁷ See, for example, EB-2019-0188 Decision and Order, Schedule B, item 2.

⁶⁸ Exhibit B, Tab 1, Schedule 1, para. 32.